

# ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

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Director  
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May 8, 2017

Mr. Angel Correa  
Division Administrator  
Federal Highway Administration  
700 West Capitol, Room 3130  
Little Rock, Arkansas 72201-3298

Re: Job Number 080439  
FAP Number STPR-0053(29)  
Bridge Numbers 01720 & 01721  
Bear Creek & So. Fourche La Fave  
River Strs. & Apprs.  
Perry County  
Tier 3 Categorical Exclusion

Dear Mr. Correa:

The Environmental Division has reviewed the referenced project and it falls within the definition of the Tier 3 Categorical Exclusion as defined by the AHTD/FHWA Memorandum of Agreement on the processing of Categorical Exclusions. The following information is included for your review and, if acceptable, approval as the environmental documentation for this project.

The purpose of this project is to replace two weight-restricted and functionally obsolete bridges on Highway 7 over Bear Creek and South Fourche La Fave River in Perry County. A project location map is enclosed.

The existing roadway consists of two 10-foot wide paved travel lanes with 1-foot wide shoulders. Existing right of way width averages 110 feet. Proposed improvements include two 11-foot wide paved travel lanes with 6-foot wide shoulders. The average right of way width required for the proposed project will be 155 feet. Approximately 9.0 acres of additional right of way and 0.44 acre temporary construction easement will be required for this project.

Design data for this project is as follows:

Design Year	Average Daily Traffic	Percent Trucks	Design Speed
2017	1,100 vpd	10	55 mph
2037	1,300 vpd	10	55 mph

Information on the proposed bridge replacements can be found in the following tables:

<b>Bear Creek Bridge – Bridge Number 01721</b>				
	Sufficiency Rating	Dimensions	Number of Lanes	Structure Type
Existing	41.2	304' x 21.6'	2	Two 90' pony truss spans & four 30' reinforced concrete deck girder spans
Proposed	N/A	422.6' x 37.2'	2	5-span continuous W-beam on drilled shafts; 1 unit (100-180' downstream of existing)

<b>South Fourche La Fave River Bridge – Bridge Number 01720</b>				
	Sufficiency Rating	Dimensions	Number of Lanes	Structure Type
Existing	49.8	485' x 21.7'	2	Two 100' pony truss spans & seven 40' reinforced concrete deck girder spans on 24° skew
Proposed	N/A	498.6' x 37.2'	2	6-span continuous W-beam on drilled shafts; 2 units (50' downstream of existing)

There are no relocations, floodplains, or public water supplies associated with this project. There are no *Executive Order 12898* Environmental Justice issues involved with this project. Field inspections found no evidence of existing underground storage tanks or hazardous waste deposits. Approximately 2.1 acres of Farmland of Statewide Importance will be converted to highway right of way. Form NRCS-CPA-106 is enclosed.

The proposed project involves U.S. Forest Service (USFS) lands. Approximately 5.2 acres of additional right of way and 0.36 acre temporary construction easement of Ouachita National Forest property will be required for this project. Timber will be cut for the construction of the proposed project and utility relocation. Native vegetation will be planted on USFS lands.

The South Fourche Campground, a USFS facility, is eligible for Section 4(f) protection as a recreational resource. Of the campground's 2.3 total acres, approximately 0.42 acre of permanent right of way and approximately 0.37 acre of temporary construction easement will be required for project construction. The proposed project is not anticipated to harm the recreational components of the South Fourche Campground. Impacts to the campground and measures to reduce or mitigate these impacts are described in the enclosed Section 4(f) *de minimis* evaluation.

The existing structures to be replaced were built in 1933 as part of a funding program for USFS roads. The South Fourche La Fave River Bridge is listed on the National Register of Historic Places (NRHP) and the Bear Creek Bridge is eligible for inclusion on the NRHP; both bridges are eligible for Section 4(f) protection as historic sites. The bridges were marketed by the AHTD, but no responsible entity came forward to assume ownership. The enclosed Memorandum of Agreement calls for documentation to mitigate demolition of the bridges. The programmatic Section 4(f) evaluation for the bridges is also enclosed. No other historic or cultural resources will be impacted as part of the proposed project. Arkansas State Historic Preservation Officer concurrence is enclosed.

Approximately 290 feet of an unnamed ephemeral tributary to Bear Creek and 53 feet of Little Bear Creek, a perennial stream will be impacted, for a total of 333 linear feet of stream impacts at the Bear Creek bridge replacement. Approximately 1606 linear feet of an unnamed ephemeral tributary to the South Fourche La Fave River will be impacted at the South Fourche La Fave River bridge replacement. The AHTD will mitigate these impacts by purchasing credits from a U.S. Army Corps of Engineers-approved mitigation bank. Construction of the proposed project should be allowed under the terms of an Individual Section 404 Permit.

The proposed project lies within the range of the following federally listed species: the endangered harperella plant (*Ptilimnium nodosum*), the endangered pink mucket (*Lampsilis abrupta*), the endangered scaleshell (*Leptodea leptodon*), the threatened Arkansas fatmucket (*Lampsilis powellii*), and the threatened northern long-eared bat (*Myotis septentrionalis*). A determination of "no effect" was made for the pink mucket and the Arkansas fatmucket. A determination of "not likely to adversely affect" was made for harperella, the scaleshell, and the northern long-eared bat. Impacts as a result of the proposed project to threatened and endangered species, as well as USFS species of concern, are discussed in the enclosed Biological Evaluation. U.S. Fish and Wildlife (USFWS) clearance is enclosed.

The Final 4(d) Rule and the Programmatic Biological Opinion (BO) applies to this project's activities that have the potential to affect northern long-eared bats. The Final 4(d) Rule exempts the incidental take of northern long-eared bats from take prohibitions in the Endangered Species Act. This exemption applies as long as the activities do not occur within 0.25 mile of a known hibernaculum or within 150 feet of a known occupied maternity roost from June 1 to July 31. No known hibernaculum or maternity roosts exist within the project area; therefore, the project can proceed without restrictions. All offsite locations will require coordination with the USFWS. The Northern Long-Eared bat 4(d) Rule Streamlined Consultation Form is enclosed with the USFWS clearance.

Noise predictions have been made for this project utilizing the Federal Highway Administration's Traffic Noise Model (TNM) 2.5 procedures. These procedures indicate that noise levels are below the FHWA noise criteria beyond the project's proposed right of way limits. Any increases in roadway noise levels will not be the result of the proposed project, but instead a result of traffic volume increases during the planning period (Year 2037). Any noise level increases will occur independent of this proposed project, and no project related noise impacts are anticipated. In compliance with Federal guidelines, local authorities will not require notification.

If you have any questions, please contact the Environmental Division at 569-2281.

**APPROVED**  
  
Environmental Specialist  
Federal Highway Administration  
Date: 5-8-2017

Sincerely,

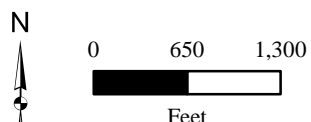
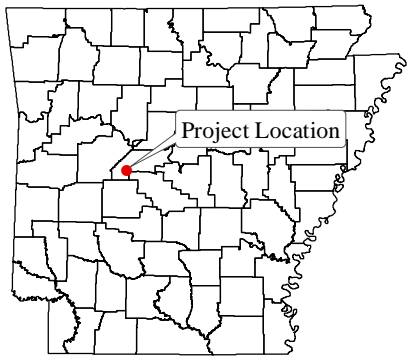
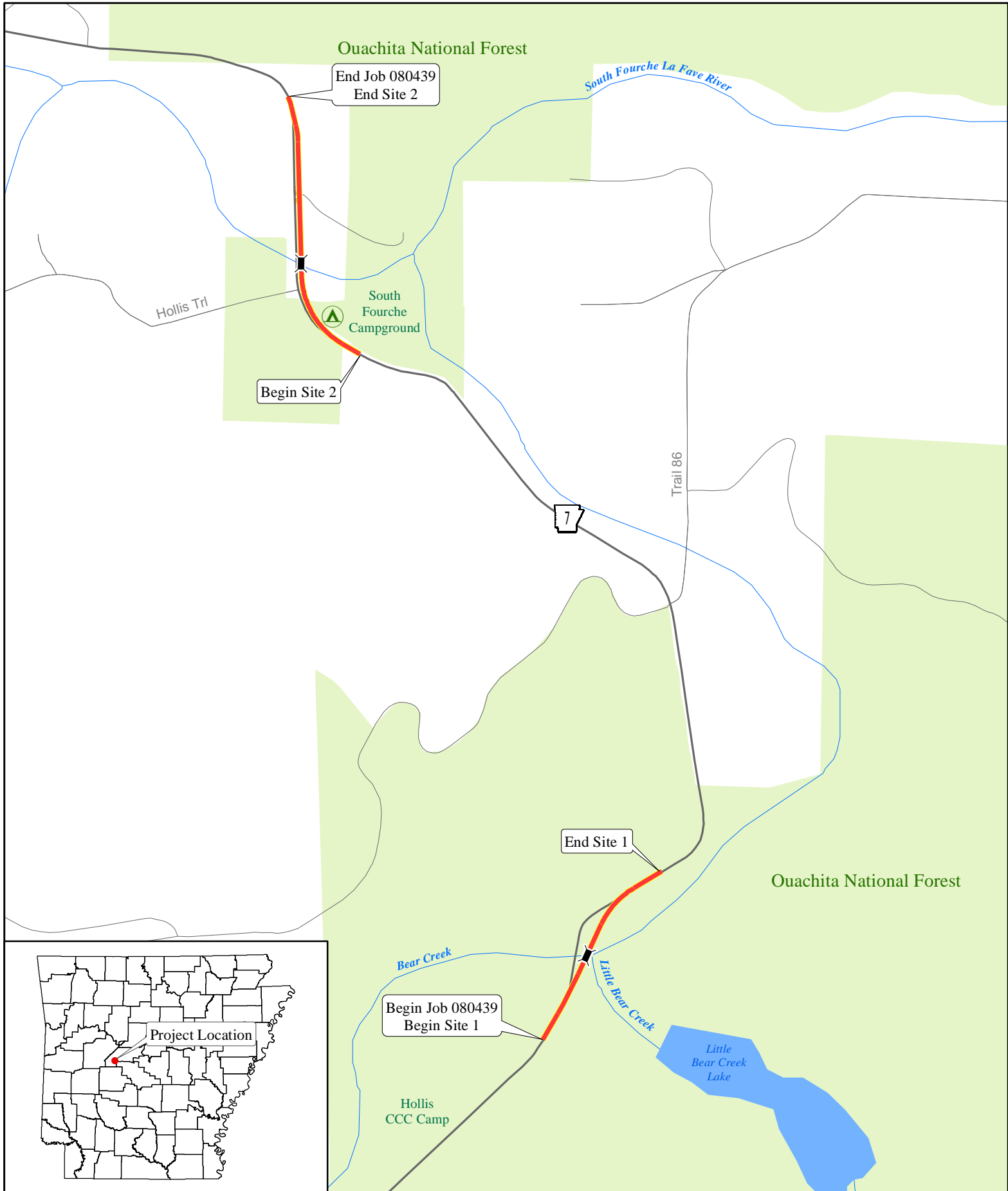


John Fleming  
Division Head  
Environmental Division

Enclosures

JF:SS:fc

- c: Program Management
- Right of Way
- Roadway Design
- Bridge
- District 8
- Master File



AHTD-Environmental GIS-Hopkins  
April 6, 2017

**Job 080439**  
**Bear Creek & So. Fourche La Fave River**  
**Strs. & Apprs. (Hwy. 7)**  
**Perry County**





THE DEPARTMENT OF ARKANSAS  
**HERITAGE**

Asa Hutchinson  
Governor

Stacy Hurst  
Director

July 28, 2016

Mr. John Fleming  
Division Head  
Environmental Division  
Arkansas State Highway and Transportation Department  
P.O. Box 2261  
Little Rock, AR 72203-2261

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Arkansas Arts Council

Arkansas Natural  
Heritage Commission

Arkansas State Archives

Delta Cultural Center

Historic Arkansas Museum

Mosaic Templars  
Cultural Center

Old State House Museum

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RE: Perry County – Hollis  
Section 106 Review – FHWA  
Report Entitled: *A Cultural Resources Survey of AHTD Job Number  
080439, Bear Creek & So. Fourche La Fave River Strs. & Apprs.  
Perry County, Arkansas*  
AHTD Job Number 080439  
AHPP Tracking Number 91742.08

Dear Mr. Fleming:

The staff of the Arkansas Historic Preservation Program has reviewed the above-referenced Phase I cultural resources report.

Based on the information presented in this report, we concur that site 3PE460 is not eligible for the National Register of Historic Places (NRHP) and requires no further work.

In addition we concur that sites 3PE414 and 3PE415 are eligible to the NRHP, but are located outside of the project area and no further work is recommended.

Finally, we concur that AHTD Bridge Number 01720 (PE0088) is listed on the NRHP and 01721 (PE0089) is eligible for the NRHP. We find that the impacts to these properties resulting from their demolition constitute an adverse effect. The execution of a Memorandum of Agreement (MOA) as per your letter of February 18, 2015 has mitigated the adverse effect resulting from the construction of this project.

Thank you for the opportunity to review this undertaking. Please refer to the AHPP Tracking Number listed above in all correspondence. If you have any questions, please call Bob Scoggin of my staff at 501-324-9270

Sincerely,

For Frances McSwain  
Deputy State Historic Preservation Officer

cc: Mr. Randall Looney, FHWA



ARKANSAS HISTORIC  
PRESERVATION PROGRAM



National Historic  
Preservation Act 1966-2016



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Ms. Kim Penrod, Caddo Nation  
Ms. Amber Hood, The Chickasaw Nation  
Dr. Ian Thompson, Choctaw Nation of Oklahoma  
Dr. Andrea Hunter, Osage Nation  
Mr. Everett Bandy, Quapaw Tribe of Oklahoma  
Ms. Kim Jumper, Shawnee Tribe of Oklahoma  
Dr. Ann Early, Arkansas Archeological Survey

**FARMLAND CONVERSION IMPACT RATING  
FOR CORRIDOR TYPE PROJECTS**

<b>PART I (To be completed by Federal Agency)</b> Job 080439		3. Date of Land Evaluation Request 4/6/17	4. Sheet 1 of 1
1. Name of Project Bear Creek & So. Fourche La Fave River Strs. & Apprs		5. Federal Agency Involved FHWA, USFS	
2. Type of Project Bridge replacement		6. County and State Perry AR	
<b>PART II (To be completed by NRCS)</b>		1. Date Request Received by NRCS	2. Person Completing Form
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form)		YES NO	4. Acres Irrigated   Average Farm Size
5. Major Crop(s)	6. Farmable Land in Government Jurisdiction Acres: %		7. Amount of Farmland As Defined in FPPA Acres: %
8. Name Of Land Evaluation System Used	9. Name of Local Site Assessment System	10. Date Land Evaluation Returned by NRCS	

<b>PART III (To be completed by Federal Agency)</b>	Alternative Corridor For Segment			
	Corridor A	Corridor B	Corridor C	Corridor D
A. Total Acres To Be Converted Directly				
B. Total Acres To Be Converted Indirectly, Or To Receive Services				
C. Total Acres In Corridor				

<b>PART IV (To be completed by NRCS) Land Evaluation Information</b>				
A. Total Acres Prime And Unique Farmland				
B. Total Acres Statewide And Local Important Farmland	2.1			
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted				
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value				

**PART V (To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)**

<b>PART VI (To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))</b>	Maximum Points	Corridor A	Corridor B	Corridor C	Corridor D
1. Area in Nonurban Use	15	15			
2. Perimeter in Nonurban Use	10	10			
3. Percent Of Corridor Being Farmed	20	0			
4. Protection Provided By State And Local Government	20	0			
5. Size of Present Farm Unit Compared To Average	10	0			
6. Creation Of Nonfarmable Farmland	25	0			
7. Availability Of Farm Support Services	5	5			
8. On-Farm Investments	20	0			
9. Effects Of Conversion On Farm Support Services	25	0			
10. Compatibility With Existing Agricultural Use	10	0			
<b>TOTAL CORRIDOR ASSESSMENT POINTS</b>	<b>160</b>	<b>30</b>			

<b>PART VII (To be completed by Federal Agency)</b>					
Relative Value Of Farmland (From Part V)	100	100			
Total Corridor Assessment (From Part VI above or a local site assessment)	160	30			
<b>TOTAL POINTS (Total of above 2 lines)</b>	<b>260</b>	<b>130</b>			

1. Corridor Selected: New Location Adjacent to existing	2. Total Acres of Farmlands to be Converted by Project: 2.1 acres of Statewide importance	3. Date Of Selection:	4. Was A Local Site Assessment Used?  YES <input type="checkbox"/> NO <input type="checkbox"/>
5. Reason For Selection:			



# South Fourche Campground

U.S. Forest Service  
Ouachita National Forest

EVALUATION AND DOCUMENTATION OF A  
*DE MINIMIS* FINDING TO SECTION 4(F) PROPERTY  
FOR PUBLIC PARKS, RECREATION LANDS, AND  
WILDLIFE AND WATERFOWL REFUGES

AHTD Job Number 080439

Bear Creek & So. Fourche La Fave River Strs. & Apprs.

Perry County

April 2017



U.S. Department of Transportation  
Federal Highway  
Administration

Arkansas State Highway &  
Transportation Department



## Section 4(f) *De Minimis* Evaluation

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### 1 What would the project accomplish?

The Arkansas State Highway and Transportation Department (AHTD), in conjunction with the Federal Highway Administration (FHWA), is proposing to replace two weight-restricted and Functionally Obsolete bridges on Highway 7 across the South Fourche La Fave River and Bear Creek in Perry County, Arkansas. The project will remove the safety hazards associated with narrow bridges and reduce the restrictions on heavy loads on this section of Highway 7.

### 2 What is Section 4(f)?

Section 4(f) is part of a law that was passed to protect public parks, recreation areas, wildlife/waterfowl refuges, and important historic sites from being harmfully affected by transportation projects.

### 3 What Section 4(f) properties are being impacted?

The South Fourche Campground, a Ouachita National Forest facility, is located on the east side of Highway 7, south of the South Fourche La Fave River bridge (Figure 1). The campground property is approximately 2.3 acres and offers overnight and day use recreational opportunities, including:

- Six primitive, ADA-accessible campsites
- River access for fishing and paddling
- Restroom facilities
- Picnicking

South Fourche Campground: Campsite & Picnic Pavilion



Figure 1

#### What is meant by Functionally Obsolete?

A bridge is considered 'functionally obsolete' when it does not meet current design standards (for criteria such as lane width), either because the volume of traffic carried by the bridge exceeds the level anticipated when the bridge was constructed and/or the relevant design standards have been revised. (Federal Highway Administration)

Both bridges being replaced are historic structures and also eligible for Section 4(f) protection. The Highway 7 bridge over Bear Creek is eligible for inclusion on the National Register of Historic Places (NRHP) while the bridge over the South Fourche La Fave River was listed on the NRHP in 2004. Impacts to these historic bridges are discussed in the “Programmatic Section 4(f) Evaluation for Federally-Aided Highway Projects That Necessitate the Use of Historic Bridges” available from the AHTD Environmental Division.

#### 4 Does Section 4(f) apply to the South Fourche Campground?

The South Fourche Campground is an important public recreational area within the Ouachita National Forest and qualifies for Section 4(f) protection.

Section 4(f) impacts can be recognized as “*de minimis*,” which means relatively minor, if they meet the conditions shown in Table 1. Properties with only *de minimis* impacts do not require a full Section 4(f) evaluation.

**Table 1**

Can we use a *de minimis* finding on this Section 4(f) property?

Did we specially design the project to protect the South Fourche Campground as much as possible? Did we use mitigation and enhancement where it was suitable?	√
Did the official(s) with authority over the park have a chance to consider this information and agree that the project will not greatly harm the things that make the park important?	√
Did the public have an opportunity to review and comment on the effects of the project on the park and the things that make it important to them?	√

#### 5 Can the South Fourche Campground be avoided?

The proposed project impacts the South Fourche Campground because the proposed new alignment is on the east side of existing Highway 7, where the campground is also located. The new bridge is being built on new alignment in order to maintain traffic on the existing bridge during construction.

The project was initially designed to avoid impacts to the South Fourche Campground by routing the new alignment on the west side of Highway 7, away from the campground. The immediate west side of Highway 7, south of the South Fourche La Fave River, consists of steep rock bluffs, as seen in Figure 2. Constructing new alignment on this side of Highway 7 would require extensive blasting that would affect the visual qualities of Highway 7, a Forest Service Scenic Byway, as well as views from the campground. There would also be temporary noise impacts to the South Fourche Campground from blasting and a substantial increase in project cost.

### South Approach, Highway 7 Bridge over South Fourche La Fave River



*Figure 2*

Upon reviewing the project at an on-site field inspection with Ouachita National Forest staff, it was determined that these impacts would be more adverse than the property impacts associated with constructing the new bridge on the east side of Highway 7.

## **6 How will the project impact the South Fourche Campground?**

Approximately 0.42 acre of permanent right of way and approximately 0.37 acre of temporary construction easement will be acquired from the South Fourche Campground. These land impacts can be seen on Figure 3. The temporary land conversion affects an area where camping and picnicking occur, but no recreation activities will be permanently impacted.

Impacts as a result of the highway construction will include the temporary closure of three camping sites and loss of several trees in the campground. Noise impacts are also expected throughout construction, but will be minor and temporary. Access to the South Fourche Campground, river access, restroom facilities, and remaining campsites will be maintained throughout construction. Recreational uses after construction of the highway will be unchanged from the present conditions.

The South Fourche Campground sign is within the existing Highway 7 easement and proposed construction limits and will be moved prior to construction.

