

TIER 3 CATEGORICAL EXCLUSION

**ARDOT JOB NUMBER 090623
FAP NUMBER ER-0044 (37)
HWY. 295 SLIDE REPAIRS (MADISON CO.) (S)
ROUTE 295, SECTION 0
MADISON COUNTY**

Submitted Pursuant to 42 U.S.C. 4332(2)

By the

U.S. Department of Transportation

Federal Highway Administration

And the

Arkansas Department of Transportation

October 2020

October 28, 2020

Date of Approval

Randal Looney

Randal Looney
Environmental Coordinator
Federal Highway Administration

The Environmental Division reviewed the referenced project and has determined it falls within the definition of the Tier 3 Categorical Exclusion as defined by the ARDOT/FHWA Programmatic 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 stabilize a two areas along Highway 295 in Madison County. Landslides have occurred at these locations and stabilization efforts will prevent additional road damage. Total length of the project is 0.18 mile. A project location map is attached.

Stabilization efforts will include rock buttress and fill to secure the slopes, concrete ditch paving along with curb and gutter to direct rainwater, and an asphalt overlay for the entire length of the project. In addition, two pipe culverts and one drop inlet will be replaced. No new permanent right of way will be required; however, approximately 1.0 acre of temporary construction easement will be required for the completion of this project. The U.S. Forest Service (USFS) Ozark-St. Francis National Forests, a cooperating agency on the proposed project, owns approximately 0.5 acre of the land that will require a temporary construction easement. Native vegetation will be planted on all federal property.

There are no relocations, environmental justice issues, floodplains, prime farmland, noise increases, wellhead protection areas/public water supplies, or cultural resources associated with this project. State Historic Preservation Officer clearance is attached. Field inspections found no evidence of existing underground storage tanks or hazardous waste deposits.

Based on the ARDOT noise policy, a noise analysis is not required for this project. The slide repair will not involve adding capacity, substantially changing the roadway alignment, or exposing noise sensitive land uses to traffic noise sources. In compliance with federal guidelines, local authorities will not require notification.

The official species list obtained through US Fish and Wildlife Service's (USFWS) Information for Planning and Consultation website identifies the following federally listed species as having the potential to occur in the project area: gray bat (*Myotis grisescens*), Indiana bat (IBAT; *Myotis sodalis*), and Ozark big-eared bat (*Corynorhinus townsendii ingens*), and the Red Knot (*Calidris canutus rufa*), Piping Plover (*Charadrius melodus*), northern long-eared bat (NLEB; *Myotis septentrionalis*), and Missouri bladderpod (*Physaria filiformis*).

Although the project is in a karst region, there are no known caves in the area, and no nearby records of gray bats, so it has been determined that the project "may affect, but is not likely to adversely affect" the gray bat and Ozark big-eared bat. Due to the lack of riverine gravel bars, marshes, glades, or suitable wetland habitat