### South Fourche Campground Property Impacts

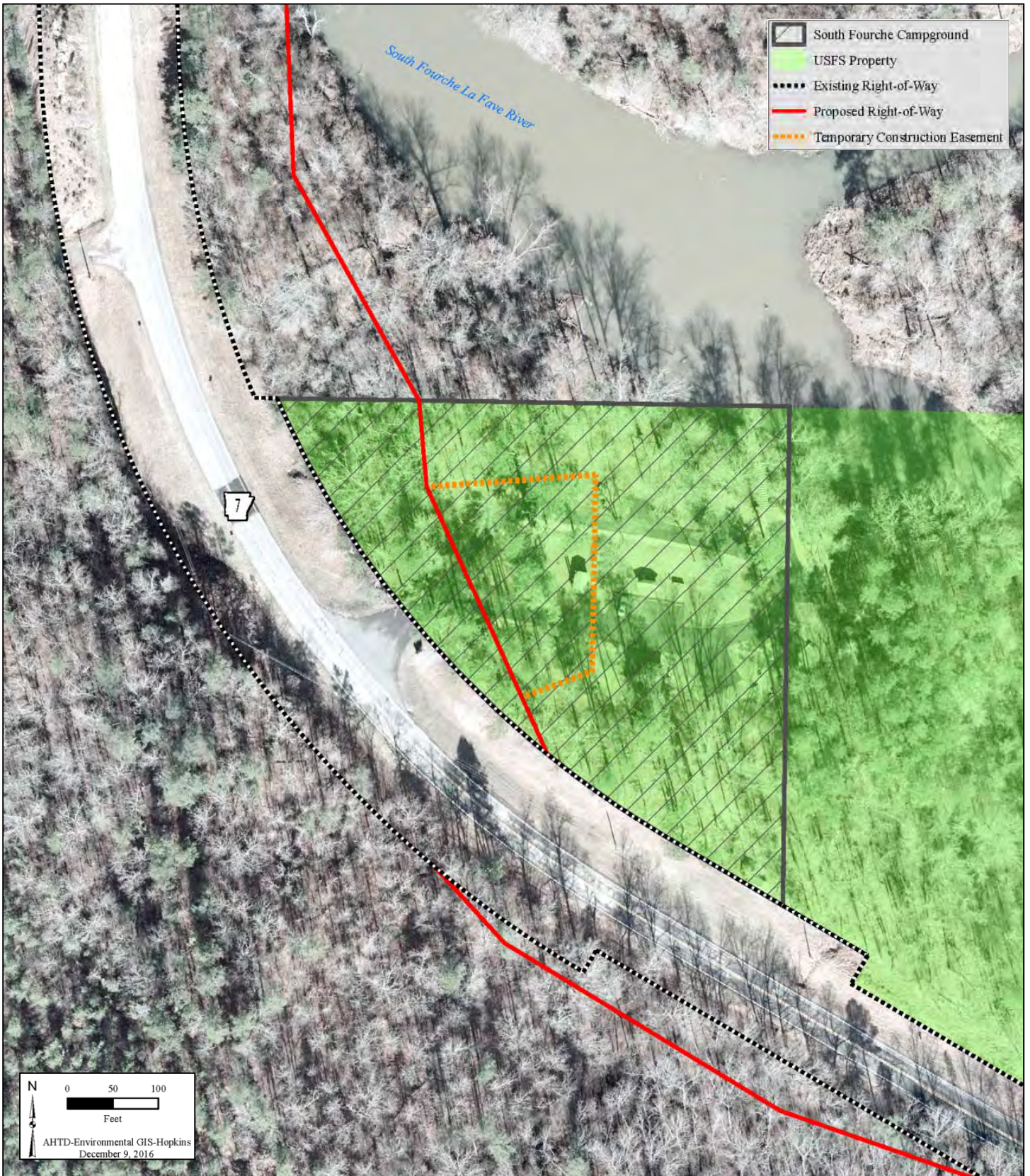


Figure 3

## **7 What measures were taken to reduce or mitigate these impacts?**

The following measures were included in the proposed project to reduce harm to the South Fourche Campground:

- Access to the remaining three campsites, restroom facilities, and river access will be maintained throughout construction, including paving activities within the campground.
- Paving in the campground will be completed in a continuous manner to minimize length of campsite closures.
- The timing of campsite closures and paving work in the campground will be coordinated with the Ouachita National Forest to avoid impacts during peak use periods.
- The South Fourche Campground sign will be replaced, in coordination with the Ouachita National Forest.
- No construction vehicles will be allowed in the South Fourche Campground outside of the proposed right of way. Construction vehicles will only be allowed in the temporary construction easement when they are required for paving work within the campground.
- Following construction, the AHTD Environmental Division, in coordination with the Ouachita National Forest, will ensure that replacement native trees are planted.

## **8 How was the public involved in the Section 4(f) process?**

A Public Notice in the local newspaper invited everyone to review and comment on the proposed project's effects on the South Fourche Campground. No comments were received.

The Ouachita National Forest has agreed that this project will not have a harmful effect on the South Fourche Campground. A copy of this agreement is included in Appendix A.

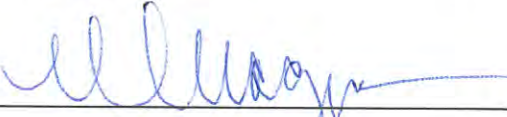
## **9 What is the decision?**

We believe that this evaluation determines that the proposed roadway improvement will not harm the protected features, qualities, or activities that make the park important for recreation under Section 4(f), thus qualifying for a *de minimis* finding on the South Fourche Campground.

## **APPENDIX A: SECTION 4(F) USFS CORRESPONDENCE**

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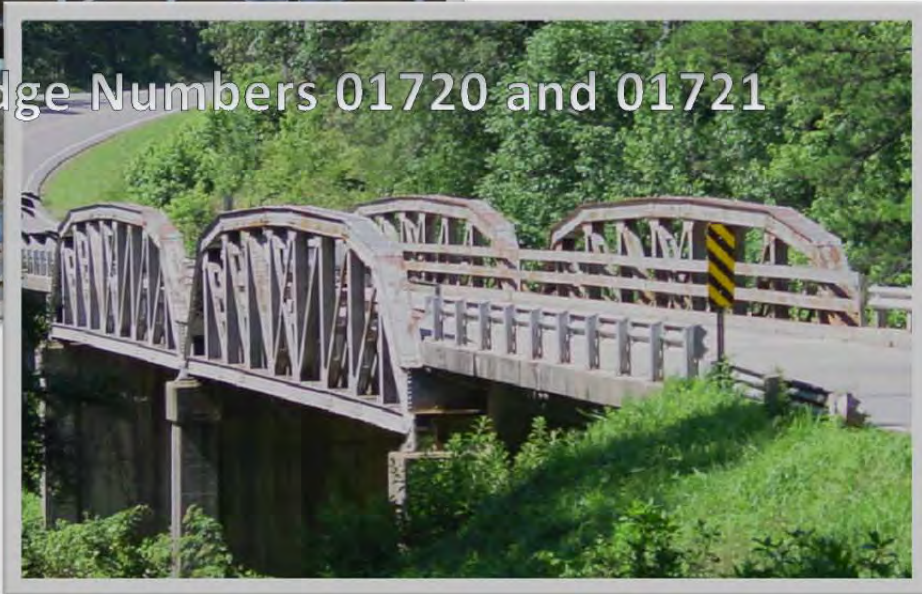
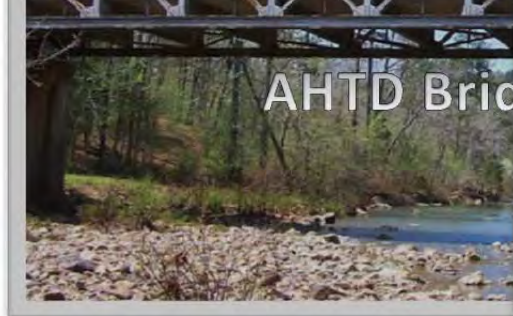
I concur with the assessment and the proposed minimization and mitigation of impacts to the South Fourche Campground as detailed in the enclosed Section 4(f) Evaluation and documentation of *De Minimis* Findings to Section 4(f) Property for Public Parks, Recreation Lands, and Wildlife and Waterfowl Refuges.

  
\_\_\_\_\_  
Signature

Forest Supervisor  
\_\_\_\_\_  
Title

5/5/17  
\_\_\_\_\_  
Date





## PROGRAMMATIC SECTION 4(F) EVALUATION FOR FEDERALLY-AIDED HIGHWAY PROJECTS THAT NECESSITATE THE USE OF HISTORIC BRIDGES

AHTD Job Number 080439

Bear Creek & So. Fourche La Fave River Strs. & Apprs.

Perry County

March 2017

Submitted Pursuant to 49 U.S.C. Section 303 and 23 U.S.C. Section 138 by the U.S. Department of Transportation Federal Highway Administration and the Arkansas State Highway and Transportation Department.

# Programmatic Section 4(f) Evaluation – Historic Bridges

## 1 What is Section 4(f)?

Section 4(f) is part of a law that was passed to protect public parks, recreation areas, wildlife/waterfowl refuges, and important historic sites from being harmfully affected by transportation projects.

## 2 What would the project accomplish?

We propose to construct new bridges on Highway 7 across the South Fourche La Fave River and Bear Creek in Perry County, Arkansas. The project will improve safety and meet transportation needs in central Arkansas. As part of the project, the Arkansas Highway and Transportation Department (AHTD) will replace two historic bridges.

AHTD Bridge Number 01720 (South Fourche La Fave River Bridge) is a steel, Parker pony truss bridge. It contains two main truss spans and seven approach spans, for a total length of 485 feet and a deck width of nearly 22 feet. The bridge has two 10-foot wide travel lanes without shoulders. The AHTD assigned the South Fourche La Fave River Bridge a sufficiency rating of 49.7 on the Bridge Inspection Report dated December 1, 2016. The report also listed the deck and superstructure in fair (5) condition and the substructure in good (7) condition and classified the South Fourche La Fave River Bridge as Functionally Obsolete.

AHTD Bridge Number 01721 (Bear Creek Bridge) is also a steel, Parker pony truss bridge. It contains two main truss spans and four approach spans for a total length of 344 feet and a deck width of nearly 22 feet. Two 10-foot travel lanes without shoulders carry the traffic. The AHTD assigned the Bear Creek Bridge a sufficiency rating of 44.9. The Bridge Inspection Report dated December 1, 2016, listed the deck and superstructure in fair (5) condition and the substructure in good (7) condition. The report also classified this bridge as Functionally Obsolete.

The replacement bridges will have concrete decks on continuous composite steel W-beam spans. The new bridge over the South Fourche La Fave River will be located approximately 50 feet upstream from the current bridge. It will have a length of nearly 499 feet and a roadway width of 34 feet. The design shows the new W-beam units will have two spans 77-feet long and one 94-foot long span. AHTD designed the new bridge roadway with 6-foot wide shoulders and two 11-foot wide paved travel lanes. The new bridge over Bear Creek will be the same steel

### What properties does Section 4(f) protect?

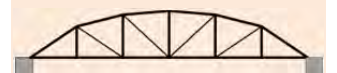
Section 4(f) properties include significant publicly owned public parks, recreation areas, and wildlife or waterfowl refuges, or any publicly or privately owned historic site listed or eligible for listing on the National Register of Historic Places [NRHP] with national, state, or local significance. AHTD can consider historic bridges and highways as historic sites.

### When does a bridge receive a classification of Functionally Obsolete?

“A bridge is considered ‘functionally obsolete’ when it does not meet current design standards (for criteria such as lane width), either because the volume of traffic carried by the bridge exceeds the level anticipated when the bridge was constructed and/or the relevant design standards have been revised” (Federal Highway Administration).

### What is a Parker truss?

Charles H. Parker patented the Parker truss in 1870. It is a variation of the Pratt truss design using less metal. The Parker truss shows a many-sided top chord with leaning end posts, and changing vertical lengths shortening from the center outward. It is also important to note the design of the diagonals.



W-beam design approximately 100 to 180 feet downstream from the current Bear Creek Bridge. The planned design shows a 420-foot long bridge with a 34-foot roadway width, consisting of two 11-foot wide travel lanes and 6-foot wide shoulders. The AHTD designed the new Bear Creek Bridge with five spans, including two 75-foot long spans and three 90-foot long spans.

### 3 What Section 4(f) historic properties are being impacted?

The project will affect two historic bridges. The historic bridges impacted are the South Fourche La Fave River Bridge (Figure 1) and the Bear Creek Bridge (Figure 2).

South Fourche La Fave River Bridge, AHTD Bridge Number 01720



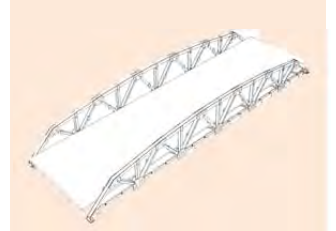
Figure 1

The two historic bridges, built in 1933 within the same job, show the same basic design. Each has two steel, Parker pony truss main spans on concrete piers, with reinforced concrete deck girder approaches. The approach spans originally included masonry arch handrails to “enhance the appearance of the bridges in the National Forest.”<sup>1</sup> The South Fourche La Fave River Bridge masonry handrails remain intact from the original design, while only the original southwest handrail is on the Bear Creek Bridge. AHTD replaced the other handrails with concrete posts and metal guardrails.

The South Fourche La Fave River Bridge was listed on the National Register of Historic Places (NRHP) on September 24, 2004, under Criteria A and C. As part of job 080439, the AHTD determined that the Bear Creek Bridge (Figure 2) was eligible to the NRHP in a

#### What is a pony truss bridge?

The top of a pony truss bridge does not connect above the roadway. The truss design is only viewed on either side of the road.



<sup>1</sup> “Plan of Proposed Bridges, Ola-Hot Springs, Perry County, Arkansas Forest Project No. E-A-7-C, Route 7, Sec. 8, Job No. 8168,” AHTD Division 8 Construction Job Files, Records Department, Microfilm for Job 8168; C.E. Swain, letter to C.S. Christian, July 31, 1931, AHTD Division 8 Construction Job Files, Records Department, Microfilm for Job 8168.

Request for Technical Assistance document dated December 9, 2014, under both Criterion A and C, as well. While the bridges have historic importance, the South Fourche La Fave River Bridge and the Bear Creek Bridge are not considered National Historic Landmarks, which is a separate status than the NRHP listing.

### Bear Creek Bridge, Bridge Number, AHTD Bridge Number 01721



Figure 2

NRHP Criterion A associations for these bridges include: 1) the multiple-property listing “Historic Bridges of Arkansas,” 2) the historic context of “Arkansas Highway and Transportation Department Era: 1923-1939,” and 3) connection to the New Deal programs created during the Great Depression. These programs relieved poverty and created jobs through public-works projects and emergency construction.

Under NRHP Criterion C, the South Fourche La Fave River Bridge and the Bear Creek Bridge display visually pleasing features and unusual engineering. Both bridges show the Parker pony truss design in the main spans. During 1933 and 1934, the Arkansas Highway Department only constructed four truss bridges out of approximately 115 bridges built; all four truss bridge plans had the Parker pony truss design.<sup>2</sup> Besides the truss design, the approach railings show craftsmanship in the stone arch pattern (Figure 3).

<sup>2</sup> State of Arkansas, “Eleventh Biennial Report of the Arkansas State Highway Commission,” *Arkansas State Highway and Transportation Department*, accessed January 3, 2017, [http://www.arkansashighways.com/historic\\_bridge/Beinnial%20Reports/11th%20Biennial%20Report%20\(1933-34\).pdf](http://www.arkansashighways.com/historic_bridge/Beinnial%20Reports/11th%20Biennial%20Report%20(1933-34).pdf).

#### What are the qualifications for a National Historic Landmark?

National Historic Landmarks are properties selected by the Secretary of the Interior for the national historic significance. The property should “possess exceptional value in honoring or showing the history of the United States,” according to the National Park Service (<https://www.nps.gov/nhl/learn/intro.htm>).

#### What are the National Register Criteria for evaluation?

Properties that possess the quality of importance in American history, architecture, archeology, engineering, and culture that retain aspects of integrity, and:

- A) that are associated with an event or significant contribution to the broad patterns of our history;
- B) that are associated with with important persons in our past;
- C) that embody the distinctive characteristics of a type, period, or method of construction, that represent the work of a master, that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- D) That have yielded, or may be likely to yield, information important in prehistory or history.

(National Register Bulletin 15: <https://www.nps.gov/NR/PUBLICATIONS/bulletins/nrb15/>)

Masonry railing on the approach of South Fourche La Fave River



Figure 3

Most of the features of integrity, used for evaluating a property under the NRHP criteria for eligibility, still show in both bridges. The bridges remain in their original location and have most of the original design and materials, except for the three replaced railings on the Bear Creek Bridge. The rural setting for the bridges has no apparent change. The rivet and pin connections in the truss spans show workmanship, along with the craftsmanship of the masonry railings. The materials, setting, and workmanship offer the feeling of early twentieth century bridge building in Arkansas. The significance of association and engineering, together with the remaining integrity, make the bridges eligible for the NRHP.

#### 4 Does this project qualify to use the Section 4(f) programmatic for historic bridges?

The Federal Highway Administration (FHWA) may apply the programmatic Section 4(f) evaluation to projects that meet the criteria shown in Table 1.

**Table 1**

##### Criteria To Use Programmatic Section 4(f) Evaluation For Federally-Aided Highway Projects That Necessitate The Use of Historic Bridges

The bridges are to be replaced or rehabilitated with Federal funds.	√
The project will require the use of historic bridge structures that are on or are eligible for listing on the NHRP.	√
The bridges are not National Historic Landmarks.	√
The FHWA Division Administrator determines that the facts of the project match those set forth in the FHWA Section 4(f) Policy Paper issued March 1, 2005.	√
Agreement has been reached among the FHWA, State Historic Preservation Officer (SHPO), and the Advisory Council on Historic Preservation (ACHP) through procedures pursuant to Section 106 of the National Historic Preservation Act (NHPA).	√

##### What is integrity for evaluating National Register eligibility?

Integrity is the ability of a property to show its significance. The seven elements for evaluating integrity are:

- 1) **Location,**
- 2) **Design,**
- 3) **Setting,**
- 4) **Materials,**
- 5) **Workmanship,**
- 6) **Feeling,** and
- 7) **Association:**

Both feeling and association depend on personal views and cannot support National Register eligibility without other elements of integrity.

(National Register Bulletin 15: <https://www.nps.gov/NR/PUBLICATIONS/bulletins/nrb15/>)

## 5 Could the project avoid demolishing the historic bridges?

To use the Programmatic Section 4(f) Evaluation That Necessitate the Use of Historic Bridges, FHWA must consider each of the following options: 1) No Action, 2) Build on New Location and Retain the Existing Structure, and 3) Rehabilitation of the Existing Structure. Circumstances, studies, and consultations on the project must support the alternative review and resulting decisions.

AHTD established a Historic Bridge Analysis Committee (HBAC) to evaluate workable options for the preservation of historically significant bridges through either retention or rehabilitation, or to justify their removal, if required. The HBAC evaluated the following options to determine if there was a feasible and prudent alternative to the proposed demolition of the historic bridges.

### No Action

This alternative involves no improvement to the existing facilities and continues to provide only routine maintenance to the bridges and Highway 7. The South Fourche La Fave River and the Bear Creek Bridges are both Functionally Obsolete. This alternative does not improve the existing roadway width of the bridges and does not correct the safety issues. With increasing traffic and no improvements to the bridge, safety will continue to decrease; therefore, this is not a prudent alternative.

### Rehabilitation of the Existing Structure

Rehabilitation would reconstruct the historic bridges to minimum design standards for two-lane traffic operations. AHTD would have to widen the bridges from a 20-foot clear roadway to a 34-foot clear roadway to meet the minimum design standards required for two-lane bridges. This option would alter the historical integrity of the bridges by changing the original design, which was a main factor in the NRHP eligibility. Therefore, this is not a prudent alternative.

### Location Alternatives and Retention of the Existing Structure

Two location alternatives were considered for this project:

*Location Alternative One* would construct new one-lane bridges over South Fourche La Fave River and Bear Creek and retain the existing bridges, with the new bridges and historic spans each carrying one lane of traffic. To meet minimum crash barrier requirements, substantial work would be required. This also applies to changing the historic bridge ends to meet safety requirements using either guardrails or concrete barriers. These changes to meet minimum design standards would alter

#### What is feasible and prudent?

Per 23 CFR 774.17, *feasible and prudent* avoidance alternatives guidelines are as follows:

(2) An alternative is not feasible if it is not sound engineering judgment.  
 (3) An alternative is not prudent if:

(i) It threatens the project to a degree that it is unreasonable to proceed with the project in light of its stated purpose and need;

(ii) It results in unacceptable safety or operating problems;

(iii) After reasonable mitigation, it still causes:

(A) Severe social, economic, or environmental impacts

(B) Severe disruption to established communities;

(C) Severe unequal impacts to minority or low income populations; or

(D) Severe impacts to environmental resources protected under other Federal statutes;

(iv) It results in additional construction, maintenance, or operating costs of an extraordinary amount;

(v) It causes other unique problems or unusual factors; or

(vi) It involves multiple factors in paragraphs (3)(i) through (3)(v) of this definition, that while minor separately, combined they may cause unique problems or impacts of extraordinary magnitude.

the historic integrity of the historic South Fourche La Fave River and Bear Creek bridges. Additional space would be required between the new bridges and historic spans for construction and inspection of the bridges. This would increase the project footprint and cost. The maintenance and inspection costs would be higher over the long term than the costs for new two-lane bridges in each location; therefore, this is not a prudent alternative.

*Location Alternative Two* would require the construction of new bridges, each for two-lane traffic operations following minimum design standards, with the historic spans retained by the AHTD or another entity for non-vehicular use. The Arkansas Highway Commission does not retain bridges that are not in use on active roadways due to the increased legal liability and cost. Therefore, AHTD marketed the bridges to find an entity willing to accept ownership (see Appendix A for marketing correspondence). No responsible party committed to maintain and preserve the bridges in place or in a new location. The AHTD would not be willing to retain the ownership of the historic bridges and no entity was willing to accept title for the bridges; therefore, *Location Alternative Two* is not prudent.

**Could an outside entity maintain the bridge or use it at another location?**

The Surface Transportation & Uniform Relocation Assistance Act of 1987, Historic Bridges Section 123 requires states to market a historic bridge before its replacement. When no other options are feasible or prudent, the AHTD markets historic bridges to federal agencies, county, and local governments, along with local historical societies. A responsible party must prove willingness to a) accept title for, b) preserve the historic integrity of, and c) assume financial responsibility for the maintenance on the bridge.

**6 How will the AHTD mitigate for the harm being done to historic properties?**

The FHWA and the SHPO have reached an agreement through the Section 106 process (36 CFR 800) of NHPA (16 U.S.C. 470) on measures to minimize harm. These measures have been included in this project. Through a Memorandum of Agreement (MOA), it was agreed that AHTD Bridge Numbers 01720 and 01721 would be documented to the Arkansas Historic Preservation Program’s (AHPP) architectural documentation standards and then demolished. A copy of the MOA, which includes all of the agreed upon mitigation stipulations, can be found in Appendix B.

**7 What are the findings of the alternatives analysis and this evaluation?**

Table 2 contains a summary of the analysis and decision-making information included in this evaluation.

**Table 2**

## Section 4(f) Analysis Summary

Alternative	Feasible	Prudent	Uses Section 4(f) Property	Harm to Section 4(f) Property
No Action	Yes	No	No	None
Rehabilitation	Yes	No	Yes	Adverse Effect
New Location One	Yes	No	Yes	Adverse Effect
New Location Two	Yes	No	Yes	Adverse Effect*

\* No entity was found willing to accept title for either bridge.

## 8 What are the recommendations moving forward on this project?

The AHTD recommends recording the bridges to AHPP architectural documentation standards and demolition as agreed to under the terms in the MOA (Appendix B).

The above documentation shows that the proposed project complies with all requirements of the Programmatic Section 4(f) Evaluation for Federal-aid highway projects that require the use of a historic bridge.



# Appendix A: Marketing Correspondence

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# ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

Scott E. Bennett  
Director  
Telephone (501) 569-2000  
Voice/TTY 711



P.O. Box 2261  
Little Rock, Arkansas 72203-2261  
Telefax (501) 569-2400  
[www.arkansashighways.com](http://www.arkansashighways.com)

November 7, 2014

«Name»  
«Title\_»  
«Agency»  
«Address\_1»  
«Address\_2»  
«Address\_3»  
«City»

Subject: Historic Bridges 01720 & 01721  
AHTD Job Number 080439  
Bear Creek & So. Fourche LaFave  
River Strs. & Apprs. (S)  
Perry County

Dear «Greeting»:

The Arkansas State Highway and Transportation Department is planning to replace Bridge Numbers 01720 (South Fourche LaFave River Bridge) and 01721 (Bear Creek Bridge) on Highway 7 in Perry County. Bridge 01720 was determined eligible to the National Register of Historic Places (NRHP) as part of the AHTD's 2005 Historic Bridge Inventory and Bridge 01721 is defined as potentially eligible pending the submission of a determination of eligibility in a Request for Technical Assistance to the State Historic Preservation Officer (SHPO).

The Moving Ahead For Progress in the 21<sup>st</sup> Century (MAP-21) Act, 23 USC § 144 (g) (5) states: "Any State that proposes to demolish a historic bridge for a replacement project ... shall first make the historic bridge available for donation to a State, locality, or responsible private entity." As part of the mitigation process, the AHTD is offering Bridge Numbers 01720 and 01721 for donation to any government or entity that demonstrates a willingness to accept title for, preserve the historic integrity of and assume the financial responsibility for the continued maintenance on the structures.

The AHTD will reimburse costs associated with preservation that could include modifications for recreational use, transportation to a new location or preparation of a new location. The cost reimbursement to be determined by the Federal Highway Administration will not exceed 100 % of the cost of demolition of the bridges, which will be based on the estimate of the AHTD.

If you are interested in acquiring these bridges, please respond with a letter of interest within 45 days of receipt of this letter. For further information contact Robert Scoggin at (501) 569-2077.

Sincerely,

If you are interested in acquiring these bridges, please respond with a letter of interest within 45 days of receipt of this letter. For further information, contact Robert Scoggin at (501) 569-2077.

Sincerely,

John Fleming  
Division Head  
Environmental Division

JF:DW:RS;jh

c: Assistant Chief Engineer for Planning  
Bridge Division Head  
District Eight Engineer  
FHWA

Historic Bridges 01720 & 01721  
AHTD Job Number 080439  
Page 3 of

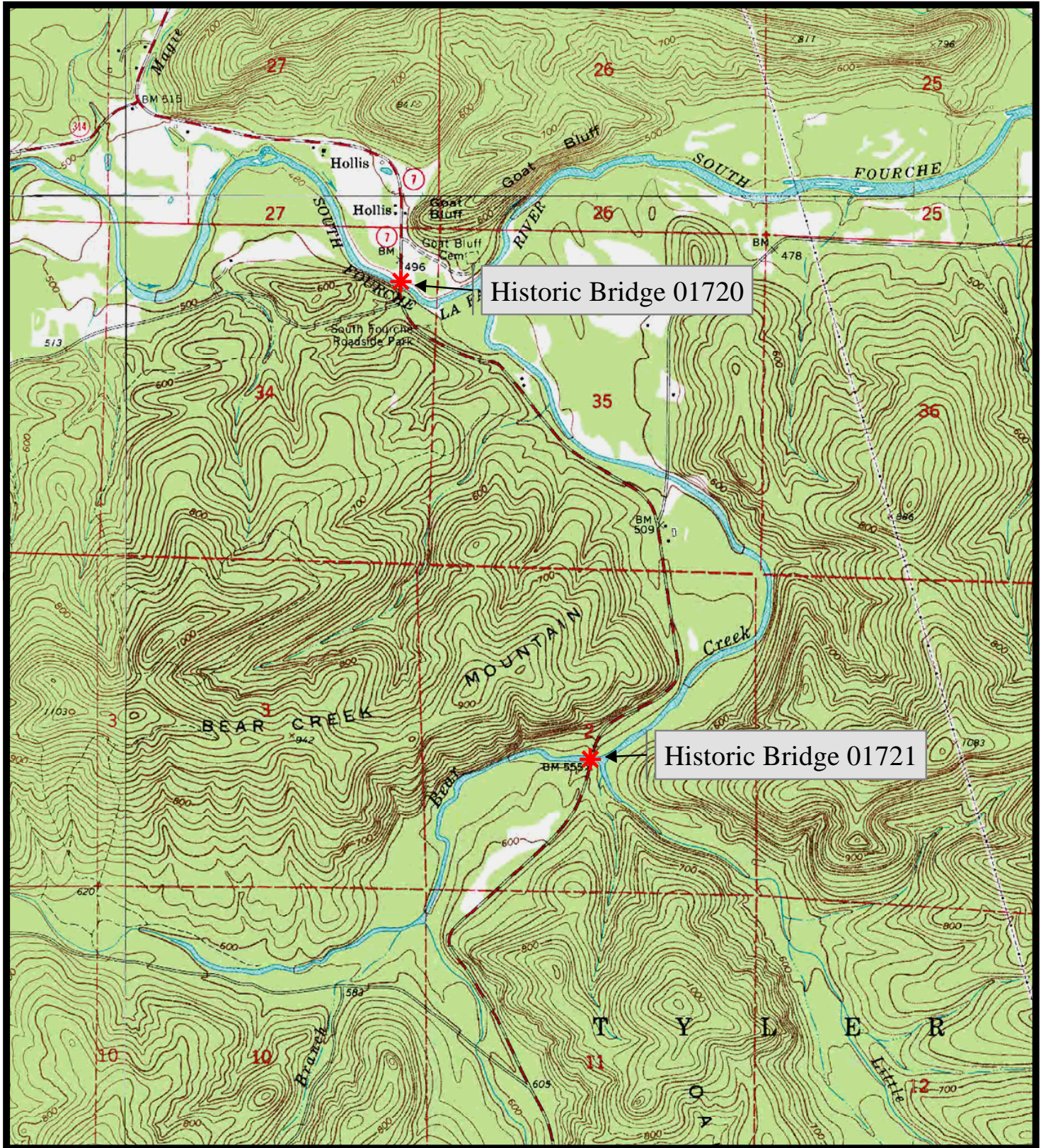


This bridge, AHTD Bridge Number 01720, is located on Highway 7 in Perry County over South Fourche LaFave River. The property is a steel Parker pony truss bridge with two 100-foot spans that are 20-feet wide. It was built by McEachin & McEachin of Little Rock, Arkansas in 1933. It is one of only ten Parker Pony truss spans in vehicular use across the state.

Historic Bridges 01720 &  
01721 AHTD Job Number  
08039 Page 4 of 5



This bridge, AHTD Bridge Number 01721, is located on Highway 7 in Perry County over Bear Creek. The property is a steel Parker pony truss bridge with two 90-foot spans that are 20-foot wide. It was built by McEachin & McEachin of Little Rock, Arkansas in 1932. It is one of only ten Parker Pony truss spans in vehicular use across the state.



0 1,250 2,500  
Feet

Nimrod SE 7.5 min. quad

RWS 10/6/14

Historic Bridge Nos. 01720 & 01721  
AHTD Job Number 080439  
Bear Creek & So. Fourche La Fave  
River Strs. & Apprs. (S)  
Perry County



Marketing Letter Recipients

Name	Title	Agency	Address #1	Address #2	Address #3	City
Colonel Courtney W. Paul	Commander and District Engineer	U.S. Army Corps of Engineers	Little Rock District		P.O. Box 867	Little Rock, AR 72203-0867
Mr. Mike Knoedl	Director	Arkansas Game and Fish Commission			2 Natural Resources Drive	Little Rock, AR 72205
Ms. Martha Miller	Director	Department of Arkansas Heritage	1500 Tower Building		323 Center Street	Little Rock, AR 72201
Mr. Richard Davies	Director	Department of Parks and Tourism			One Capitol Mall 4A-900	Little Rock, AR 72201
Mr. Timothy G. Nutt	President	Arkansas Historical Association	Department of History	Main 416	University of Arkansas	Fayetteville, AR 72701
Mr. Courtney Crough, III	President	Historic Preservation Alliance of Arkansas			P.O. Box 305	Little Rock, AR 72203
Honorable Baylor House	Perry County Judge				P.O. Box 358	Perryville, AR 72126
Mr. Buford Suffridge		Perry County Historical & Geneological Society			P.O. Box 156	Perryville, AR 72126
Ms. Eddy Hodge	Managing Editor	Perry County Petit Jean Country Headlight			P.O. Box 418	Perryville, AR 72126-0418

# Appendix B: Memorandum of Agreement

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MEMORANDUM OF AGREEMENT  
AMONG THE  
FEDERAL HIGHWAY ADMINISTRATION, THE  
ARKANSAS STATE HISTORIC PRESERVATION OFFICER AND THE  
ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT  
REGARDING  
AHTD JOB NUMBER 080439  
BEAR CREEK & SO. FOURCHE LAFAVE RIVER STRUCTURES &  
APPROACHES  
HIGHWAY 7, PERRY COUNTY, ARKANSAS  
AHTD BRIDGE NUMBERS 01721 AND 01720

WHEREAS, the Federal Highway Administration (FHWA) and the Arkansas State Highway and Transportation Department (AHTD) wish to construct a new bridge across the Bear Creek and the South Fourche LaFave River on Highway 7 in Perry County, Arkansas, to improve safety and the transportation needs in north Arkansas; and the old Bear Creek Bridge (AHTD Number 01721) and the old South Fourche LaFave River Bridge (AHTD Number 01720) (Historic Bridges) will be demolished for construction of new bridges at their locations; and

WHEREAS, the old Bear Creek Bridge (01721) is determined eligible for inclusion on the National Register of Historic Places (NRHP) and the South Fourche LaFave River Bridge (01720) is listed on the NRHP; and

WHEREAS, through the Programmatic Section 4(f) Evaluation process, the FHWA has determined that no feasible and prudent alternative to the demolition of the Historic Bridges exists; and

WHEREAS, the FHWA has marketed the Historic Bridges to federal agencies, the Perry County Judge, local governments, and the historic society in Perry County, Arkansas; and

WHEREAS, no entities were found willing to accept title for preservation of the Historic Bridges at their current locations or reuse at another location; and

WHEREAS, the FHWA has determined that this undertaking will have an adverse effect on a property eligible for listing in the NRHP, and a property on the NRHP, and in accordance with 36 Code of Federal Regulations (CFR) Part 800, regulations implementing Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. 470f), must address this effect; and

AHTD Job Number 080439  
Memorandum of Agreement  
Page 2 of 8

WHEREAS, the definitions set forth in 36 CFR Part 800 are applicable throughout this Memorandum of Agreement (MOA); and

NOW THEREFORE, the FHWA and the State Historic Preservation Officer (SHPO) agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the adverse effect of this undertaking on the historic property.

### STIPULATIONS

The FHWA, through the AHTD, will ensure that the following stipulations are carried out.

- I. MITIGATION OF ADVERSE EFFECT TO THE HISTORIC PROPERTIES:  
(Bear Creek and South Fourche LaFave River Bridges)
  1. The FWHA will produce architectural documentation for the Historic Bridges that meets the Secretary of the Interior's *Standards and Guidelines for Archeology and Historic Preservation* set forth in 48 CFR 44716. The *AHPP 2009 Survey Procedures Manual: Guidelines for Historic and Architectural Surveys in Arkansas* shall be followed in producing the architectural documentation. Documentation for the bridges will include completion of an Arkansas Architectural Resources Form, color digital photographs, and 3½-inch by 5-inch 35 mm black and white photographs with negatives for the bridge.
  2. The documentation will be curated at the Arkansas Historic Preservation Program (AHPP), the AHTD, the Arkansas History Commission, and the Torreyson Library at the University of Central Arkansas.
  3. The Historic Bridges will be laser scanned and a 3-dimensional digital model of the bridge will be created and housed in the Historic Bridge Program Section of the AHTD website.
  4. No construction will be undertaken on the Historic Bridges until all fieldwork portions of the required mitigation have been completed.
  5. The FHWA shall ensure that adequate time and funding are provided in order to carry out all aspects of the required mitigation.

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Memorandum of Agreement  
Page 3 of 8

## II. HUMAN REMAINS

Human remains are not expected to be discovered on this undertaking; however, if they are encountered during implementation of the project, all activity in the vicinity of the discovery shall cease. The treatment of human remains shall follow the guidelines developed for the *Arkansas Burial Law* (Act 753 of 1991, as amended) and the Advisory Council on Historic Preservation's *Policy Statement Regarding Treatment of Burial Sites, Human Remains, and Funerary Objects* published February 23, 2007.

## III. DURATION

This MOA will remain in effect for a period not to exceed ten years from the date of ratification, or until the proposed construction is complete. It may be extended by agreement of all the signatories.

## IV. PROFESSIONAL QUALIFICATIONS STANDARDS

The FHWA shall ensure that all archeological investigations and other historic preservation activities to this MOA are carried out by, or under the direct supervision of, a person or persons meeting the appropriate qualifications set forth in the Secretary of the Interior's professional qualification standards (48 CFR 44739).

## V. ARCHEOLOGICAL FIELDWORK AND REPORT STANDARDS

All archeological field work and report writing shall follow the Secretary of the Interior's *Standards and Guidelines for Archeology and Historic Preservation* (48 CFR 44716-39) and *A State Plan for the Conservation of Archeological Resources in Arkansas* (Davis and Early 2010).

## VI. POST-REVIEW DISCOVERY SITUATIONS

Pursuant to 36 CFR Part 800.13, if cultural material is discovered during implementation of the project, the FHWA shall ensure that all construction activities cease in the area of the discovery and the consulting parties are notified. The FHWA and the SHPO shall determine if the discovery is eligible for inclusion in the National Register of Historic Places. If so, the FHWA and the AHTD will develop a treatment plan for historic properties which shall be reviewed and approved by the SHPO. Disputes arising from such review shall be resolved in accordance with Stipulation VII.

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#### VII. DISPUTE RESOLUTION

Should the SHPO or any consulting party object within thirty (30) calendar days to any findings, proposed actions or determinations made pursuant to this MOA, the FHWA shall consult with the objecting party to resolve the objection. If the FHWA determines that the objection cannot be resolved, it shall request further comments from the Advisory Council on Historic Preservation (Council) pursuant to 36 CFR Part 800.7. Any Council comment provided in response to such a request shall be taken into account by the FHWA in accordance with 36 CFR 800.7 with reference only to the subject of the dispute; the FHWA responsibility to carry out all actions under this MOA that are not subject to dispute shall remain unchanged.

#### VIII. MONITORING

The consulting parties or one or more parties in cooperation may monitor the undertaking and stipulations carried out pursuant to this MOA.

#### IX. AMENDING THE MEMORANDUM OF AGREEMENT

Should any of the signatories to this MOA believe that the terms of this MOA are not being met or cannot be met, that party shall immediately notify the other signatories and request consultation to amend this MOA in accordance with 36 CFR Part 800. The process to amend this MOA shall be conducted in a manner similar to that leading to the execution of this MOA.

#### X. TERMINATING THE MEMORANDUM OF AGREEMENT

Any signatory to this MOA may terminate it by providing thirty (30) calendar days notice to the other parties provided that the parties shall consult during the period prior to termination to seek agreement on amendments or other actions that would avoid termination. In the event of termination, the FHWA shall comply with 36 CFR Part 800.4 through 800.6 with regard to the undertaking covered by this MOA.

#### XI. FAILURE TO CARRY OUT THE MEMORANDUM OF AGREEMENT

In the event the FHWA does not carry out the terms of the MOA, the FHWA shall comply with 36 CFR Part 800.4 through Part 800.6 with regard to the undertaking covered by this MOA.

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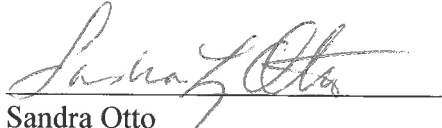
## XII. FULFILLMENT OF SECTION 106 RESPONSIBILITIES

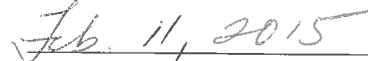
Execution and implementation of this MOA evidences that the FHWA has afforded the Advisory Council for Historic Preservation a reasonable opportunity to comment, pursuant to 36 CFR Part 800, on the proposed replacement of the Historic Bridges in Perry County, Arkansas and its effect on the historic properties, and the FHWA has taken into account the effect of the undertaking on the historic properties.

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Signatory

FEDERAL HIGHWAY ADMINISTRATION

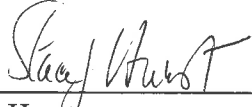
  
\_\_\_\_\_  
Sandra Otto  
Arkansas Division Administrator

  
\_\_\_\_\_  
Date

AHTD Job Number 080439  
Memorandum of Agreement  
Page 7 of 8

Signatory

ARKANSAS STATE HISTORIC PRESERVATION OFFICER



\_\_\_\_\_  
Stacy Hurst  
Arkansas State Historic Preservation Officer

2-12-15

\_\_\_\_\_  
Date

AHTD Job Number 080439  
Memorandum of Agreement  
Page 8 of 8

Signatory

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT



\_\_\_\_\_  
Scott E. Bennett  
Director of Highways and Transportation



\_\_\_\_\_  
Date





**From:** [Lewis, Lindsey](#)  
**To:** [Ewing, Anne \(Kayti\)](#)  
**Subject:** Re: 080439 USFWS Concurrence  
**Date:** Wednesday, April 12, 2017 8:36:08 AM

---

Kayti,

In the Biological Evaluation (BE) you provided an assessment for federally listed species in the affected area of the action which includes northern long-eared bat (*Myotis septentrionalis*), scaleshell mussel (*Leptodea leptodon*), and harperella (*Ptilimnium nodosum*). Your email further provided determinations related to these species for this action. The Service offers the following comments related to this action and your determinations.

As you stated, a bat survey was conducted on August 12th and 14th of 2015. Three northern long-eared bats were captured and tracked via radio transmitters for two days following capture and no roost trees were located. Due to suitable habitat being present within the project area for northern long-eared bats, a determination was made that the project is not likely to adversely affect the listed species. Furthermore, you stated that the Final 4(d) Rule and the Programmatic Biological Opinion (BO) applies to this project's activities that have the potential to affect northern long-eared bats. The Final 4(d) Rule exempts the incidental take of northern long-eared bats from take prohibitions in the Endangered Species Act.

The Service agrees with your assessment that the exemptions apply as long as the activities do not occur within 0.25 mile of a known hibernaculum or within 150 feet of a known occupied maternity roost from June 1 to July 31. No known hibernaculum or maternity roosts exist within the project limits; therefore, the project can proceed without restrictions. All offsite locations will require coordination with USFWS.

**The Service has reviewed your determination that the proposed action will not result in any prohibited incidental take for northern long-eared bat in accordance with the Final 4(d) Rule. This project may affect the Northern Long-eared Bat; however, there are no effects beyond those previously disclosed in the Service's programmatic biological opinion for the final 4(d) rule dated January 5, 2016. Any taking that may occur incidental to this project is not prohibited under the final 4(d) rule (50 CFR §17.40(o)). This project is consistent with the description of the proposed action in the programmatic biological opinion, and the 4(d) rule does not prohibit incidental take of the northern long-eared bat that may occur as a result of this project. Therefore, the programmatic biological opinion satisfies the "action agency" responsibilities under ESA section 7(a)(2) relative to the northern long-eared bat for this project.**

Please keep in mind that you must report any departures from the plans submitted; results of any surveys conducted; or any dead, injured, or sick northern long-eared bats that are found to this office. If this project is not completed within one year of this letter, you must update your determination and resubmit the required information.

Due to records indicating a known occurrence within the South Fourche La Fave River for the scaleshell mussel, a determination was made that the project is 'not likely to adversely affect' the listed mussel species. A mussel survey was conducted and no scaleshell mussels were located. **The Service concurs with this determination.**

A 'no effect' determination was made for other federally listed species in the Biological Evaluation. **No further comment from the Service related to these species is necessary.**

You stated that due to suitable habitat being present and known localities of the federally listed riverine plant, harperella, in the South Fourche La Fave River, a determination was made that the project is 'not likely to adversely affect' the listed plant species. Surveys for harperella were conducted, and it is present in the South Fourche La Fave River, downstream from the existing bridge. In a Summer 2016 survey, after the BE was written, Harperella was found in the South Fourche La Fave River. The AHTD has committed to including a Restraining Conditions Special Provision that will not allow construction activities or traffic in the demarcated area. The area will be flagged on the ground and is also included in the South Fourche La Fave Bridge Plans, which is attached. It is AHTD's determination that the project and mitigation measures outlined above warrant a determination of "not likely to adversely affect" for Harperella. **The Service concurs with this determination.**

Please let me know if you have any questions or require additional assistance.

Thanks,

Lindsey Lewis  
Biologist

US Fish & Wildlife Service  
Arkansas Field Office  
110 South Amity Rd., Suite 300  
Conway, Arkansas 72032

(501) 513-4489 - voice  
(501) 513-4480 - fax  
[Lindsey.Lewis@fws.gov](mailto:Lindsey.Lewis@fws.gov)  
<http://www.fws.gov/arkansas-es/>

*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.*

On Tue, Apr 11, 2017 at 4:59 PM, Ewing, Anne (Kayti) <[Anne.Ewing@ahtd.ar.gov](mailto:Anne.Ewing@ahtd.ar.gov)> wrote:

Lindsey,

The AHTD is proposing to replace two bridges, one over Bear Creek and the other over South Fourche La Fave, in the Ouachita National Forest in Perry County. The existing 304' x 21.6' bridge over Bear Creek will be replaced with a 422.56' x 37.17' continuous W-beam unit that varies from 100' to 180' downstream. The current roadway width on the Bear Creek Bridge is 20 feet, and proposed bridge roadway width will be 34 feet, with two 11-foot travel lanes and 6-foot shoulders on either side. The existing 485' x 21.7' bridge over South Fourche La Fave River will be replaced with a 498.55' x 37.17' continuous W-beam unit that varies from 50' downstream. The current roadway width on the South

Fourche La Fave River Bridge is 20 feet, and the proposed bridge roadway width will be 34 feet, with two 11-foot travel lanes and 6-foot shoulders on either side.

A biological evaluation was submitted to the USFS for review, which was been approved in February 2016. The project lies within the range of the federally listed northern long-eared bat, see accompanying Biological Evaluation for more details. Perry County lies within the consultation area of the federally listed northern long-eared bat (*Myotis septentrionalis*). A bat survey was conducted on August 12<sup>th</sup> and 14<sup>th</sup> of 2015. Three northern long-eared bats were captured and tracked via radio transmitters for two days following capture. No roost trees were located. Due to suitable habitat being present within the project area for northern long-eared bats, a determination was made that the project is not likely to adversely affect the listed species. The Final 4(d) Rule and the Programmatic Biological Opinion (BO) applies to this project's activities that have the potential to affect northern long-eared bats. The Final 4(d) Rule exempts the incidental take of northern long-eared bats from take prohibitions in the Endangered Species Act. The exemptions apply as long as the activities do not occur within 0.25 mile of a known hibernaculum or within 150 feet of a known occupied maternity roost from June 1 to July 31. No known hibernaculum or maternity roosts exist within the project limits; therefore, the project can proceed without restrictions. All offsite locations will require coordination with USFWS.