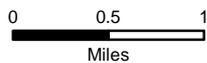
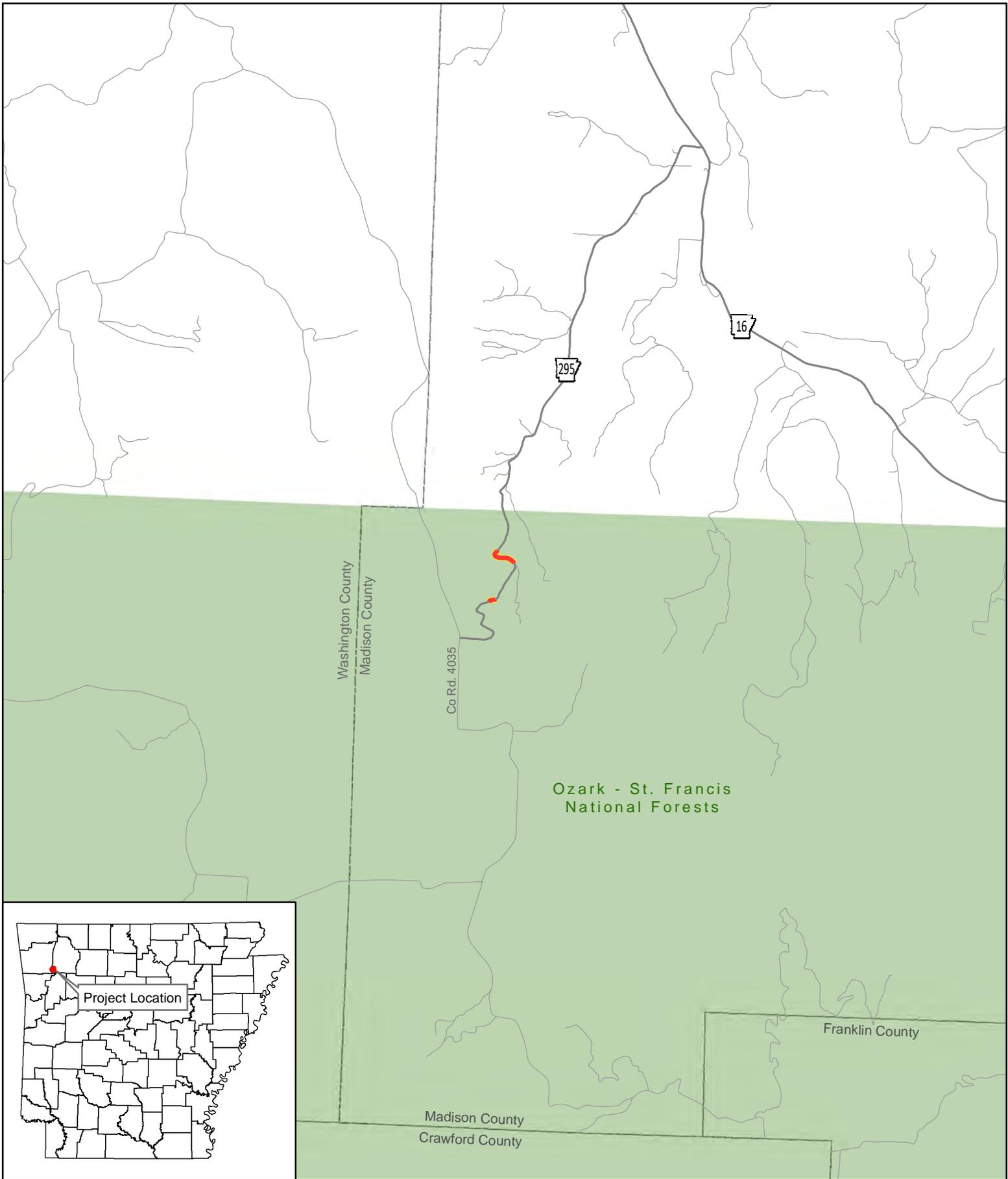
in the project area, it has been determined that the project will have “no effect” on the listed bird and plant species.

Utilizing the Programmatic Biological Opinion for Transportation Projects within the range of the IBAT and NLEB, it has been determined that the project "may affect, and is likely to adversely affect" the IBAT and NLEB due to the removal of an estimated 0.75 acre of trees, including 0.1 acre between 100 and 300 feet from the existing roadway. Tree clearing will be restricted to occur during the inactive season, November 15 to March 15, and ARDOT will contribute \$916 to the previously approved Indiana Bat Spring Migration Research Project. The USFWS Species List, Coordination Letter, and an USFS Informal Biological Evaluation are attached.

Permanent stream impacts to an unnamed intermittent stream are estimated at 80 feet and less than 0.1 acre. Construction of the proposed project should be allowed under the terms of a Nationwide 14 Section 404 Permit for Linear Transportation Projects as defined in the Federal Register 82(4):1860-2008. A preconstruction notification is not required.

This project has been determined to generate minimal air quality impacts for Clean Air Act criteria pollutants and has not been linked with any special mobile source air toxic concerns.