Due to records indicating a known occurrence within the South Fourche La Fave River for the scaleshell mussel, a determination was made that the project is 'not likely to adversely affect' the listed mussel species. A mussel survey was conducted and no scaleshell mussels were located. A 'no effect' determination was made for other federally listed species, please refer to Biological Evaluation for complete details, which is attached. I have also included the bat survey that was conducted. We are requesting concurrence from US Fish and Wildlife regarding the determinations made to the federally listed species within the project area.

Due to suitable habitat being present and known localities of the federally listed riverine plant, harperella, in the South Fourche La Fave River, a determination was made that the project is 'not likely to adversely affect' the listed plant species. Surveys for harperella were conducted, and it is present in the South Fourche La Fave River, downstream from the existing bridge. In a Summer 2016 survey, after the BE was written, Harperella was found in the South Fourche La Fave River. The AHTD has committed to including a Restraining Conditions Special Provision that will not allow construction activities or traffic in the demarcated area. The area will be flagged on the ground and is also included in the South Fourche La Fave Bridge Plans, which is attached. It is our determination that the project and mitigation measures outlined above is not likely to adversely affect Harperella.

Thanks,  
Kayti Ewing

## Northern Long-Eared Bat 4(d) Rule Streamlined Consultation Form

Federal agencies should use this form for the optional streamlined consultation framework for the northern long-eared bat (NLEB). This framework allows federal agencies to rely upon the U.S. Fish and Wildlife Service's (USFWS) January 5, 2016, intra-Service Programmatic Biological Opinion (BO) on the final 4(d) rule for the NLEB for section 7(a)(2) compliance by: (1) notifying the USFWS that an action agency will use the streamlined framework; (2) describing the project with sufficient detail to support the required determination; and (3) enabling the USFWS to track effects and determine if reinitiation of consultation is required per 50 CFR 402.16.

This form is not necessary if an agency determines that a proposed action will have no effect to the NLEB or if the USFWS has concurred in writing with an agency's determination that a proposed action may affect, but is not likely to adversely affect the NLEB (i.e., the standard informal consultation process). Actions that may cause prohibited incidental take require separate formal consultation. Providing this information does not address section 7(a)(2) compliance for any other listed species.

<b>Information to Determine 4(d) Rule Compliance:</b>	<b>YES</b>	<b>NO</b>
1. Does the project occur wholly outside of the WNS Zone <sup>1</sup> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Have you contacted the appropriate agency <sup>2</sup> to determine if your project is near known hibernacula or maternity roost trees?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Could the project disturb hibernating NLEBs in a known hibernaculum?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Could the project alter the entrance or interior environment of a known hibernaculum?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Does the project remove any trees within 0.25 miles of a known hibernaculum at any time of year?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Would the project cut or destroy known occupied maternity roost trees, or any other trees within a 150-foot radius from the maternity roost tree from June 1 through July 31.	<input type="checkbox"/>	<input checked="" type="checkbox"/>

You are eligible to use this form if you have answered yes to question #1 **or** yes to question #2 **and** no to questions 3, 4, 5 and 6. The remainder of the form will be used by the USFWS to track our assumptions in the BO.

**Agency and Applicant**<sup>3</sup> (Name, Email, Phone No.): Kayti Ewing, [kayti.ewing@ahtd.ar.gov](mailto:kayti.ewing@ahtd.ar.gov), 501-569-2083

**Project Name:** 080439 Bear Creek & South Fourche La Fave River Strs. & Apprs.

**Project Location** (include coordinates if known): Highway 7, Perry County

**Basic Project Description** (provide narrative below or attach additional information): The AHTD is proposing to replace two bridges along Highway 7, in Perry County.

<b>General Project Information</b>	<b>YES</b>	<b>NO</b>

<sup>1</sup> <http://www.fws.gov/midwest/endangered/mammals/nleb/pdf/WNSZone.pdf>

<sup>2</sup> See <http://www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html>

<sup>3</sup> If applicable - only needed for federal actions with applicants (e.g., for a permit, etc.) who are party to the consultation.

Does the project occur within 0.25 miles of a known hibernaculum?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Does the project occur within 150 feet of a known maternity roost tree?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Does the project include forest conversion <sup>4</sup> ? (if yes, report acreage below)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Estimated total acres of forest conversion	≈ 8.4 acres	
If known, estimated acres <sup>5</sup> of forest conversion from April 1 to October 31	≈ 8.4 acres	
If known, estimated acres of forest conversion from June 1 to July 31 <sup>6</sup>	≈ 8.4 acres	
Does the project include timber harvest? (if yes, report acreage below)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Estimated total acres of timber harvest		
If known, estimated acres of timber harvest from April 1 to October 31		
If known, estimated acres of timber harvest from June 1 to July 31		
Does the project include prescribed fire? (if yes, report acreage below)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Estimated total acres of prescribed fire		
If known, estimated acres of prescribed fire from April 1 to October 31		
If known, estimated acres of prescribed fire from June 1 to July 31		
Does the project install new wind turbines? (if yes, report capacity in MW below)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Estimated wind capacity (MW)		

Agency Determination:

By signing this form, the action agency determines that this project may affect the NLEB, but that any resulting incidental take of the NLEB is not prohibited by the final 4(d) rule.

If the USFWS does not respond within 30 days from submittal of this form, the action agency may presume that its determination is informed by the best available information and that its project responsibilities under 7(a)(2) with respect to the NLEB are fulfilled through the USFWS January 5, 2016, Programmatic BO. The action agency will update this determination annually for multi-year activities.

The action agency understands that the USFWS presumes that all activities are implemented as described herein. The action agency will promptly report any departures from the described activities to the appropriate USFWS Field Office. The action agency will provide the appropriate USFWS Field Office with the results of any surveys conducted for the NLEB. Involved parties will promptly notify the appropriate USFWS Field Office upon finding a dead, injured, or sick NLEB.

Signature: Kayti Ewing

Date Submitted: 4/11/2017

<sup>4</sup> Any activity that temporarily or permanently removes suitable forested habitat, including, but not limited to, tree removal from development, energy production and transmission, mining, agriculture, etc. (see page 48 of the BO).

<sup>5</sup> If the project removes less than 10 trees and the acreage is unknown, report the acreage as less than 0.1 acre.

<sup>6</sup> If the activity includes tree clearing in June and July, also include those acreage in April to October.

**BIOLOGICAL EVALUATION**

for

**Activities Related to**

**AHTD Job Number 080439  
Bear Creek and South Fourche La Fave River  
Strs. and Apprs. (Hwy. 7)**

**Ouachita National Forest  
Jessieville-Winona-Fourche Ranger District  
Perry County, Arkansas**

by

**Kayti Ewing  
Environmental Analyst  
Arkansas Highway and Transportation Department  
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January 2016

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## **PROJECT DESCRIPTION AND LOCATION**

The Arkansas State Highway and Transportation Department (AHTD) is proposing to replace two bridges on Highway 7; one crossing Bear Creek (Site 1, Bridge No. 01721) and the other crossing the South Fourche La Fave River (Site 2, Bridge No. 01720), both in Perry County (Figure 1). The project area includes Township 2 North, Range 20 West, Section 2 (Site 1) and Township 3 North, Range 20 West, Section 34 (Site 2). The project area lies in the Fourche La Fave Watershed (8-digit HUC 11110206) within the Lower Arkansas-Fourche La Fave Basin (6-digit HUC 111102).

Proposed improvements at Bear Creek consist of replacing the existing 304' x 22' bridge with a 420' x 34' continuous W-beam unit; the distance of the new bridge in relation to the existing one varies from approximately 60 to 160 feet downstream. At the Fourche La Fave River crossing, proposed improvements include replacing the existing 485' x 22' bridge with a 497.6' x 34' continuous W-beam unit, approximately 50 feet downstream. Currently, both bridges have 10-foot travel lanes and no shoulders. Additional proposed improvements include widening the travel lanes to 11' and adding 6-foot shoulders to either side.

A work road will be required for both bridges. Maintenance of traffic will utilize the existing bridges during construction, and as the new bridges are open to traffic, the existing structures and approaches will be demolished.

## **PURPOSE AND NEED FOR THE PROPOSED ACTION**

The purpose of the proposed project is to replace two functionally obsolete bridges along Highway 7, over Bear Creek and the South Fourche La Fave River. The Bear Creek Bridge is classified as functionally obsolete due to floorbeam deterioration, and this bridge is load posted; i.e., it has vehicle weight restrictions. The South Fourche La Fave River Bridge is classified as functionally obsolete due to truss floorbeam deterioration and delaminated concrete. In addition, both of these bridges have narrow roadway widths.

The purpose of this project is to replace the two Highway 7 bridges over Bear Creek and South Fourche La Fave River, removing the current weight restrictions and structural deficiencies that would otherwise result in escalating maintenance costs and possible closure of Highway 7.

## **ALTERNATIVES CONSIDERED**

The South Fourche La Fave River Bridge is to be replaced just east of the existing alignment using the existing structure for maintenance of traffic. Another alternative looked at going to the west side of the existing alignment. That alternative was quickly withdrawn since blasting would have been required due to the substantial elevation difference on that side, and the amount of fill and excavation work would have been tremendous.

There are two alternatives for the crossing over Bear Creek, Site 1. Alternative 1, the original design, would shift the alignment of Highway 7 to the west side of existing roadway. Alternative 2 would shift the alignment of Highway 7 to the east side of existing roadway and involve the



relocation of approximately 300' of intermittent stream, in order to avoid the historical road segment.

Section 4(f) of the Department of Transportation Act of 1966 applies to projects funded or approved by a U.S. DOT agency that propose to impact public lands and historical sites. Prior to approval of projects potentially impacting Section 4(f) properties, the Federal Highway Administration (FHWA) must determine if adverse impacts will occur to the property, and if a feasible alternative exists to completely avoid impacts. As defined in Section 4(f), an alternative is deemed feasible if it can be constructed as a matter of sound engineering. If a feasible alternative does exist, then it must be selected. Therefore, Alternative 2, the Bear Creek Bridge avoidance alternative was selected because it avoids all impacts to the historic road segment.

## **PURPOSE AND NEED FOR THE BIOLOGICAL EVALUATION**

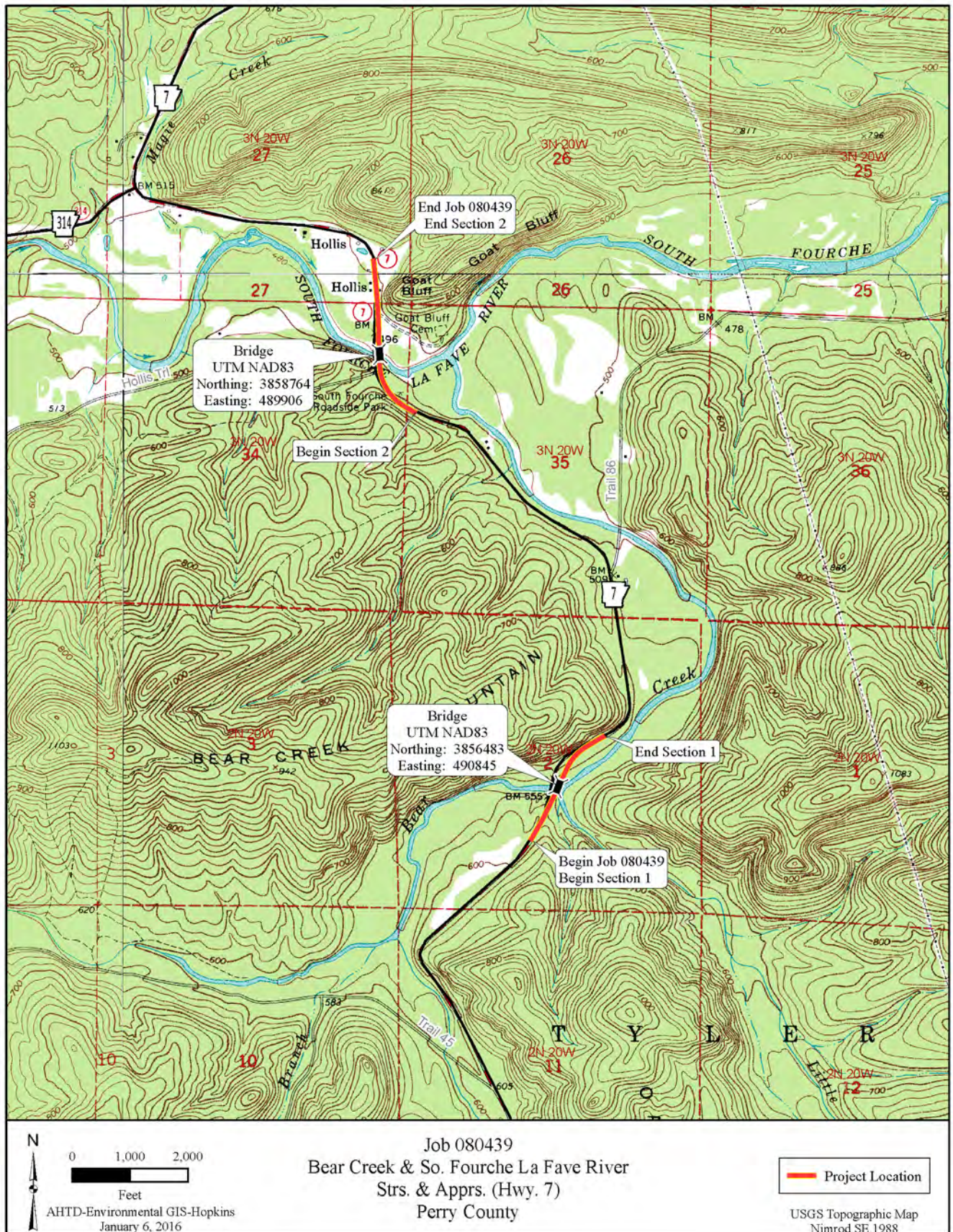
This Biological Evaluation (BE) documents the potential effects of the proposed highway construction activities, including utility relocation and timber harvesting, on both known and potentially occurring populations and habitat of the ONF Proposed, Endangered, Threatened, and Sensitive species (PETS) (USDI FWS 1999). This BE was conducted in accordance with methods given in Forest Service Manual 2672.43 (USDA FS 2005e).

As part of the National Environmental Policy Act decision-making process, the BE provides a review of AHTD activities in sufficient detail to determine the potential affects of the proposed action on the listed PETS species. Objectives of the BE are as follows:

- to ensure that AHTD actions do not contribute to loss of viability of any native or desired non-native plant or animal species or contribute to trends toward Federal listing of any species.
- to comply with all requirements of the Endangered Species Act, that actions of federal agencies not put at risk or adversely modify critical habitat of federally listed species.
- to provide standardized procedures for evaluation of PETS species to ensure they receive full consideration in the decision-making process, so that no species is placed in jeopardy as a result of inadequate management actions.
- to adhere to the requirements of the Forest Service Manual 2672.43(USDA FS 2005e), which provides direction for the inventory of PETS species in preparation of site-specific BEs.
- to address any potential impacts from management activities and incorporate conservation measures related to known PETS habitat or potential habitat.

Only those PETS species known to occur or have suitable habitat in the action area will be considered in this BE.

FIGURE 1. PROJECT LOCATION MAP



## PROPOSED MANAGEMENT ACTIONS

Proposed management actions include the use of Best Management Practices (BMPs) outlined in the National Pollution Discharge Elimination System (NPDES) and Section 404, Clean Water Act permits. These BMPs ensure that construction related activities associated with the project will not have detrimental effects on the water quality within the watershed.

## INVENTORY HISTORY

This BE is based on Arkansas Natural Heritage Commission 2010 records database, Information for Planning and Conservation (IPaC) system, ONF PETS checklist (2014) from the Jessieville-Winona-Fourche Ranger District, NatureServe Explorer Data (2015), and literature as cited for the various listed species known to occur on the ONF. Biological surveys for PETS species and their habitats for the proposed project were conducted on 24 June and 30 December of 2014 by AHTD Environmental personnel, Kayti Ewing, Josh Seagraves, Phillip Moore and Ben Thesing and USFS botanist, Susan Hooks,. The results of the plant survey are included in **Appendix B** and mussel survey results can be found in **Appendix C**. Other pertinent literature and information concerning PETS populations and habitats are utilized as cited.

## SPECIES CONSIDERED AND SPECIES EVALUATED

All PETS species will be evaluated and/or inventoried according to Forest Service Manual 2672.43 (USDA FS 2005c). All inventory and analysis for PETS species is based on “best available science.” **Appendix A** lists the ONF PETS species and indicates whether or not each is known to occur within the action area. The status of each species within the Jessieville-Winona-Fourche Ranger District and within the action area is based on a literature review of known surveys and information. As expressed for each species listed in **Appendix A**, additional surveys are not needed at this time to provide more definitive information to improve the determination of effects on the evaluated PETS species.

## EVALUATED SPECIES SURVEY INFORMATION

Based on the Arkansas Natural Heritage Commission 2010 records database, Information for Planning and Conservation (IPaC) system, NatureServe Explorer Data (2015), AHTD and ONF USFS personnel field surveys, and other pertinent information as cited, nineteen PETS species are known to occur or may potentially occur within the action area. Of these nineteen species, only three are federally listed: Harperella (*Ptilimnium nodosum*) and scaleshell mussel (*Leptodea leptodon*) as endangered and northern long-ear bat (*Myotis septentrionalis*) as threatened. The other sixteen species are considered sensitive by the USFS, and include one butterfly, one bird, eight plant species, five mussel species and one fish species (see **Appendix A**). Only these twenty-three species will be evaluated in this BE for potential impacts from the proposed actions.

## ENVIRONMENTAL BASELINE AND EFFECTS OF PROPOSED MANAGEMENT ACTIONS

Each specific activity that is being considered will be evaluated to determine potential effects to the nineteen PETS species of concern in this BE. The specific activities were listed in the “PROJECT DESCRIPTION AND LOCATION” section above. The most likely *general* effects from the specific activities are as follows:

***Highway Construction Activities:***

- Would cause temporary soil disturbance from heavy equipment operation
- Could temporarily increase sedimentation by exposing soils susceptible to erosion before the action area could be revegetated
- Could impact or crush individual plants and animals on the ground directly by heavy equipment operation
- Would create small patches of early successional habitat through the conversion of forested tracts to highway rights-of-way
- Would relocate approximately 1000’ of a small intermittent tributary to the South Fourche La Fave River and 600’ of an intermittent tributary to Bear Creek

These activities can be grouped or simplified into the five following impacts:

- **Soil disturbance impacts**
- **Sedimentation impacts**
- **Heavy equipment impacts**
- **Creation of early successional habitat impacts**
- **Intermittent stream relocation-habitat displacement**

These five impacts will be evaluated below for the three federally listed and nineteen PETS species that occur or may occur within the action area.

**Harperella (*Ptilimnium nodosum*) - Endangered**

Harperella is a federally listed endangered plant species. Populations are scattered across Alabama, Arkansas, Georgia, Maryland, North Carolina, South Carolina and West Virginia. Half of all known populations have been destroyed (Warriner and Witsell 2002). In Arkansas, Harperella is found in Montgomery, Garland, Perry, Polk, Scott and Yell counties (Hardcastle and Williams 2001, Witsell and Baker 2011). Harperella typically occurs in two habitat types: rocky or gravel shoals and margins of clear, swift-flowing sections; and edges of intermittent pineland ponds in the coastal plain. Population declines have been attributed to the plants dependence on a narrow range of hydrologic conditions making the species especially vulnerable to habitat degradation (USFWS 1990).

**Direct Effects**

Vascular plant surveys conducted within the project area did not identify harperella, but there are known populations, as recent as 2010, from the South Fourche La Fave River approximately 0.12 mile downstream of the Highway 7 bridge (Witsell and Baker 2011). Portions of Bear Creek have been identified as suitable habitat for harperella as well, but no populations have been found as of 2014.

**Indirect Effects**

Under the proposed activities, temporary soil disturbance and sedimentation could lead to increased turbidity and decreased water quality, which, in turn, could reduce growth rates of the species by 40% (USFWS 1990).

### **Cumulative Effects**

Under the Endangered Species Act (ESA), cumulative effects are defined as those effects of future State or private activities—not involving federal activities—that are reasonably certain to occur within the action area. [50 CFR §402.02] Current and planned Forest Service activities could have additional adverse impacts on this species; however, these cumulative effects would be minimal due to the fact that this species is protected under the Endangered Species Act (ESA) and the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Highway construction activities occurring within the ONF are reviewed to ensure compatibility with the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Further development within the area will likely be minimized since the right of way is bounded by National Forest System lands under the jurisdiction of the Ouachita National Forest. As a result, no cumulative effects are expected to occur.

**Determination of Effects:** *The proposed highway construction activities are “not likely to adversely affect” harperella. Vascular plant surveys conducted within the project area did not identify the species, but there are known locations of harperella in the South Fourche La Fave River in the project area. An increase in sedimentation from bridge construction could reduce growth rates by 40% (USFWS 1990), since harperella is relatively sensitive to increased turbidity and decreased water quality.*

### **Scaleshell Mussel (*Leptodea leptodon*) – Endangered**

This species is restricted to 14 streams in the Interior Highland divisions of Missouri, Arkansas and Oklahoma. In Arkansas, scaleshell mussel has a disjunct distribution with occurrences in the northern part of state—the White, Strawberry, Spring, Mulberry, and Myatt Rivers—and in southwestern Arkansas in the South Fork Fourche La Fave, Saline, Cossatot and Ouachita Rivers. Scaleshell mussel is found in 8 counties, including Perry County. This species occurs in riffles of moderate to high gradient, stable stretches of creeks and large rivers with fairly good water quality. It prefers strong currents and substrates of mud, sand or deposits of gravel, cobble and boulders (NatureServe Explorer 2015). Channel alteration, inundation due to impoundment of rivers, increased sedimentation and pollution from agriculture and logging operations and habitat loss and/or degradation resulting from intensive land use all threaten the scaleshell mussel (NatureServe Explorer 2015).

### **Direct Effects**

A mussel survey was conducted that did not identify any scaleshell mussels in the project area. Although the mussel survey did not detect the species within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities. Under proposed activities, heavy operating equipment could crush individuals.

### **Indirect Effects**

Under the proposed activities, temporary soil disturbance, creation of early successional habitat and sedimentation may alter this species’ preferred habitat. Sedimentation could clog the

mussels' feeding siphons or bury them completely though scaleshell mussels have been found buried in substrate at depths of 15 centimeters (NatureServe Explorer 2015). Furthermore, populations downstream of the immediate project area could be affected from proposed construction activities.

### **Cumulative Effects**

Current and planned Forest Service activities could have additional adverse impacts on this species; however, these cumulative effects would be minimal due to the fact that this species is protected under the Endangered Species Act (ESA) and the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Highway construction activities occurring within the ONF are reviewed to ensure compatibility with the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Further development within the area will likely be minimized due to the amount of property currently owned or maintained by the forest service. As a result, no cumulative effects are expected to occur.

**Determination of Effects:** *The proposed highway construction activities are “not likely to adversely affect” scaleshell mussels. Arkansas Natural Heritage Commission records indicate a scaleshell mussel occurrence approximately 3.0 miles downstream of the South Fourche La Fave River Bridge in 1991; however, a mussel survey was conducted in 2014, and no individuals were located within the project area. Although the species was not found in the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities, and individuals downstream from the project area could be affected by construction activities.*

### **Northern Long-eared Bat (*Myotis septentrionalis*) – Threatened**

The northern long-eared bat is found in 37 states across most the eastern and north central United States. In Arkansas, the northern long-eared bat's range includes over 40 counties, mostly in the Ozark Highlands, Boston Mountains, Ouachita Mountains and the western part of South Central Plains Ecoregions. Summer habitat includes intact forested interiors with a large number of old trees, multiple forest strata and standing snags and woody debris (NatureServe Explorer 2015). Hibernation primarily occurs in caves (USFWS 2011). Northern long-eared bat populations are threatened by a range of stressors including disease, land use change, and direct human disturbance. Factors directly influencing this species include white-nose syndrome, winter and summer habitat modification, disturbance and destruction such as roost tree removal, cave vandalism and climate change (NatureServe Explorer 2015).

### **Direct Effects**

Mist net and acoustic bat surveys were performed in the project area in August of 2015. Suitable foraging habitat and potential roosting habitat were observed in the project area for northern long-eared bats. During the survey, 3 northern long-eared bats were captured and radio transmitters were attached to two, one female and one male. The female northern long-eared bat was tracked for two days, no roost trees were located in the area, and the transmitter was dropped in a heavily forested area one mile from the capture site (i.e., the project area) and 0.5 mile from the highway right-of-way. A signal was never detected for the male bat. In summary, neither of the radio-tagged bats was found foraging in the project area the night following the transmitter being attached nor were they tracked to roosting sites within the project area (ESI Survey 2015). Although the survey did not locate any northern long-eared bats roosting within the project area,

they did utilize the area for foraging. Proposed construction activities could result in the conversion of approximately 8.4 acres of forest (i.e., foraging habitat) to highway right-of-way.

### **Indirect Effects**

Under the proposed activities, creation of early successional habitat and the intermittent stream relocation could alter this species' foraging habitat.

### **Cumulative Effects**

Current and planned Forest Service activities could have additional adverse impacts on this species; however, these cumulative effects would be minimal due to the fact that this species is protected under the Endangered Species Act (ESA) and the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Highway construction activities occurring within the ONF are reviewed to ensure compatibility with the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Further development within the area will likely be minimized due to the amount of property currently owned or maintained by the forest service. As a result, no cumulative effects are expected to occur.

**Determination of Effects:** *The proposed highway construction activities are “not likely to adversely affect” northern long-eared bats. Mist net and acoustic surveys conducted within the project area did not identify any roost trees. Although the species was not detected roosting within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities.*

### **Waterfall's Sedge (*Carex latebracteata*) – Sensitive**

Waterfall's sedge is endemic to the Ouachita Mountains of southeastern Oklahoma and southwestern Arkansas. It is known from several hundred sites in Arkansas, most of which are in or near the Ouachita National Forest. Waterfall's sedge is locally abundant along the stream systems of the Ouachita Mountains in Arkansas and Oklahoma. It is found in Polk, Yell, Montgomery, Howard, Garland, and Pike counties in Arkansas and LeFlore and McCurtain counties in Oklahoma (ONHI 2006). Waterfall's sedge is found in a variety of habitats such as shaley roadsides, dry shale woodlands, riparian areas, mesic oak hickory forests, pine and pine hardwood forests, mazarn shale and novaculite glades.

Waterfall's sedge receives some natural protection from human disturbance by the diversity of its preferred habitats, as described above. Many of the locations on the Ouachita National Forest are on sites that are outside the normal operating limits of common land management activities. Several of these are protected from many habitat-altering activities by virtue of being within the glade and riparian communities, Wilderness Areas, and Research Natural Areas which are protected under the Forest Plan (USDA FS 2005a).

### **Direct Effects**

Vascular plant surveys conducted within the project area did not identify the Waterfall's sedge. Although the vascular plant survey did not detect the species within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities. Temporary soil disturbance, sedimentation, and creation of long, narrow patches of early successional habitat should not have any direct effects on this species as these activities would occur outside of its preferred habitat.

**Indirect Effects**

Under the proposed activities, temporary soil disturbance may allow non native species to become established. Potentially invasive species noted in the project area include Japanese stilt grass (*Microstegium vimineum*), sericea lespedeza (*Lespedeza cuneata*), Chinese privet (*Ligustrum sinense*), tall fescue (*Festuca arundinacea*), and mimosa tree (*Albizia julibrissin*). Japanese stilt grass is of special concern because it is shade tolerant and can displace natural vegetation under a forest.

**Cumulative Effects**

Current and planned Forest Service activities could have additional adverse impacts on this species; however, these cumulative effects would be minimal due to the fact that this species' habitat is protected under the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Highway construction activities occurring within the ONF are reviewed to ensure compatibility with the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Further development within the area will likely be minimized since the right of way is bounded by National Forest System lands under the jurisdiction of the Ouachita National Forest. As a result, no cumulative effects are expected to occur.

**Determination of Effects:** *The proposed highway construction activities “may impact individuals but are not likely to cause a trend to federal listing or loss of viability” for Waterfall’s sedge. Vascular plant surveys conducted within the project area did not identify the Waterfall’s sedge. Although the species was not detected within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities.*

**Southern Lady’s Slipper (*Cypripedium kentuckiense*) – Sensitive**

This orchid occurs within the Interior Highlands of Arkansas, Missouri, and Oklahoma, the Gulf Coastal Plain of Texas, Louisiana, Alabama, and Mississippi, and the Cumberland Plateau of Kentucky and northern Tennessee (NatureServe 2009). It has also recently been found in eastern Virginia. The Southern lady-slipper is common in the state of Arkansas, but less common in Oklahoma, the western extent of its range.

The habitat for this species is mesic floodplain forests along stream terraces and along margins of seeps and springs. These areas are often inundated annually and have complete canopy cover. This species is also found on mesic north slopes in hardwood forests. It is most abundant above the flood level and away from spring-saturated soils. It is one of the most common and widespread sensitive plant species on the Ouachita National Forest. Protective measures established under the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b) to ensure the integrity of streamside management areas and seeps/springs have greatly reduced the potential for impacts to this species during resource management activities. Although its status is improving, the southern lady’s slipper’s habitat is threatened by logging, which converts suitable forest types into pine plantations and reservoir construction, which can permanently inundate floodplain forests. Southern lady’s slipper is intolerant to anthropogenic disturbance (ONHI 2006).

**Direct Effects**



Vascular plant surveys conducted within the project area did not identify the southern lady-slipper. Although the vascular plant survey did not detect the species within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities. Temporary soil disturbance, creation of early successional habitat, and sedimentation should not have any direct effects on this species.

### **Indirect Effects**

Under the proposed activities, temporary soil disturbance may allow non native species to become established. Potentially invasive species noted in the project area include Japanese stilt grass (*Microstegium vimineum*), sericea lespedeza (*Lespedeza cuneata*), Chinese privet (*Ligustrum sinense*), Japanese honeysuckle (*Lonicera japonica*), Johnson grass (*Sorghum halepense*), and mimosa tree (*Albizia julibrissin*). Japanese stilt grass is of special concern because it is shade tolerant and can displace natural vegetation under a forest.

### **Cumulative Effects**

Current and planned Forest Service activities could have additional adverse impacts on this species; however, these cumulative effects would be minimal due to the fact that this species' habitat is protected under the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Highway construction activities occurring within the ONF are reviewed to ensure compatibility with the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Further development within the area will likely be minimized due to the amount of property currently owned or maintained by the forest service. As a result, no cumulative effects are expected to occur.

**Determination of Effects:** *The proposed highway construction activities “may impact individuals but are not likely to cause a trend to Federal listing or loss of viability” for Southern lady’s slipper. Vascular plant surveys conducted within the project area did not identify the Southern lady’s slipper. Although the species was not detected within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities.*

### **Shinner’s sunflower (*Helianthus occidentalis* ssp. *plantagineus*) – Sensitive**

Shinner’s sunflower is known from east Texas, Arkansas and Louisiana. The Louisiana populations are considered possibly extirpated (NatureServe Explorer 2015). Population declines have been attributed to suburban sprawl in Texas, since a number of historic sites are near or in urban areas (NatureServe Explorer 2015). In Arkansas, Shinner’s sunflower occurs in Franklin, Garland, Montgomery, Perry and Pope Counties. Shinner’s sunflower is known from two kinds of habitats in Arkansas: upland sandstone woodlands and very high quality cobble bars and terraces of mountain streams, often associated with Cumberland sandreed (*Calamovilfa arcuata*) and harperella (*Ptilimnium nodosum*) (Witsell 2006). Marsh and Golden (1996) observed Shinner’s sunflower on shale outcrops on woodland edges in the Ouachitas.

### **Direct Effects**

Vascular plant surveys conducted within the project area did not identify Shinner’s sunflower. Although the vascular plant survey did not detect the species within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities. ANHC records indicate a known occurrence of Shinner’s sunflower

approximately 2.0 miles downstream from the Highway 7 Bridge crossing the South Fourche La Fave River. Under the proposed activities, heavy equipment could crush individuals.

### **Indirect Effects**

Under the proposed activities, temporary soil disturbance, creation of early successional habitat and sedimentation may allow non-native species to become established and alter this species' preferred habitat. Potentially invasive species noted in the project area include Japanese stilt grass (*Microstegium vimineum*), sericea lespedeza (*Lespedeza cuneata*), Chinese privet (*Ligustrum sinense*), Japanese honeysuckle (*Lonicera japonica*), Johnson grass (*Sorghum halepense*), and mimosa tree (*Albizia julibrisin*).

### **Cumulative Effects**

Current and planned Forest Service activities could have additional adverse impacts on this species; however, these cumulative effects would be minimal due to the fact that this species' habitat is protected under the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Highway construction activities occurring within the ONF are reviewed to ensure compatibility with the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b) in order to minimize cumulative impacts. Further development within the area will likely be minimized due to the amount of property currently owned or maintained by the forest service. As a result, no cumulative effects are expected to occur.

**Determination of Effects:** *The proposed highway construction activities “may impact individuals but are not likely to cause a trend to Federal listing or loss of viability” for Shinner’s sunflower. Vascular plant surveys conducted within the project area did not identify the Shinner’s sunflower. Although the species was not detected within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities.*

### **Ozark Chinquapin (*Castanea pumila* var. *ozarkensis*) – Sensitive**

This tree is found mainly in the Ozark Plateau Region, but there are scattered populations in the Ouachita Mountains. Habitat includes oak-pine and oak-hickory forests on relatively dry, acidic soils on ridge tops, tops of sandstone bluffs, upper slopes adjacent to ravines, and is also noted from mesic sites in much of Arkansas, and less commonly in Missouri and Oklahoma (ONHI 2006, Nature Serve Explorer 2015). Although forest clearings pose a threat to the dwindling Ozark Chinquapin populations, the declining population is mostly attributed to the chestnut blight. Trees killed by the chestnut blight may produce numerous sprouts from the roots (ONHI 2006, Nature Serve Explorer 2015).

### **Direct Effects**

Vascular plant surveys conducted did not identify any Ozark Chinquapin trees within the project area. Although the vascular plant survey did not detect the species within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities. Under proposed activities, heavy operating equipment could crush individuals. Temporary soil disturbance, creation of early successional habitat and sedimentation should not have any direct effect on this species that are undoubtedly already infected with the chestnut blight.

**Indirect Effects**

Under the proposed activities, temporary soil disturbance and creation of early successional habitat may allow non-native species to become established and alter this species' preferred habitat.

**Cumulative Effects**

Current and planned Forest Service activities could have additional adverse impacts on this species; however, these cumulative effects would be minimal due to the fact that this species' habitat is protected under the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Highway construction activities occurring within the ONF are reviewed to ensure compatibility with the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Further development within the area will likely be minimized due to the amount of property currently owned or maintained by the forest service. As a result, no cumulative effects are expected to occur.

**Determination of Effects:** *The proposed highway construction activities “may impact individuals but are not likely to cause a trend to Federal listing or loss of viability” for the Ozark Chinquapin. Vascular plant surveys conducted within the project area did not identify the Ozark Chinquapin. Although the species was not detected within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities.*

**Ouachita False Indigo (*Amorpha ouachitensis*) – Sensitive**

Ouachita false indigo is an endemic to the Ouachita Mountains of western Arkansas and southeastern Oklahoma. Habitat includes rocky creeks, stream banks, floodplains, rocky ridges, glades and dry rocky sandstone slopes (ONHI 2006, NatureServe Explorer 2015). Cattle grazing, logging, brush clearing, stream alteration and road construction threaten Ouachita false indigo populations (ONHI 2006, NatureServe Explorer 2015)..

**Direct Effects**

Vascular plant surveys conducted did not identify any Ouachita false indigo within the project area. Although the vascular plant survey did not detect the species within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities. Under proposed activities, heavy operating equipment could crush individuals. Temporary soil disturbance, creation of early successional habitat and sedimentation should not have any direct effect on this species, especially since this species is capable of growing in disturbed conditions (NatureServe Explorer 2015).

**Indirect Effects**

Under the proposed activities, temporary soil disturbance, creation of early successional habitat and sedimentation may allow non-native species to become established and alter this species' preferred habitat.

**Cumulative Effects**

Current and planned Forest Service activities could have additional adverse impacts on this species; however, these cumulative effects would be minimal due to the fact that this species' habitat is protected under the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Highway construction activities occurring within the ONF are reviewed to ensure compatibility

with the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Further development within the area will likely be minimized due to the amount of property currently owned or maintained by the forest service. As a result, no cumulative effects are expected to occur.

**Determination of Effects:** *The proposed highway construction activities “may impact individuals but are not likely to cause a trend to Federal listing or loss of viability” for Ouachita false indigo. Vascular plant surveys conducted within the project area did not identify the Ouachita false indigo. Although the species was not detected within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities.*

### **Openground Draba (*Draba aprica*) – Sensitive**

Openground draba occurs in the Interior Highlands of Missouri, Arkansas and Oklahoma and in granite outcrops in Georgia and the South Carolina Piedmont region. In Arkansas, habitat includes the forested margins of barrens and glades with very thin soils overlain on shale, dolomite and sandstone. Plants are found along open areas, but this species thrives in partially shaded areas (Tucker 1983, NatureServe Explorer 2015). Key threats to openground draba populations include loss of glades and barrens due to past and present mining activities, woody vegetation encroachment due to fire-suppression, and destruction of habitat due to planting pine plantations and other associated logging activities.

#### **Direct Effects**

Vascular plant surveys conducted did not identify any openground draba within the project area nor was any suitable habitat located. Due to no glade habitats being located in the project area, highway construction activities should have no direct effects on openground draba.

#### **Indirect Effects**

No indirect effects are expected to the species due to the lack of available habitat within the project area.

#### **Cumulative Effects**

Highway construction activities occurring within the ONF are reviewed to ensure compatibility with the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Further development within the area will likely be minimized due to the amount of property currently owned or maintained by the forest service. As a result, no cumulative effects are expected to occur.

**Determination of Effects:** *The proposed highway construction activities will have “no impact” on openground draba. Vascular plant surveys conducted within the project area did not identify the openground draba or any suitable habitat.*

### **Browne’s (Arkansas) Waterleaf (*Hydrophyllum brownei*) – Sensitive**

Browne’s waterleaf is endemic to the Ouachita Mountains in western Arkansas. This species is found in Garland, Howard, Montgomery, Pike, Polk, Saline, Sevier and Yell counties (Marsico 2003, NatureServe Explorer 2015). Habitat includes moist, diverse, deciduous woodlands. The formation of long rhizomes allows Browne’s waterleaf to colonize habitats lacking deep loamy soils, such as shaded talus slopes and rocky, well-drained stream terraces (NatureServe Explorer

2015). Land cover conversion of mesic forests on stream terraces to pine plantations continues to be a major threat to existing populations (NatureServe Explorer 2015).

### **Direct Effects**

Vascular plant surveys conducted in the project area did not identify any Browne's waterleaf in the project area. Although the vascular plant survey did not detect the species within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities. Under proposed activities, heavy operating equipment could crush individuals.

### **Indirect Effects**

Under the proposed activities, temporary soil disturbance, creation of early successional habitat and sedimentation may allow non-native species to become established and alter the preferred habitat of this species.

### **Cumulative Effects**

Current and planned Forest Service activities could have additional adverse impacts on this species; however, these cumulative effects would be minimal due to the fact that this species' habitat is protected under the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Highway construction activities occurring within the ONF are reviewed to ensure compatibility with the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Further development within the area will likely be minimized due to the amount of property currently owned or maintained by the forest service. As a result, no cumulative effects are expected to occur.

**Determination of Effects:** *The proposed highway construction activities “may impact individuals but are not likely to cause a trend to Federal listing or loss of viability” for Browne’s waterleaf. Vascular plant surveys conducted within the project area did not identify Browne’s waterleaf. Although the species was not detected within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities.*

### **Cumberland sandreed (*Calamovilfa arcuata*) – Sensitive**

Cumberland sandreed has a disjunct distribution, with populations clustered in Kentucky, Tennessee and Alabama and another group of populations in eastern Oklahoma and western Arkansas (NatureServe Explorer 2015). In Arkansas, Cumberland sandreed is found in Howard, Perry and Scott Counties. Habitat includes sunny, open gravel/cobble bars along high-gradient streams and small rivers that are subject to scouring floods (Kral 1983, ONHI 2006). Flood scouring creates new gravel bars but inhibits competition from shrubs including *Alnus serrulata* and *Itea virginica* (Kral 1983, NatureServe Explorer 2015). Main threats to Cumberland sandreed populations include reservoir and dam construction or any changes to river hydrology that alter flood frequency and intensity as well as woody species that colonize cobble bars (Kral 1983, NatureServe Explorer 2015).

### **Direct Effects**

Vascular plant surveys conducted in the project area did not identify any Cumberland sandreed in the project area. Although the vascular plant survey did not detect the species within the project area, there is the possibility that individuals of this species could be overlooked or not

avoided during highway construction activities. Under proposed activities, heavy operating equipment could crush individuals.

### **Indirect Effects**

Under the proposed activities, temporary soil disturbance, creation of early successional habitat and sedimentation may allow non-native species to become established and alter this species' preferred habitat.

### **Cumulative Effects**

Highway construction activities occurring within the ONF are reviewed to ensure compatibility with the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Further development within the area will likely be minimized due to the amount of property currently owned or maintained by the forest service. As a result, no cumulative effects are expected to occur.

**Determination of Effects:** *The proposed highway construction activities “may impact individuals but are not likely to cause a trend to Federal listing or loss of viability” for Cumberland sandreed. Vascular plant surveys conducted within the project area did not identify Cumberland sandreed. Although the species was not detected within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities.*

### **Diana Fritillary (*Speyeria diana*) – Sensitive**

The Diana fritillary is a butterfly species of concern due to range-wide population declines and its apparent extirpation from large portions of its historical range (NatureServe 2015). The species' current range includes the mountains of central Virginia, West Virginia, the western Carolinas, eastern Tennessee, northern Georgia, and Alabama with scattered locations in Arkansas and Missouri. In western Arkansas, surveys conducted in the early 1990s found populations in nine counties. During 1998 and 1999, extensive surveys by Dr. Matthew Moran of Hendrix College added nine additional counties indicating the species to be more widespread than previously thought (Moran and Baldrige 2001). The detailed distribution of this species within the Mena Ranger District is unknown although they have been seen by USFS personnel in Montgomery County.

The Diana fritillary prefers areas maintained by fire and other openings, such as roads, glades, disturbed areas, and edges for the growth of preferred nectar producing plants for feeding, which include but are not limited to *Echinacea pallida*, *E. purpurea*, *Asclepias tuberosa* and *Monarda fistulosa* (Rudolph and Ely 2000). Surveys conducted in western Arkansas during the early 1990s found the butterfly associated with disturbed habitat and natural prairies. Adults have been observed feeding on a variety of flowering plants including buttonbush (*Cephalanthus occidentalis*), purple coneflower (*Echinacea purpurea*), and compass plant (*Silphium laciniatum*) (ANHC 2002). During late summer, females lay one brood of eggs near violets (*Viola spp.*), the larval host plant. Larvae hatch in the fall, overwinter in leaf litter, and move to nearby violets to feed during the spring (Carlton and Spencer 1996). Moran and Baldrige (2001) suggested that the relative scarcity of the butterfly may be related to its need for high quality nectar plants that have become rarer as prairies and wetlands have been diminished.

### **Direct Effects**

Under the proposed activities, heavy equipment operation may impact larva and eggs on the ground by crushing individuals. The proposed activities are not likely to impact adult butterflies because they are highly mobile. Creation of early successional habitat, soil disturbance, and sedimentation should not have any direct effects on this species.

### **Indirect Effects**

Under the proposed activities, approximately 8.4 acres within the ONF will be converted to highway rights-of-way. Construction related activities and the conversion of forested properties to highway rights-of-way may promote beneficial herbaceous growth preferred by this butterfly, if only temporarily. A seeding special provision will be included in the contract that will include both native grasses and wildflowers that are primary nectar sources of the Diana fritillary. Increases in herbaceous cover would provide greater foraging and reproduction opportunities for this species. An increase in adult mortality is expected as the result of increased traffic and traffic speeds.

### **Cumulative Effects**

Current and planned Forest Service activities could have additional adverse impacts on this species; however, many forest management activities promote beneficial herbaceous growth preferred by this species thus providing positive overall cumulative effects. Detailed analyses of all forest management activities are included in the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Highway construction activities occurring within the ONF are reviewed to ensure compatibility with the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Further development within the area will likely be minimized since the right of way is bounded by National Forest System lands under the jurisdiction of the Ouachita National Forest. As a result, no cumulative effects are expected to occur.

**Determination of Effects:** *The proposed highway construction activities “may impact individuals but are not likely to cause a trend to Federal listing or loss of viability” for the Diana fritillary. The conversion of ONF property to highway rights-of-way represents a small fraction of all available habitats. The promotion of early successional habitats may have beneficial effects on the species, if only temporarily. Any beneficial effects would likely be offset by increases in mortality rates due to increases in traffic numbers and speed.*

### **Bachman’s Sparrow (*Peucaea aestivalis*) – Sensitive**

The breeding range for Bachman’s sparrow includes southern Maryland, Ohio and Pennsylvania south to eastern Texas, the Gulf Coast and southcentral Florida. Non-breeding range is concentrated in southeastern US, eastern Texas and southeastern North Carolina. Bachman’s sparrow is fairly common in the outer Coastal Plain, uncommon in the inner Coastal Plain, rare in the Piedmont region and absent or local in its former northeastern breeding range (NatureServe Explorer 2015). In the southeastern US, Bachman’s sparrow is found year round in open pine woodland habitats with canopy coverage at 50% or less, dense herbaceous cover at greater than 60% and limited mid-story density at less than 10% (USFWS Fire Management Species Profile 2013). Habitat loss is the predominant threat to Bachman’s sparrow due to pine plantation conversion, urbanization and agricultural practices and fire suppression.

### **Direct Effects**

Although there is no recorded occurrence of Bachman's sparrow in the project area, its breeding range does include the project area; therefore, Bachman's sparrow could be overlooked and not avoided during highway construction activities. Under proposed activities, heavy operating equipment could disturb adults or crush juvenile Bachman's sparrows.

**Indirect Effects**

Creation of early successional habitat could benefit Bachman's sparrow by providing suitable habitat for a few years (USFWS Fire Management Species Profile 2013).

**Cumulative Effects**

Highway construction activities occurring within the ONF are reviewed to ensure compatibility with the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Further development within the area will likely be minimized due to the amount of property currently owned or maintained by the forest service. As a result, no cumulative effects are expected to occur.

**Determination of Effects:** *The proposed highway construction activities “may impact individuals but are not likely to cause a trend to federal listing or loss of viability” for Bachman's sparrow. Although the species has not been recorded from the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities. The creation of early successional habitat could be beneficial by providing suitable habitat to Bachman's sparrow.*

**Louisiana Fatmucket Mussel (*Lampsilis hydiana*) – Sensitive**

This species ranges from south Texas to south Oklahoma east to western Mississippi, and it is extremely common in western Louisiana. The taxonomic status of populations in southeastern Oklahoma remains unclear, but may include this species (NatureServe Explorer 2015). Habitat includes creeks to medium sized streams with mud or mud and sand substrate in low-flow conditions (Howells et al. 1996). Harris and Gordon (1990) comment that the Louisiana fatmucket inhabits slow moving waters or backwaters with rock, gravel, gravel-sand or mud substrates. Lewter et al. (2003) found Louisiana fatmucket in the South Fourche La Fave River; however, the specific localities were left unclear. Louisiana fatmucket has several large populations in Texas, Louisiana and southern Arkansas, where populations are stable with limited threats (NatureServe Explorer 2015).

**Direct Effects**

A mussel survey was conducted and did not identify any Louisiana fatmucket mussels in the project area. Although the mussel survey did not detect the species within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities. Under proposed activities, heavy operating equipment could crush individuals.

**Indirect Effects**

Under the proposed activities, temporary soil disturbance, creation of early successional habitat and sedimentation may alter preferred habitat for this species. Sedimentation could clog the mussel's feeding siphons or bury it completely. Furthermore, downstream populations, outside of the immediate project area, could be affected from proposed construction activities.



**Cumulative Effects**

Highway construction activities occurring within the ONF are reviewed to ensure compatibility with the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Further development within the area will likely be minimized due to the amount of property currently owned or maintained by the forest service. As a result, no cumulative effects are expected to occur.

**Determination of Effects:** *The proposed highway construction activities “may impact individuals but are not likely to cause a trend to Federal listing or loss of viability” for Louisiana fatmucket mussels. A mussel survey was conducted, and no individuals were located within the project area. Although the species was not found within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities, and individuals downstream from the project area could be affected by construction activities.*

**Plain pocketbook mussel (*Lampsilis cardium*) – Sensitive**

This species is found in the southern portions of the western Gulf drainages of Mississippi, Arkansas, Louisiana and Texas. In Arkansas, it is found in the Spring, Little Red, Cadron, Fourche La Fave, Mountain Fork and Lower Little watersheds (8-digit HUCs). Habitat includes small to large rivers with moderate flows with gravel, gravel-sand and sand substrates (NatureServe Explorer 2015). Habitat loss due to sedimentation, impoundments and pollution to streams and rivers are the primary impacts facing the sandbank pocketbook mussel (Louisiana Wildlife & Fisheries fact sheet). Sandbank pocketbook mussel (*Lampsilis satura*) is not found in Arkansas; plain pocketbook mussel (*Lampsilis cardium*) is present in Arkansas (pers. comm. with John Harris).

**Direct Effects**

A mussel survey was conducted and did not identify any Sandbank pocketbook mussels in the project area. Although the mussel survey did not detect the species within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities. Under proposed activities, heavy operating equipment could crush individuals.

**Indirect Effects**

Under the proposed activities, temporary soil disturbance, creation of early successional habitat and sedimentation may alter this species' preferred habitat. Sedimentation could clog the mussels' feeding siphons or bury them completely. Furthermore, downstream populations, outside of the immediate project area, could be affected by proposed construction activities.

**Cumulative Effects**

Highway construction activities occurring within the ONF are reviewed to ensure compatibility with the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Further development within the area will likely be minimized due to the amount of property currently owned or maintained by the forest service. As a result, no cumulative effects are expected to occur.

**Determination of Effects:** *The proposed highway construction activities “may impact individuals but are not likely to cause a trend to Federal listing or loss of viability” for sandbank pocketbook mussels. Arkansas Natural Heritage Commission records indicate that several*

*sandbank pocketbook mussels were found both upstream and downstream of the South Fourche La Fave River Bridge in 1991; however, a mussel survey was conducted in 2015, and no individuals were located within the project area. Although the species was not found within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities, and individuals downstream from the project area could be affected from construction activities.*

### **Southern hickorynut mussel (*Obovaria arkansasensis*) – Sensitive**

Due to phenotypic plasticity among mussels found in headwater areas versus those found downstream, it was thought that two different mussel species (*Obovaria jacksoniana* and *Villosa arkansasensis*) were being observed; however, recent DNA evidence has shown that they are the same species that is now recognized as *Obovaria arkansasensis*. Previous synonyms that are currently invalid include *Obovaria jacksoniana* and *Villosa arkansasensis*.

This species ranges from Alabama west to east Texas, and as far north as southeast Missouri along the Mississippi River south to Mississippi. In Arkansas, viable populations have a widespread distribution, and a few individuals were found in the South Fourche La Fave (Harris et al. 2009, NatureServe Explorer 2015). Southern hickorynut mussels are found in small to large sized rivers with gravel bottoms (NatureServe 2015). Little is known about the major threats to this species, but Mississippi populations have been destroyed by construction activities directly related to dam and reservoir construction (NatureServe Explorer 2015).

#### **Direct Effects**

A mussel survey was conducted and did not identify any southern hickorynut mussels in the project area. Although the mussel survey did not detect the species within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities. Under proposed activities, heavy operating equipment could crush individuals.

#### **Indirect Effects**

Under the proposed activities, temporary soil disturbance, creation of early successional habitat and sedimentation may alter this species' preferred habitat. Sedimentation could clog the mussels' feeding siphons or even bury it completely. Furthermore, downstream populations, outside of the immediate project area, may be affected from proposed construction activities.

#### **Cumulative Effects**

Protective measures established under the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b) to ensure the integrity of streamside management areas and seeps/springs have greatly reduced the potential for impacts to this species during resource management activities. Highway construction activities occurring within the ONF are reviewed to ensure compatibility with the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Further development within the area will likely be minimized due to the amount of property currently owned or maintained by the forest service. As a result, no cumulative effects are expected to occur.

**Determination of Effects:** *The proposed highway construction activities “may impact individuals but are not likely to cause a trend to Federal listing or loss of viability” for the southern hickorynut mussel. Arkansas Natural Heritage Commission records indicate a southern*

*hickorynut mussel occurrence (relict shell) approximately 0.8 mile downstream of the South Fourche La Fave River Bridge in 2004; however, a mussel survey was conducted in 2014, and no individuals were located within the project area. Although the species was not found within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities, and individuals downstream from the project area could be affected from construction activities.*

### **Purple Lilliput pearlymussel (*Toxolasma lividum*) – Sensitive**

The purple lilliput pearlymussel occurs in Michigan and Ohio in the lower Ohio River drainage, most of the Tennessee River drainage in Virginia, North Carolina, Tennessee and Alabama; it occurs west of the Mississippi River in southern Missouri, northern Arkansas and potentially into Oklahoma. In Arkansas, it is found throughout the Ozark and Ouachita Highlands, including the South Fourche La Fave River (NatureServe Explorer 2015). Habitat includes fine-particle, sand, gravel or cobble and boulder substrates in riffles of headwaters of small to medium sized rivers (NatureServe Explorer 2015). Major threats to this species include pollution and sedimentation from land use practices and channel alteration and inundation, construction of dams and other river impoundments; although, this species tolerates impoundments better than others (NatureServe Explorer 2015).

#### **Direct Effects**

A mussel survey was conducted in the project area and did not identify any purple lilliput mussels in the project area. Although the mussel survey did not detect the species within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities, and heavy operating equipment could crush individuals.

#### **Indirect Effects**

Under the proposed activities, temporary soil disturbance, creation of early successional habitat and sedimentation may alter this species' preferred habitat. Sedimentation could clog the mussels' feeding siphons or even bury them completely. Furthermore, downstream populations, outside of the immediate project area, could be affected from proposed construction activities.

#### **Cumulative Effects**

Highway construction activities occurring within the ONF are reviewed to ensure compatibility with the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Further development within the area will likely be minimized due to the amount of property currently owned or maintained by the forest service. As a result, no cumulative effects are expected to occur.

**Determination of Effects:** *The proposed highway construction activities “may impact individuals but are not likely to cause a trend to Federal listing or loss of viability” for purple lilliput mussels. Arkansas Natural Heritage Commission records indicate a purple lilliput mussel occurrence approximately 1.5 miles downstream of the South Fourche La Fave River Bridge in 1991; however, a mussel survey was conducted in 2015, and no individuals were located within the project area. A mussel survey was conducted, and no individuals were located within the project area. Although the species was not found within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction*

*activities, and individuals downstream from the project area could be affected from construction activities.*

### **Kiamichi Shiner (*Notropis ortenburgeri*) – Sensitive**

This species is found in upland streams of the Ouachita Mountains in Arkansas and Oklahoma. In Arkansas, it is known from the Arkansas and Ouachita River drainages. Habitat includes clear upland creeks and small rivers, in flowing pools with gravel or boulder substrates (Robison and Buchanan 1988, NatureServe Explorer 2015). Habitat alteration and fragmentation due to reservoir construction and intensive silvicultural practices are major threats to the Kiamichi shiner (NatureServe Explorer 2015).

#### **Direct Effects**

ANHC Records (2010) indicate known occurrences of the Kiamichi shiner in the South Fourche La Fave River that may be impacted by highway construction activities. During the proposed construction, heavy operating equipment could crush individuals.

#### **Indirect Effects**

Under the proposed activities, temporary soil disturbance, creation of early successional habitat and sedimentation may alter this species' preferred habitat. Furthermore, downstream populations, outside of the immediate project area, could be affected from proposed construction activities.

#### **Cumulative Effects**

Highway construction activities occurring within the ONF are reviewed to ensure compatibility with the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b). Further development within the area will likely be minimized due to the amount of property currently owned or maintained by the forest service. As a result, no cumulative effects are expected to occur.

#### **Determination of Effects**

*The proposed highway construction activities “may impact individuals but are not likely to cause a trend to Federal listing or loss of viability” for Kiamichi shiner. Arkansas Natural Heritage Commission records indicate known occurrences in the South Fourche La Fave River.*

### **Longnose darter (*Percina nasuta*) - Sensitive**

The longnose darter is found in the St. Francis, White, Arkansas and Ouachita River drainages in the Ozark and Ouachita Mountains of Arkansas, southern Missouri and eastern Oklahoma. In Arkansas, the longnose darter has recently been found in Lee Creek, Frog Bayou, Mulberry River, upper White River, War Eagle Creek, Big Piney Creek, Illinois Bayou, Ouachita River, Caddo River and the South Fourche La Fave River (Robison and Harp 1988, NatureServe Explorer 2015). The longnose darter can be found in small to medium sized rivers with clear water. It inhabits gravel riffles in the spring and slower moving water over sand and silt in the fall (NatureServe Explorer 2015). Longnose darter populations are susceptible to habitat alteration from stream impoundments and any activities leading to reduced water quality (NatureServe Explorer).

**Direct Effects**

ANHC Records (2010) indicate longnose darter occurrences in the South Fourche La Fave River. Although, these records date back to 1960s and 1970s, with the latest record in 1991, there is the likelihood of longnose darter populations continuing to inhabit the South Fourche La Fave River and highway construction activities could potentially affect this species. During the proposed construction, heavy operating equipment could crush individuals.

**Indirect Effects**

Under the proposed activities, temporary soil disturbance, creation of early successional habitat and sedimentation may alter this species' preferred habitat. Furthermore, downstream populations, outside of the immediate project area, could be affected from proposed construction activities.

**Cumulative Effects**

Protective measures established under the Forest Plan (USDA FS 2005a) and FEIS (USDA FS 2005b) to ensure the integrity of streamside management areas and seeps/springs have greatly reduced the potential for impacts to this species during resource management activities. Highway construction activities occurring within the ONF are reviewed to ensure compatibility with the Forest Plan. As a result, no cumulative effects are expected to occur.

**Determination of Effects:** *The proposed highway construction activities “may impact individuals but are not likely to cause a trend to Federal listing or loss of viability” of the longnose darter. Under proposed construction activities, individuals could be crushed by heavy operating equipment, and construction activities could result in temporary soil disturbance and sedimentation, either of which could lead to a decrease in water quality.*

**CONSULTATION HISTORY WITH THE U.S. DEPARTMENT OF THE INTERIOR – U.S. FISH AND WILDLIFE SERVICE**

A copy of this document as well as a Categorical Exclusion for this project will be provided to the US Fish and Wildlife Service (USFWS) for comment. Three federally listed species are known to occur in or near the proposed action area: Harperella (*Ptilimnium nodosum*) and scaleshell mussel (*Leptodea leptodon*) as endangered and the northern long-ear bat (*Myotis septentrionalis*) as threatened. Based on the findings of this document as well as previous consultations between ONF and the USFWS, a determination of not likely to adversely affect is appropriate, unless presented with new information.

**COORDINATION HISTORY WITH THE U.S. ARMY CORPS OF ENGINEERS**

The proposed construction activities will require excavation or discharge of dredged or fill material into jurisdictional waters of the U.S.; thus, an USACE issued permit under the Section 404 of the Clean Water Act will need obtained for this project. A permit application will be submitted to the Little Rock District for this project. The relocation of approximately 1600' of intermittent stream will require compensatory mitigation at an approved mitigation bank.

**DETERMINATION OF EFFECTS**

*Based on the preceding documentation, discussions, and “best available science,”* the “determination of effects” for the proposed actions are as follows:

**A. Proposed, Threatened and Endangered Species**

**No Effect**

**Not likely to adversely affect**

**Likely to adversely affect**

***Harperella:*** *The proposed timber harvesting, utility relocations and highway construction activities will “not likely to adversely affect” harperella. Vascular plant surveys conducted within the project area did not identify harperella; however, there are known populations along the South Fourche La Fave River. An increase in sedimentation from bridge construction may negatively affect the species, since it is relatively sensitive to increases in turbidity and decreases in water quality.*

***Northern long-eared bat:*** *The proposed timber harvesting, utility relocations and highway construction activities will “not likely adversely affect” northern long-eared bats. Mist net and acoustic surveys conducted within the project area did not identify any bats roosting in trees in the project area. Although the species was not detected roosting within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities.*

***Scaleshell mussel:*** *The proposed timber harvesting, utility relocations and highway construction activities will “not likely to adversely affect” scaleshell mussel. Mussel surveys conducted in the project area did not identify any individuals; however, ANHC records indicate a known occurrence of scaleshell mussel in the South Fourche La Fave River. Although the species was not detected within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities.*

**B. Sensitive Species**

**No impact**

**Beneficial impact**

**May impact individuals but is not likely to cause a trend to federal listing or loss of viability:**

***Openground draba:*** *The proposed timber harvesting, utility relocations and highway construction activities will have “no impact” on openground draba, due to the lack of suitable habitat in the project area.*

### C. Sensitive Species

\_\_\_\_\_ No impact

\_\_\_\_\_ Beneficial impact

May impact individuals but is not likely to cause a trend to federal listing or loss of viability:

***Diana fritillary:*** The proposed timber harvesting, utility relocations and highway construction activities “may impact individuals but are not likely to cause a trend to Federal listing or loss of viability” for the Diana fritillary. The conversion of ONF property to highway rights-of-way represents a small fraction of all available habitat. The promotion of early successional habitats may have beneficial effects on the species if only temporarily. Any beneficial effects would likely be offset by increases in mortality rates due to increases in traffic numbers and speed.

***Waterfall’s sedge:*** The proposed timber harvesting, utility relocations and highway construction activities “may impact individuals but are not likely to cause a trend to Federal listing or loss of viability” for Waterfall’s sedge. Vascular plant surveys conducted within the project area did not identify the Waterfall’s sedge. Although the species was not detected within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities.

***Southern lady’s slipper:*** The proposed timber harvesting, utility relocations and highway construction activities “may impact individuals but are not likely to cause a trend to Federal listing or loss of viability” for Southern lady-slipper. Vascular plant surveys conducted within the project area did not identify the Southern lady-slipper. Although the species was not detected within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities.

***Shinner’s sunflower:*** The proposed timber harvesting, utility relocations and highway construction activities “may impact individuals but are not likely to cause a trend to Federal listing or loss of viability” for Shinner’s sunflower. Vascular plant surveys conducted within the project area did not identify the Shinner’s sunflower. Although the species was not detected within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities.

***Ozark chinquapin:*** The proposed timber harvesting, utility relocations and highway construction activities “may impact individuals but are not likely to cause a trend to Federal listing or loss of viability” for Ozark chinquapin. Vascular plant surveys conducted within the project area did not identify the Ozark chinquapin. Although the species was not detected within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities.

***Ouachita false indigo:*** The proposed timber harvesting, utility relocations and highway construction activities “may impact individuals but are not likely to cause a trend to Federal listing or loss of viability” for *Ouachita false indigo*. Vascular plant surveys conducted within the project area did not identify the *Ouachita false indigo*. Although the species was not detected within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities.

***Browne’s waterleaf:*** The proposed timber harvesting, utility relocations and highway construction activities “may impact individuals but are not likely to cause a trend to Federal listing or loss of viability” for *Browne’s waterleaf*. Vascular plant surveys conducted within the project area did not identify the *Browne’s waterleaf*. Although the species was not detected within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities.

***Cumberland sandreed:*** The proposed timber harvesting, utility relocations and highway construction activities “may impact individuals but are not likely to cause a trend to Federal listing or loss of viability” for *Cumberland sandreed*. Vascular plant surveys conducted within the project area did not identify the *Cumberland sandreed*. Although the species was not detected within the project area, there is the possibility that individuals of this species could be overlooked or not avoided during highway construction activities.

***Bachman’s sparrow:*** The proposed timber harvesting, utility relocations and highway construction activities “may impact individuals but are not likely to cause a trend to Federal listing or loss of viability” for *Bachman’s sparrow*. Under proposed activities, heavy operating equipment could disturb adult sparrows and crush juveniles.

***Louisiana fatmucket mussel:*** The proposed timber harvesting, utility relocations and highway construction activities “may impact individuals but are not likely to cause a trend to Federal listing or loss of viability” for *Louisiana fatmucket*. Under proposed activities, heavy operating equipment could crush individuals. Temporary soil disturbance and sedimentation could clog mussels’ feeding siphons or bury them completely. Creation of early successional habitat could alter this species preferred habitat.

***Plain pocketbook mussel:*** The proposed timber harvesting, utility relocations and highway construction activities “may impact individuals but are not likely to cause a trend to Federal listing or loss of viability” for *plain pocketbook mussel*. Under proposed activities, heavy operating equipment could crush individuals. Temporary soil disturbance and sedimentation could clog mussels’ feeding siphons or bury them completely. Creation of early successional habitat could alter this species preferred habitat.

***Southern hickorynut mussel:*** The proposed timber harvesting, utility relocations and highway construction activities “may impact individuals but are not likely to



*cause a trend to Federal listing or loss of viability” for the southern hickorynut mussel. Under proposed activities, heavy operating equipment could crush individuals. Temporary soil disturbance and sedimentation could clog mussels’ feeding siphons or bury them completely. Creation of early successional habitat could alter this species preferred habitat.*

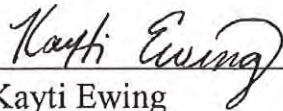
***Purple lilliput mussel:*** *The proposed timber harvesting, utility relocations and highway construction activities “may impact individuals but are not likely to cause a trend to Federal listing or loss of viability” for purple lilliput mussel. Under proposed activities, heavy operating equipment could crush individuals. Temporary soil disturbance and sedimentation could clog mussels’ feeding siphons or bury them completely. Creation of early successional habitat could alter this species preferred habitat.*

***Kiamichi shiner:*** *The proposed timber harvesting, utility relocations and highway construction activities “may impact individuals but are not likely to cause a trend to Federal listing or loss of viability” for Kiamichi shiner. Under proposed activities, heavy operating equipment could crush individuals. Temporary soil disturbance, sedimentation and creation of early successional habitat could alter this species preferred habitat.*

***Longnose darter:*** *The proposed timber harvesting, utility relocations and highway construction activities “may impact individuals but are not likely to cause a trend to Federal listing or loss of viability” for longnose darter. Under proposed activities, heavy operating equipment could crush individuals. Temporary soil disturbance and sedimentation could decrease water quality.*

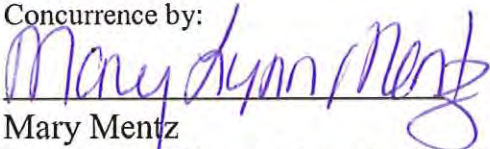
AHTD Job #080439

BE Jessievile-Winona-Fourche Ranger District

  
\_\_\_\_\_  
Kayti Ewing  
AHTD Environmental Analyst

2/26/2016  
Date

Concurrence by:

  
\_\_\_\_\_  
Mary Mentz  
Jessievile-Winona-Fourche District Wildlife Biologist

3/2/2016  
Date

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## Appendix A

### PETS Species Checklist

*Survey Needs Based on FSM 2672.43(USDA FS 2005e)*

## Proposed, Endangered, Threatened, and Sensitive Species List (Arkansas Portion of the Ouachita National Forest Only)

Common Name	Scientific Name	Status*	Potentially Affected	Notes and Comments
<b>FEDERALLY ENDANGERED and THREATENED SPECIES</b>				
American alligator	<i>Alligator mississippiensis</i>	TSA	No	Range does not include the Jessieville-Winona-Fourche Units of the District (AGFC Website).
American burying beetle	<i>Nicrophorus americanus</i>	E	No	Occurrence is not expected project area lies outside designated American Burying Beetle Area (Carlton and Rothwein 1998, USDI-FWS 2005b, USFWS Consultation Area Shapefile 2012).
Arkansas fatmucket mussel	<i>Lampsilis powellii</i>	T	No	Occurs in the Alum Fork of Saline River on the Winona Ranger District (ANHC Records 2010). Arkansas endemic; occurs in the Saline, Ouachita and Caddo River Systems only (Davidson 1997, Davidson and Clem 2002, USDI-FWS 2005a, USDA-FS 2005a, Robison and Allen 1995, Harris et al. 2009).
<b>Harperella (plant)</b>	<i>Ptilimnium nodosum</i>	E	<b>Yes</b>	Does occur in project area (Witsell and Baker 2011, USDA-FS 2005b, ANHC Records 2010, NatureServe Explorer 2015).
Indiana bat	<i>Myotis sodalis</i>	E	No	No records for the Arkansas portion of the forest and occurrence is unlikely (Sealander and Heidt 1990, Kurta and Kennedy eds. 2002, Southern Research Station data files NatureServe Explorer 2015).
Least Tern (bird)	<i>Sternula antillarum</i>	E	No	Nest on sandbars of large rivers (James and Neal 1986, USFWS 2013). Suitable habitat not available in project area.
Leopard darter (fish)	<i>Percina pantherina</i>	T	No	Range does not include the JWF Units (USDA-FS 2005b, ANHC Records 2010, NatureServe Explorer 2015). Located on Cossatot, Little and Glover Rivers.
Missouri bladderpod (plant)	<i>Physaria (Lesquerella) filiformis</i>	T	No	Not known from project area or surrounding counties, closest known location is Garland County (Witsell 2006).
Ouachita rock pocketbook mussel	<i>Arkansia wheeleri</i>	E	No	Range does not include JWF Units of District (USDA-FS 2005b, ANHC Records 2010, NatureServe Explorer 2015). Known from Red and Ouachita Rivers Systems.
Piping Plover (bird)	<i>Charadrius melodus</i>	E	No	Suitable habitat is not available on JWF Units. Nests on sandbars with most records from the Miss. Alluv. Plain. One record from the Ouachita Mountains in 1938 (James and Neal 1986).
Red-cockaded Woodpecker	<i>Picoides borealis</i>	E	No	Historically present although signs were looked for during previous watershed surveys and none were found.
<b>Scaleshell mussel</b>	<i>Leptodea leptodon</i>	E	<b>Yes</b>	Occurrence (c. 1991) within Winona Unit of District in the South Fourche La Fave River <u>only</u> (Harris 1992, Harris et al. 2009, USFWS 2001, Stoeckel and Moles 2002, ANHC Records 2010, NatureServe Explorer 2015).



Common Name	Scientific Name	Status*	Potentially Affected	Notes and Comments
Winged maple-leaf mussel	<i>Quadrula fragosa</i>	E	No	Range does not include project area or JWF Units of District (Harris et al. 2009; ANHC Records 2010, NatureServe Explorer 2015). Occurs on Ouachita and Little Missouri Rivers.
Spectaclecase mussel	<i>Cumberlandia monodonta</i>	E	No	Does not occur in project area (Harris et al. 2009, NatureServe Explorer 2015). Occurs on lower Ouachita River and Mulberry.
Rabbitsfoot mussel	<i>Quadrula cylindrica cylindrica</i>	T	No	Does not occur within or downstream from the project area (Harris et al. 2009, USDI-FWS 2012). Populations occur in Spring and Black River Drainages.
<b>Northern long-eared bat</b>	<i>Myotis septentrionalis</i>	T	<b>Yes</b>	Thought to be common forest-wide. Spending summers in live or dead trees and winter in hibernacula.
<b>FOREST SERVICE SENSITIVE SPECIES - ANIMALS</b>				
Peregrine Falcon	<i>Falco peregrinus anatum</i>	S	No	Unlikely to occur in project area. May occur casually in migration - does not nest here (James and Neal 1986).
<b>Bachman's Sparrow</b>	<i>Aimophila aestivalis</i>	S	<b>Yes</b>	May be found in or near project area. Requires open pine forest, early forest stage cover for nesting habitat (Haggerty 1986, 1995, 2000, Shriver and Vickery 2001, Tucker et al. 2004, 2006, Wood et al. 2004).
Bald Eagle	<i>Haliaeetus leucocephalus</i>	S	No	Not documented near project area. USDI-FWS (2007a) Guidelines apply. Recently de-listed from Federally Threatened status and placed on this list (USDA-FS 2007, USDI-FWS 2007b).
Caddo madtom (fish)	<i>Noturus taylori</i>	S	No	Range does not include the Jessieville-Winona-Fourche Units of District (AR Fish Database 2001, ANHC Records 2010). Arkansas Endemic (Robison and Allen 1995).
Caddo Mtn. salamander	<i>Plethodon caddoensis</i>	S	No	Range does not include Jessieville-Winona-Fourche Units of District (Trauth and Wilhide 1999, Trauth et al. 2004). Arkansas Endemic (Robison and Allen 1995).
Crayfish (no common name)	<i>Fallicambarus strawni</i>	S	No	Range does not include Jessieville-Winona-Fourche Units of District (Robison 2000). Arkansas Endemic (Robison and Allen 1995).
Crayfish (no common name)	<i>Orconectes menae</i>	S	No	Range does not include Jessieville-Winona-Fourche Units of District (Robison 2000, ANHC Records 2010).
Crayfish (no common name)	<i>Procambarus reimeri</i>	S	No	Range does not include Jessieville-Winona-Fourche Units of District (Robison 2000). Arkansas Endemic (Robison and Allen 1995).
Crayfish (no common name)	<i>Procambarus tenuis</i>	S	No	Range does not include Jessieville-Winona-Fourche Units of District (Robison 2000). Western AR.
Crystal darter (fish)	<i>Crystallaria asprella</i>	S	No	Range does not include JWF Units of District (Robison and Buchanan 1988).
<b>Diana fritillary butterfly</b>	<i>Speyeria diana</i>	S	<b>Yes</b>	Early seral plant species in gaps or open forests (Carlton and Nobles 1996, Rudolph and Ely 2000a, 2000b, Spencer 2006, Rudolph et al. 2006, Baltosser 2007, Campbell et al. 2007).
Fourche Mtn. salamander	<i>Plethodon fourchensis</i>	S	No	Range does not include Jessieville-Winona Units of District (Trauth and Wilhide 1999, Trauth et al. 2004). Arkansas Endemic (Robison and Allen 1995).
Isopod (no common name)	<i>Lirceus bicuspidatus</i>	S	No	Not located in project area. Known from one location on Winona Unit <i>only</i> (ANHC Records 2010). Arkansas Endemic (Robison and Allen 1995).

Common Name	Scientific Name	Status*	Potentially Affected	Notes and Comments
<b>Kiamichi shiner (fish)</b>	<i>Notropis ortenburgeri</i>	S	Yes	Closest known locations: Two in Winona Unit (about 7 miles southeast of project area on South Fork of Alum Fork) and one in Jessievile Unit, approx. 9 miles west of South Fourche La Fave River Bridge (ANHC Records 2010, NatureServe Explorer 2015; Robison and Buchanan, 1988). Petit Jean River Drainage and Saline River possibly.
Kiamichi slimy salamander	<i>Plethodon kiamichi</i>	S	No	Range does not include Jessievile-Winona-Fourche Units of District (Trauth and Wilhide 1999, Trauth <i>et al.</i> 2004).
Loggerhead Shrike (bird, migrant)	<i>Lanius ludovicianus</i>	S	No	Hayfields, maintained pastures etc. not forests (Burnside and Shepherd 1985).
<b>Longnose darter</b>	<i>Percina nasuta</i>	S	Yes	Does occur in the project area (Robison and Buchanan 1988, Robison 1992). Located on South Fourche La Fave River near Highway 7 bridge (ANHC Records 2010).
<b>Louisiana fatmucket mussel</b>	<i>Lampsilis hydiana</i>	S	Yes	Documented to occur downstream of Lake Winona in the Alum Fork Saline River (Harris and Gordon 1988, Brown and Brown 1989, Burns and McDonnell 1992, Johnston <i>et al.</i> 1993, NatureServe Explorer 2015, Harris <i>et al.</i> 2009, Posey 2009). Lewter <i>et al.</i> (2003) found <i>L. hydiana</i> in South Fourche La Fave River.
Ohio River pigtoe mussel	<i>Pleurobema cordatum</i>	S	No	Range does not include Jessievile-Winona-Fourche Units of District (Harris <i>et al.</i> 1997; Harris <i>et al.</i> 2009).
Ouachita darter	<i>Percina brucethompsoni</i>	S	No	Does not occur in the project area; is only known to occur in the upper Ouachita River drainages (Robison and Buchanan 1988, Robison 1992).
Ouachita madtom (fish)	<i>Noturus lachneri</i>	S	No	Documented above and below Lake Winona in the Alum Fork Saline River and tributaries, but below the Forest Boundary in the Middle Fork Saline (Rickett 1986, Robison and Buchanan 1988, Tatum and Nelson 1989, Bowman 1990, Patton and Zornes 1991, Gagen <i>et al.</i> 1998, ADEQ Web data 2008). Arkansas Endemic (Robison and Allen 1995). Not found in the Arkansas River drainage system.
Ouachita Mountain shiner (fish)	<i>Lythrurus snelsoni</i>	S	No	Range does not include Jessievile-Winona-Fourche Units of District (Robison and Buchanan 1988). Kiamichi, Upper and Lower Little Rivers.
Paleback darter (fish)	<i>Etheostoma pallidorsum</i>	S	No	Range does not include Jessievile-Winona-Fourche Units of District (Robison and Buchanan 1988, Robison 2004). Arkansas Endemic (Robison and Allen 1995). Ouachita River drainages.
Peppered shiner (fish)	<i>Notropis perpallidus</i>	S	No	Known from Ouachita and Saline Rivers. Range does not include Fourche-Jessievile-Winona Unit within the Forest administrative boundary (Robison 2001b, 2006).
<b>Plain pocketbook mussel</b>	<i>Lampsilis cardium</i>	S	Yes	Alum Fork of Saline, South Fourche La Fave and Ouachita Rivers. Does occur on South Fourche LaFave River (Brown and Brown 1989, ANHC Records 2010, NatureServe Explorer 2015).
<b>Purple lilliput pearl mussel</b>	<i>Toxolasma lividum</i>	S	Yes	This species occurs in Alum Fork Saline River (Harris and Gordon 1988, Brown and Brown 1989, Burns and McDonnell 1992, Harris <i>et al.</i> 1997, ANHC Records 2010, NatureServe Explorer 2015).

Common Name	Scientific Name	Status*	Potentially Affected	Notes and Comments
Pyramid pigtoe mussel	<i>Pleurobema rubrum</i>	S	No	Located in Petit Jean River near the Fourche Unit of District (Harris <i>et al.</i> 1997; Harris <i>et al.</i> 2009; ANHC Records 2010).
Rich Mtn. salamander	<i>Plethodon ouachitae</i>	S	No	Range does not include Jessievile-Winona-Fourche Units of District (Trauth and Wilhide 1999, Trauth <i>et al.</i> 2004).
Rich Mtn. slit-mouth snail	<i>Stenotrema pilsbryi</i>	S	No	Range does not include Jessievile-Winona-Fourche Units of District (Robison and Allen 1995).
Sequoyah slimy salamander	<i>Plethodon sequoyah</i>	S	No	Range does not include Jessievile-Winona-Fourche Units of District (Trauth and Wilhide 1999, Trauth <i>et al.</i> 2004).
Southeastern myotis (bat)	<i>Myotis austroriparius</i>	S	No	Current range does not include Jessievile-Winona-Fourche Units of Forest. (Sealander and Heidt 1990, Saugey <i>et al.</i> 1993, Tumilson <i>et al.</i> 2002, Britzke 2003, Southern Research Station datafiles). Historic record of the SE Myotis from an abandoned mine along the Ouachita River in 1953 prior to filling of Lake Ouachita. Caddo-Womble District, Compartment 1603 (Davis <i>et al.</i> 1955).
<b>Southern hickorynut mussel</b>	<i>Obovaria arkansasensis</i>	S	<b>Yes</b>	Documented downstream of Lake Winona in the Alum Fork Saline River (Brown and Brown 1989, Harris <i>et al.</i> 1997, Harris <i>et al.</i> 2009). Known location in Winona Unit in South Fourche La Fave River, approx. 6.5 miles northeast of Highway 7 Bridge (ANHC Records 2010, NatureServe Explorer 2015).
Small-footed myotis (bat)	<i>Myotis leibii</i>	S	No	Suitable habitat in the form of large exposed bluff lines and extensive talus or rock rivers does not occur in PA. Closest record from the Forest is from the Mena area (Saugey <i>et al.</i> 1993).
Western fanshell mussel	<i>Cyprogenia aberti</i>	S	No	Range does not include Jessievile-Winona-Fourche Units of District (ANHC Records 2010, NatureServe Explorer 2015). Is known from Saline and Ouachita Rivers.
<b>FOREST SERVICE SENSITIVE SPECIES - PLANTS</b>				
Arkansas meadow-rue	<i>Thalictrum arkansanum</i>	S	No	Unknown from Jessievile-Winona-Fourche Units of District (Bates 1992a, b, ANHC Records 2010).
<b>Arkansas (Browne's) waterleaf</b>	<i>Hydrophyllum brownei</i>	S	<b>Yes</b>	Documented occurrence in Alum Fork of Saline River corridor below Forest Boundary (Marsico 2006, Witsell 2007a, Robison <i>et al.</i> 2008). Arkansas Endemic (Robison and Allen 1995).
Bush's poppymallow	<i>Callirhoe bushii</i>	S	No	Unknown from Jessievile-Winona-Fourche Units of District and/or Arkansas Units of Forest (USDA-FS 2005a, Appendix C, ANHC Records 2010).
Butternut (tree)	<i>Juglans cinerea</i>	S	No	Unknown from Jessievile-Winona-Fourche Units of District (ANHC Records 2010).
Carolina crownbeard	<i>Verbesina walteri</i>	S	No	Unknown from Jessievile-Winona-Fourche Units of District (Bates 1992a, b, ANHC Records 2010).
Cossatot Leafcup	<i>Polymnia cossatotensis</i>	S	No	Unknown from Jessievile-Winona-Fourche Units of District (Bates 1992a, b, ANHC Records 2010, Robison <i>et al.</i> 2008). Arkansas Endemic (Robison and Allen 1995).
<b>Cumberland sandreed</b>	<i>Calamovilfa arcuata</i>	S	<b>Yes</b>	Known locations near project area; closest occurrence is approx. 4.5 miles northeast of South Fourche La Fave River Bridge in South Fourche La Fave River (ANHC Records 2010). District records elsewhere from riparian areas indicate potential for occurrence (Witsell 2004).

Common Name	Scientific Name	Status*	Potentially Affected	Notes and Comments
Glade larkspur	<i>Delphinium treleasei</i>	S	No	Unknown from Jessieville-Winona-Fourche Units of District (ANHC Records 2010).
Golden-glade cress	<i>Leavenworthia aurea</i>	S	No	Unknown from Jessieville-Winona-Fourche Units (Bates 1992a, b, ANHC Records 2010).
Grave's spleenwort	<i>Asplenium X gravesii</i>	S	No	Unknown from Jessieville-Winona-Fourche Units of District (ANHC Records 2010).
Gulf pipewort	<i>Eriocaulon kornickianum</i>	S	No	Unknown from Jessieville-Winona-Fourche Units of District (ANHC Records 2010).
Maple-leaved oak	<i>Quercus acerifolia</i>	S	No	Unknown from Jessieville-Winona-Fourche Units of District (ANHC Records 2010). Arkansas Endemic (Robison and Allen 1995).
Narrowleaf ironweed	<i>Vernonia lettermannii</i>	S	No	Unknown from Jessieville-Winona Units of District (Bates 1992a, b, ANHC Records 2010).
Moore's delphinium	<i>Delphinium newtonianum</i>	S	No	Unknown from Jessieville-Winona-Fourche Units of District (Hardcastle 2003, ANHC Records 2010, Robison <i>et al.</i> 2008). Arkansas Endemic (Robison and Allen 1995).
Nuttall's cornsalad	<i>Valerianella nuttalli</i>	S	No	A few locations on Jessieville Unit of District associated with shale glades, north of Lake Ouachita in Garland County (Forest Botanist, ANHC Records 2010). Unknown from Project Area (Wilkes 1999).
<b>Openground draba</b>	<i>Draba aprica</i>	S	<b>Yes</b>	Known occurrences in the Jessieville and Winona Units of District in Garland and Saline County (ANHC Records 2010). Closest known location approx. 5.5 miles southeast of Bear Creek Bridge (ANHC Records 2010).
<b>Ouachita false indigo</b>	<i>Amorpha ouachitensis</i>	S	<b>Yes</b>	Witsell (2007b) reported this species within the Alum Fork Saline River riparian corridor downstream from Lake Winona and on private land (Central Arkansas Water) but within the watershed boundary. Known occurrence is 4.5 miles northeast of South Fourche La Fave Bridge in Perry County (ANHC Records 2010).
Ouachita Mtn. Goldenrod	<i>Solidago ouachitensis</i>	S	No	Known distribution does not include JWF District (McElderry and Gentry 2006b, ANHC Records 2010).
<b>Ozark chinquapin</b>	<i>Castanea pumila</i> var. <i>ozarkensis</i>	S	<b>Yes</b>	In project area. Closest known location in Winona Unit, approx. 3 miles northeast of South Fourche La Fave River Bridge (ANHC Records 2010). Damage already occurred if it exists it will re-sprout, as long as herbicide not used.
Ozark least trillium	<i>Trillium pusillum</i> var. <i>ozarkanum</i>	S	No	Unknown from Jessieville-Winona-Fourche Units of District (Bates 1992a, b, ANHC Records 2010, FTN Associates 2007).
Ozark spiderwort	<i>Tradescantia ozarkana</i>	S	No	Unknown from Jessieville-Winona-Fourche Units of District (Bates 1992a, b, ANHC Records 2010).
Palmer's cornsalad	<i>Valerianella palmeri</i>	S	No	Known locations on shale glades on Jessieville Unit in Garland County (Forest Botanist, ANHC Records 2010). Undocumented from project area.
Panicled false indigo	<i>Amorpha paniculata</i>	S	No	Unknown from Jessieville-Winona-Fourche Units of District (ANHC Records 2010).
Pineoak jewelflower	<i>Streptanthus squamiformis</i>	S	No	Unknown from Jessieville-Winona-Fourche Units of District (ANHC Records 2010).

Common Name	Scientific Name	Status*	Potentially Affected	Notes and Comments
Sand grape	<i>Vitis rupestris</i>	S	No	1 location near Steve, AR on private land near Fourche Unit (ANHC Records 2010).
Scott's spleenwort	<i>Asplenium X ebenoides</i>	S	No	Unknown from Jessieville-Winona-Fourche Units of District (ANHC Records 2010).
<b>Shinners' sunflower</b>	<i>Helianthus occidentalis</i> ssp. <i>plantagineus</i>	S	<b>Yes</b>	Several known occurrences on the JWF Units of District near the project area; closest known location is approx. 2 miles downstream from South Fourche La Fave River Bridge (ANHC Records 2010).
Small's woodfern	<i>Dryopteris X australis</i>	S	No	Unknown from Jessieville-Winona-Fourche Units of District (Bates 1992a, b; ANHC Records 2010). Requires "wet", shaded woodlands (Lellinger 1985).
<b>Southern lady's slipper</b>	<i>Cypripedium kentuckiense</i>	S	<b>Yes</b>	In project area. Closest known occurrences approx. 2 ½ miles north of the South Fourche La Fave River Bridge (ANHC Records 2010).
Threadleaf bladderpod	<i>Lesquerella angustifolia</i>	S	No	Unknown from Jessieville-Winona-Fourche Units of District (NatureServe Explorer 2015). Found on the Oklahoma portion of Ouachita National Forest.
<b>Waterfall's sedge</b>	<i>Carex latebracteata</i>	S	<b>Yes</b>	Documented from the Fourche and Jessieville Units of District in Montgomery, Garland and Yell Counties (Bates 1992a, b, McElderry et al. 2006a, ANHC Records 2010), but not near the project area; however, habitat exist. Known from shale outcrops.

**\*Status:****P** = proposed for federal listing as endangered**E** = federal endangered species**T** = federal threatened species**S** = Amended Regional Forester's Sensitive Species List ( 2007)**TSA** = Threatened by Similarity of Appearance to the American crocodile.

## Appendix B VASCULAR PLANT SURVEY

A vascular plant survey was conducted on June 24<sup>th</sup>, 2014 in the Ouachita National Forest near the Bear Creek Bridge and the South Fourche la Fave River Bridge on State Highway 7 by AHTD staff Phillip Moore, Kayti Ewing and Josh Seagraves and US Forest Service botanist, Susan Hooks. A total of 182 species were identified. Fourteen species (8%) are non-native, which were located primarily along the roadside. Non-native species (nn) are noted below. Three species tracked by the ANHC were located in the project area, and no species listed as PETS by the US Forest Service were located in the project area.

### TREES (38 species)

<i>Acer rubrum</i>	red maple
<i>Acer saccharum</i>	sugar maple
<i>Amelanchier arborea</i>	serviceberry
<i>Asimina triloba</i>	pawpaw
<i>Betula nigra</i>	river birch
<i>Carpinus caroliniana</i>	ironwood
<i>Carya cordiformis</i>	bitternut hickory
<i>Carya texana</i>	black hickory
<i>Carya tomentosa</i>	mockernut hickory
<i>Celtis laevigata</i>	sugarberry
<i>Cercis canadensis</i>	redbud
<i>Cornus florida</i>	flowering dogwood
<i>Diospyros virginiana</i>	persimmon
<i>Fraxinus pennsylvanica</i>	green ash
<i>Gleditsia triacanthos</i>	honey locust
<i>Ilex decidua</i>	deciduous holly
<i>Juniperus virginiana</i>	eastern red cedar
<i>Liquidambar styraciflua</i>	sweetgum
<i>Morus rubra</i>	mulberry
<i>Nyssa sylvatica</i>	blackgum
<i>Ostrya virginiana</i>	hop hornbeam
<i>Pinus echinata</i>	shortleaf pine
<i>Platanus occidentalis</i>	sycamore
<i>Prunus serotina</i>	black cherry
<i>Quercus alba</i>	white oak
<i>Quercus falcata</i>	southern red oak
<i>Quercus phellos</i>	willow oak
<i>Quercus rubra</i>	northern red oak
<i>Quercus stellata</i>	post oak
<i>Quercus velutina</i>	black oak
<i>Robinia pseudoacacia</i>	black locust
<i>Salix caroliniana</i>	Carolina willow
<i>Salix nigra</i>	black willow
<i>Sambucus canadensis</i>	elderberry
<i>Sassafras albidum</i>	sassafras
<i>Sideroxylon lanuginosum</i>	gum bully
<i>Tilia americana</i>	basswood
<i>Ulmus alata</i>	winged elm

### SHRUBS (20 species)

<i>Alnus serrulata</i>	hazel alder	
<i>Amorpha fruticosa</i>	bastard indigo	
<i>Amorpha nitens</i>	false indigo	
<i>Callicarpa americana</i>	American beautyberry	
<i>Ceanothus americanus</i>	New Jersey tea	
<i>Cephalanthus occidentalis</i>	buttonbush	
<i>Cornus foemina</i>	stiff dogwood	
<i>Crataegus crus-galli</i>	cockspur hawthorn	
<i>Crataegus marshallii</i>	parsley hawthorn	
<i>Euonymus americanus</i>	bursting-heart	
<i>Hamamelis vernalis</i>	witch hazel	
<i>Hypericum prolificum</i>	shrubby St. John's Wort	
<i>Ligustrum sinense</i>	Chinese privet	nn
<i>Lyonia mariana</i>	stagger bush	
<i>Rhamnus caroliniana</i>	Carolina buckthorn	
<i>Rhus copallina</i>	winged sumac	
<i>Styrax americanus</i>	American snowbell	
<i>Vaccinium arboreum</i>	farkleberry	
<i>Vaccinium pallidum</i>	low-bush blueberry	
<i>Vaccinium stamineum</i>	deerberry	
<i>Yucca glauca</i>	soapweed yucca	

**WOODY VINES and BRAMBLES (13 species)**

<i>Berchemia scandens</i>	rattan vine	
<i>Campsis radicans</i>	trumpet creeper	
<i>Lonicera japonica</i>	Japanese honeysuckle	nn
<i>Parthenocissus quinquefolia</i>	Virginia creeper	
<i>Rubus sp.</i>	blackberry	
<i>Smilax bona-nox</i>	cat brier	
<i>Smilax glauca</i>	glaucous greenbrier	
<i>Toxicodendron radicans</i>	poison ivy	
<i>Trachelospermum difforme</i>	climbing dogbane	
<i>Vitis aestivalis</i>	summer grape	
<i>Vitis cinerea</i>	graybark grape	
<i>Vitis riparia</i>	riverbank grape	
<i>Vitis rotundifolia</i>	muscadine grape	

**DICOT FORBS (79 species)**

<i>Achillea millefolium</i>	common yarrow	
<i>Ambrosia artemisiifolia</i>	common ragweed	
<i>Ambrosia trifida</i>	giant ragweed	
<i>Anemone virginiana</i>	tall anemone	
<i>Antennaria plantaginifolia</i>	pussytoes	
<i>Arisaema dracontium</i>	green dragon	
<i>Aristolochia reticulata</i>	dutchman's pipevine	
<i>Asclepias verticillata</i>	whorled milkweed	
<i>Boehmeria cylindrica</i>	false nettle	
<i>Daucus carota</i>	Queen Anne's lace	nn
<i>Euphorbia corollata</i>	flowering spurge	
<i>Chamaecrista fasciculata</i>	partridge pea	
<i>Clitoria mariana</i>	butterfly-pea	

<i>Cocculus carolinus</i>	Carolina moonseed	
<i>Commelina erecta</i>	whitemouth dayflower	
<i>Conium maculatum</i>	poison hemlock	
<i>Coreopsis grandiflora</i>	largeflower tickseed	
<i>Coreopsis tinctoria</i>	plains coreopsis	
<i>Cunila origanoides</i>	dittany	
<i>Desmodium sp.</i>	tick trefoil	
<i>Desmodium paniculatum</i>	panicked tick trefoil	
<i>Dianthus armeria</i> ssp. <i>armeria</i>	Deptford pink	
<i>Diodia virginiana</i>	Virginia buttonweed	
<i>Dioscorea villosa</i>	wild yam	
<i>Echinacea pallida</i>	pale purple coneflower	
<i>Echinacea purpurea</i>	purple coneflower	
<i>Elephantopus tomentosus</i>	hairy elephant's-foot	
<i>Erigeron sp.</i>	daisy fleabane	
<i>Eryngium yuccifolium</i>	rattlesnake master	
<i>Eutrochium fistulosum</i>	Joe Pye weed	
<i>Geum canadense</i>	white avens	
<i>Gratiola brevifolia</i>	sticky hedge-hyssop	tracked
<i>Helenium amarum</i>	yellow sneezeweed	
<i>Helianthus divaricatus</i>	woodland sunflower	
<i>Helianthus hirsutus</i>	hairy sunflower	
<i>Helianthus mollis</i>	ashy sunflower	
<i>Huechra americana</i>	American alumroot	
<i>Hypericum hypericoides</i>	St. Andrew's cross	
<i>Hypericum perforatum</i>	European St. John's wort	nn
<i>Ipomoea hederacea</i>	ivy leaf morning-glory	
<i>Iris cristata</i>	dwarf crested iris	
<i>Justicia americana</i>	American water-willow	
<i>Lactuca canadensis</i>	Canada lettuce	
<i>Lespedeza cuneata</i>	Sericea lespedeza	nn
<i>Liatris compacta</i>	Ouachita blazing star	tracked
<i>Liatris pycnostachya</i>	prairie blazing star	
<i>Matelea decipiens</i>	climbing milkvine	
<i>Mitchella repens</i>	partridge berry	
<i>Monarda fistulosa</i>	wild bergamot	
<i>Oxalis stricta</i>	yellow woodsorrel	
<i>Passiflora lutea</i>	passionflower vine	
<i>Plantago aristata</i>	largebracted plantain	
<i>Plantago lanceolata</i>	narrowleaf plantain	
<i>Plantago rugelii</i>	blackseed plantain	
<i>Potentilla recta</i>	sulphur cinquefoil	nn
<i>Potentilla simplex</i>	common cinquefoil	
<i>Prenanthes sp.</i>	rattlesnake root	
<i>Prunella vulgaris</i>	self-heal	
<i>Ptilimnium capillaceum</i>	mock bishop's weed	
<i>Pycnanthemum muticum</i>	mountain mint	
<i>Rudbeckia hirta</i>	black-eyed Susan	
<i>Ruellia pedunculata</i>	stalked wild petunia	
<i>Rumex crispus</i>	curly dock	
<i>Salvia lyrata</i>	lyre-leaf sage	
<i>Scutellaria elliptica</i> var. <i>elliptica</i>	hairy skullcap	
<i>Solanum carolinense</i>	Carolina horsenettle	
<i>Solidago caesia</i>	blue-stemmed goldenrod	
<i>Spigelia marilandica</i>	Indian pink	



<i>Teucrium canadense</i>	Canada germander	
<i>Thalictrum thalictroides</i>	rue anemone	
<i>Tragia cordata</i>	heartleaf noseburn	
<i>Trifolium arvense</i>	rabbit's foot clover	nn
<i>Uvularia perfoliata</i>	perfoliate bellwort	tracked
<i>Verbascum blattaria</i>	moth mullein	nn
<i>Verbesina alternifolia</i>	wingstem	
<i>Verbesina helianthoides</i>	yellow crownbeard	
<i>Vernonia baldwinii</i>	Baldwin's ironweed	
<i>Viola sp.</i>	violet	
<i>Xyris torta</i>	yellow-eyed-grass	

**GRASSES AND SEDGES (26 species)**

<i>Arundinaria gigantea</i>	giant cane	
<i>Briza minor</i>	quaking grass	nn
<i>Bromus pubescens</i>	hairy woodland brome	
<i>Carex spp.</i>	sedge	
<i>Chasmanthium latifolium</i>	inland sea oats	
<i>Chasmanthium laxum</i>	slender woodoats	
<i>Cyperus echinatus</i>	globe flatsedge	
<i>Cyperus odoratus</i>	fragrant flatsedge	
<i>Cynodon dactylon</i>	Bermuda grass	nn
<i>Dichanthelium boscii</i>	Bosc's panicgrass	
<i>Dichanthelium dichotomum</i>	cypress panicgrass	
<i>Dichanthelium scoparium</i>	velvet panicgrass	
<i>Elymus canadensis</i>	Canada wildrye	
<i>Elymus virginicus</i>	Virginia wildrye	
<i>Juncus coriaceous</i>	leathery rush	
<i>Juncus effusus</i>	common rush	
<i>Juncus tenuis</i>	poverty rush	
<i>Lolium perenne</i>	perennial ryegrass	nn
<i>Melica nitens</i>	threeflower melic grass	
<i>Microstegium vimineum</i>	Japanese stiltgrass	nn
<i>Panicum sp.</i>	panicgrass	
<i>Piptochaetium avenaceum</i>	black-seed needle grass	
<i>Schedonorus arundinaceus</i>	tall fescue	nn
<i>Schizachyrium scoparium</i>	little bluestem	
<i>Scleria oligantha</i>	littlehead nutrush	
<i>Sorghum halepense</i>	Johnson grass	nn

**FERNS (6 species)**

<i>Asplenium platyneuron</i>	ebony spleenwort
<i>Dryopteris marginalis</i>	marginal shield fern
<i>Onoclea sensibilis</i>	sensitive fern
<i>Osmunda regalis</i> var. <i>spectabilis</i>	royal fern
<i>Pleopeltis polypodioides</i> var. <i>michauxiana</i>	resurrection fern
<i>Polystichum acrosticoides</i>	christmas fern

### Appendix C MUSSEL SURVEY

A mussel survey was conducted on December 16<sup>th</sup> and 30<sup>th</sup> of 2014 in the Ouachita National Forest upstream and downstream of the South Fourche La Fave Bridge on Highway 7. The mussel survey was conducted by AHTD personnel, Ben Thesing. A total of 2 species were found; *Corbicula sp.* on the 16<sup>th</sup> and *Quadrula verrucosa* on the 30<sup>th</sup>. No species listed as PETS by the Forest Service were found during either survey.

Site/Job Number: 080439					
Arkansas Freshwater Bivalves Field Data Sheet					
Date: 12/16/2014 and 12/30/14			Drainage: South Fork Fourche La Fave		
County: Perry			Quad:		
Substrate: Bedrock/Gravel/Boulder/sand			Width:		
Latitude:			Longitude:		
Collectors: B Thesing					
Location: South Fourche La Fave Bridge on Highway 7; 100' upstream from existing bridge to 300' down from new construction					
	12/16/2014	12/30/2014		12/16/2014	12/30/2014
<i>Actinonaias ligamentina</i>			<i>Obovaria arkansasensis</i>		
<i>Alasmidonta marginata</i>			<i>Obovaria olivaria</i>		
<i>Alasmidonta viridis</i>			<i>Plectomerus dombeyanus</i>		
<i>Amblema plicata</i>			<i>Pleurobema cordatum</i>		
<i>Anodonta suborbiculata</i>			<i>Pleurobema riddellii</i>		
<i>Anodontoides ferussacianus</i>			<i>Pleurobema rubrum</i>		
<i>Arcidens confragosus</i>			<i>Pleurobema sintoxia</i>		
<i>Arcidens wheeleri</i>			<i>Potamilus alatus</i>		
<i>Cyclonaias tuberculata</i>			<i>Potamilus capax</i>		
<i>Cyprogenia aberti</i>			<i>Potamilus ohiensis</i>		
<i>Cumberlandia monodonta</i>			<i>Potamilus purpuratus</i>		
<i>Ellipsaria lineolata</i>			<i>Ptychobranthus occidentalis</i>		
<i>Elliptio dilatata</i>			<i>Pyganodon grandis</i>		
<i>Epioblasma curtisii</i>			<i>Quadrula apiculata</i>		
<i>Epioblasma triquetra</i>			<i>Quadrula cylindrica</i>		
<i>Epioblasma turgidula</i>			<i>Quadrula fragosa</i>		
<i>Fusconaia flava</i>			<i>Quadrula metanevra</i>		
<i>Fusconaia ozarkensis</i>			<i>Quadrula nobilis</i>		
<i>Fusconaia sp. cf flava (sampsioniana)</i>			<i>Quadrula nodulata</i>		
<i>Lampsilis abrupta</i>			<i>Quadrula pustulosa</i>		
<i>Lampsilis cardium</i>			<i>Quadrula quadrula</i>		
<i>Lampsilis hydiana</i>			<i>Quadrula verrucosa</i>		1

<i>Lampsilis ornata</i>			<i>Reginaia ebenus</i>		
<i>Lampsilis powellii</i>			<i>Simpsonaias ambigua</i>		
<i>Lampsilis rafinesqueana</i>			<i>Strophitus undulatus</i>		
<i>Lampsilis reeveiana</i>			<i>Toxolasma lividum</i>		
<i>Lampsilis siliquoidea</i>			<i>Toxolasma parvum</i>		
<i>Lampsilis sp. A cf hydiana</i>			<i>Toxolasma texasense</i>		
<i>Lampsilis sp. B cf hydiana</i>			<i>Truncilla donaciformis</i>		
<i>Lampsilis streckeri</i>			<i>Truncilla truncata</i>		
<i>Lampsilis teres</i>			<i>Uniomerus declivis</i>		
<i>Lasmigona costata</i>			<i>Uniomerus tetralasmus</i>		
<i>Lasmigona complanata</i>			<i>Utterbackia imbecillis</i>		
<i>Leptodea fragilis</i>			<i>Venustaconcha ellipsiformis</i>		
<i>Leptodea leptodon</i>			<i>Venustaconcha pleasii</i>		
<i>Ligumia recta</i>			<i>Villosa iris</i>		
<i>Ligumia subrostrata</i>			<i>Villosa lienosa</i>		
<i>Megaloniaias nervosa</i>			<i>Corbicula fluminea</i>	<input type="checkbox"/>	
<i>Obliquaria reflexa</i>			<i>Dreissena polymorpha</i>		
Start Search:			Stop Search:		
Notes: Survey for new bridge construction for project 080439. 12/16/14 consisted of wadable survey with view finders. Only <i>Corbicula</i> was encountered.					
12/30/14 survey consisted of below the main riffle down from the bridge with a Brownie Third Lung Hookah. 12/30/14 dive totaled 1 hour. 1 additional relict shell of a <i>Q. verrucosa</i> was also found.					

## AHTD ENVIRONMENTAL IMPACTS ASSESSMENT FORM

AHTD Job Number 080439 FAP Number STPR-0053(29)

Job Title Bear Creek & So. Fourche La Fave River Strs. & Apprs.

Environmental Impacts	None	Minor	Significant	Comments
Air Quality	X			
Construction Impacts		X		Temporary and minor during construction
Cultural Resources		X		SHPO clearance & bridge MOA enclosed
Economic	X			
Endangered Species		X		See enclosed Biological Evaluation
Energy Resources	X			
Environmental Justice/Title VI	X			
Fish and Wildlife		X		Minor loss of habitat
Floodplains	X			No Special Flood Hazard Areas mapped
Forest Service Property		X		USFS land: 5.2 acres ROW, 0.36 acre TCE
Hazardous Materials/Landfills		X		See below (1)
Land Use Impacts		X		Total: 9 acres ROW, 0.44 acre TCE
Migratory Birds		X		Migratory Bird SP added to contract
Navigation/Coast Guard	X			
Noise Levels	X			
Prime Farmland		X		2.1 acres Farmland of Statewide Importance
Protected Waters				
Public Recreation Lands		X		See below (2)
Public Water Supply/WHPA	X			Wellhead Protection SP added to contract
Relocatees	X			
Section 4(f)/6(f)		X		Programmatic bridge/ <i>de minimis</i> recreation
Social	X			
Underground Storage Tanks	X			
Visual Impacts		X		Temporary and minor during construction
Stream Impacts		X		Total: 1939 linear feet of stream impacts
Water Quality		X		Temporary during construction
Wetlands	X			
Wildlife Refuges	X			

Section 401 Water Quality Certification Required? Yes  
 Short-term Activity Authorization Required? Yes  
 Section 404 Permit Required? Yes Type Individual

Remarks: 1) Lead paint will be disposed of or recycled following ADEQ guidelines. 2) Section 4(f) *de minimis* evaluation for impacts to the South Fourche Campground.

Signature of Evaluator Susan Stafford Date 4/19/2017

Date Submitted: 4/17/2017

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

## ROADWAY DESIGN REQUEST

Job Number 080439 FAP No. CA-STPR-0053(29) County Perry

Job Name Bear Creek & So. Fourche La Fave River Strs. & Apprs. (S)

Design Engineer Brooke Perkins Environmental Staff \_\_\_\_\_

Brief Project Description Replace Bridges over Bear Creek and So. Fourche La Fave Rivers

A. Existing Conditions:

1. Roadway Width:	Metric: _____	English: <u>20'</u>
2. Shoulder Width:	Metric: _____	English: <u>1'</u>
3. Number of Lanes and Width:	Metric: _____	English: <u>2 – 10'</u>
4. Existing Right-of-Way:	Metric: _____	English: <u>Avg. 110'</u>

B. Proposed Conditions:

1. Roadway Width:	Metric: _____	English: <u>22'</u>
2. Shoulder Width:	Metric: _____	English: <u>6'</u>
3. Number of Lanes and Width:	Metric: _____	English: <u>2 – 11'</u>
4. Average Right-of-Way:	Metric: _____	English: <u>155'</u>

C. Construction Information:

If detour: Where: \_\_\_\_\_ Length: Metric: \_\_\_\_\_ English: \_\_\_\_\_

D. Design Data:

County: Perry 2017 ADT: 1100 2037 ADT: 1300 Trucks: 10%

Design Speed: \_\_\_\_\_ km/h 55 m.p.h.

E. Approximate total length of project: \_\_\_\_\_ kilometer(s) 0.934 mile(s)

F. Justification for proposed improvements: Functionally Obsolete

G. Total Relocates: 0 Residences: 0 Businesses: 0

H. Have you coordinated with any of the following: (provide name and date)

City and/or County Officials: \_\_\_\_\_

State Agency: \_\_\_\_\_

Federal Agency: U.S. Forest Service (March 15, 2016)

**BRIDGE INFORMATION - PRELIMINARY**

Job Number: 080439 FAP Number: LS50-0053-029 County: Perry

Job Name: Bear Creek & So. Fourche La Fave River Strs. & Apprs. (S)

Design Engineer: Jeff Covay Environmental Staff: Josh Seagraves/Kayti Ewing

**A. Description of Existing Bridge:**

1. Bridge Number 01721 over Bear Creek
2. Location: Rte.: SH7 Section: 11 Log Mile: 7.09
3. Length: 304' Br., plus 40' embkt. Br. Rdwy.Width: 20 ft Deck Width(Out-to-Out): 21.6 ft.
4. Type Construction: Two 90' pony truss spans; Four 30' RCDG spans
5. Deficiencies: Posted for load; Floorbeam deterioration; Narrow Roadway Width
6. HBRRP Eligibility: Qualif. Code: FO Sufficiency Rating: 41.2

**B. Proposed Improvements:**

1. Length: 422.56 ft Br. Rdwy. Width: 34 ft Deck Width (Out-to-Out): 37.17 ft
2. Travel Lanes: Two 11 ft. Lanes
3. Shoulder Width: 6' Shoulders
4. Sidewalks? No

**C. Construction Information:**

1. Location in relation to existing bridge: Varies from 100' to 180' downstream
2. Superstructure Type: 420'-0" Cont. W-beam Unit
3. Span Lengths: (75-90-90-90-75)
4. Substructure Type: Drilled Shafts
5. Ordinary High Water Elev. (OHW): 532 No. of Bents inside OHW Contours: 2
6. Concrete Vol. below OHW: 0 yd3 Vol. Bent Excavation: 0 yd3 Vol. Backfill 0 yd3
7. Is Channel Excavation Required? No Surface Area: 0 ft2 Volume: 0 yd3
8. Is Fill below OHW Req'd.? No Surface Area: 0 ft2 Volume: 0 yd3
9. Is Riprap below OHW required? No Volume: 0 yd3

**D. Work Road Information:**

1. Is Work Road(s) required? Yes Location: TBD Top Width: 25 (prelim) ft
2. Is Fill below OHW required? Yes Surface Area: TBD ft2 Volume TBD yd3
3. Are Pipes required to meet Backwater Criteria? TBD Waterway Opening: TBD ft2

**E. Detour Information:**

1. Is a detour bridge required? No Location in relation to Existing Br.: -
2. Length: - ft Br. Rdwy. Width: - ft Deck Elevation: -
3. Volume of Fill below OHW: - yd3 Surface Area: - ft2

**F. Coordination with Outside Agencies** (e.g., FHWA, City, County, C of E, USCG):

Has Bridge Division coordinated with any outside agencies? No

Agency	Person Contacted	Date

Date Submitted to Environmental Division: Aug. 31, 2016  
**BRIDGE INFORMATION - PRELIMINARY**

Job Number: 080439 FAP Number: LS50-0053-029 County: Perry  
 Job Name: Bear Creek & So. Fourche La Fave River Strs. & Apprs. (S)  
 Design Engineer: Jeff Covay Environmental Staff: Josh Seagraves/ Kayti Ewing

**A. Description of Existing Bridge:**

1. Bridge Number 01720 over South Fourche La Fave River
2. Location: Rte.: SH7 Section: 11 Log Mile: 9.04
3. Length: 485 ft Br. Rdwy. Width: 20 ft Deck Width (Out-to-Out): 21.7 ft
4. Type Construction: Two 100' Pony Truss Spans, and Seven 40' RCDG spans on 24 deg. skew
5. Deficiencies: Truss Floorbeam deterioration; Delaminated concrete; Narrow rdwy width
6. HBRRP Eligibility: Qualif. Code: FO Sufficiency Rating: 49.8

**B. Proposed Improvements:**

1. Length: 498.55 ft Br. Rdwy. Width: 34 ft Deck Width (Out-to-Out): 37.17 ft
2. Travel Lanes: Two 11 ft. Lanes
3. Shoulder Width: 6' Shoulders
4. Sidewalks? No

**C. Construction Information:**

1. Location in relation to existing bridge: Approx. 50' Downstream
2. Superstructure Type: Two 248'-0" Cont. W-Beam Units
3. Span Lengths: (77-94-77), and (77-94-77)
4. Substructure Type: Drilled Shafts
5. Ordinary High Water Elev. (OHW): 470 No. of Bents inside OHW Contours: 2
6. Concrete Vol. below OHW: 25 yd3 Vol. Bent Excavation: 25 yd3 Vol. Backfill 0 yd3
7. Is Channel Excavation Required? No Surface Area: 0 ft2 Volume 0 yd3
9. Is Riprap required? None below OHW Volume: 0 yd3

**D. Work Road Information:**

1. Is Work Road(s) required? Yes Location: TBD Top Width: TBD ft
2. Is Fill below OHW required? No Surface Area: 0 ft2 Volume 0 yd3
3. Are Pipes required to meet Backwater Criteria? TBD Waterway Opening: TBD ft2

**E. Detour Information:**

1. Is a detour bridge required? No Location in relation to Existing Br.:
2. Length: - ft Br. Rdwy. Width: - ft Deck Elevation: -
3. Volume of Fill below OHW: - yd3 Surface Area: - ft2

**F. Coordination with Outside Agencies** (e.g., FHWA, City, County, C of E, USCG):

Has Bridge Division coordinated with any outside agencies? No

Agency	Person Contacted	Date