No other adverse environmental impacts were identified. The checklist used to verify consideration of potential environmental impacts is attached.



ARDOT - Environmental GIS - Strawn
October 23, 2020

Job 090623
Hwy. 295 Slide Repairs
Madison County



Brown, Caitlin M.

From: Eric Mills <Eric.Mills@arkansas.gov>
Sent: Thursday, October 8, 2020 1:25 PM
To: Environmental Clearance
Cc: Looney, Randal
Subject: AHPP 106813 - FHWA / ARDOT 090623 / Hwy. 295 Slide Repairs, Madison County

CAUTION: This email originated from outside of ARDOT. Do not click links or open attachments unless you recognize the sender and know the content is safe.

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

Dear Mr. Fleming:

The staff of the Arkansas Historic Preservation Program (AHPP) reviewed the Project Identification Form (PIF) for the proposed undertaking in Madison County. As described, the undertaking entails repairing two slide locations on Highway 295, north of Brannon in Madison County. The repairs will require a total of approximately 1 acre of temporary construction easement. Most work will be within existing right-of-way.

Based on the provided information and the negative results of the field investigation, the AHPP concurs with a finding of **no historic properties affected pursuant to 36 CFR 800.4(d)(1)** for the proposed undertaking.

Thank you for the opportunity to review this undertaking and PIF. Please contact me if you have any questions or comments.

Sincerely,

Eric

ERIC R. MILLS
Archeologist/Section 106 Manager

Division of Arkansas Heritage
1100 North Street
Little Rock, AR 72201
eric.mills@arkansas.gov
p: 501.324.9784 | f: 501.324.9184

ArkansasHeritage.com





IN REPLY REFER TO:

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Arkansas Ecological Service Field Office
110 South Amity Road, Suite 300
Conway, Arkansas 72032



October 8, 2020

Mr. John Fleming
c/o Joseph Ledvina
Arkansas Department of Transportation
10324 Interstate 30
Little Rock, Arkansas 72209

Consultation Code: 04ER1000-2020-R-1485

RE: ARDOT job 090623 – Highway 295 Slide Repairs

Dear Mr. Fleming:

The U.S. Fish and Wildlife Service (Service) has reviewed your assessment and determinations for Arkansas Department of Transportation (ARDOT) job # 090623 - Hwy. 295 Slide Repairs (Madison Co.) (S) project proposal to repair two slides along Hwy. 295 in Madison County, Arkansas. This action may rely on the revised February 5, 2018, Programmatic Biological Opinion (BO) for federally funded or approved transportation projects that may affect the Indiana Bat (IBAT) (*Myotis sodalis*) and/or Northern Long-eared Bat (NLEB) (*Myotis septentrionalis*). We received your request and the associated Project Submittal Form on September 8, 2020. This letter provides the Service's response as to whether the Project may rely on the BO to comply with Section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) for its effects to the IBAT and/or NLEB.

ARDOT proposes to repair two slides on Highway 295 in Madison County. The southern slide is in a limited area above the roadway, with less than 0.25 acres of tree clearing required. The northern slide is below the roadway and will require a large rock buttress and the clearing of approximately 0.5 acres of trees, including 0.1 acres greater than 100 feet from the existing roadway. Tree clearing will be restricted to occur between November 15 and March 15, outside of the bat active season. The northern slide is on Ozark St. Francis National Forest property. Due to the size of the project, only a brief biological evaluation was necessary.

Seven threatened or endangered species are listed by IPaC for this area: Gray Bat (*Myotis grisescens*), Indiana Bat (*Myotis sodalis*), Northern Long-eared Bat (*Myotis septentrionalis*), Ozark Big-eared Bat (*Corynorhinus (=Plecotus) townsendii ingens*), Piping Plover, (*Charadrius melodus*), Red Knot (*Calidris canutus rufa*), and Missouri Bladderpod (*Physaria filiformis*). The Arkansas Dkey resulted in determinations of "may affect, not likely to adversely affect" for Gray and Ozark Big-eared bats and Missouri Bladderpod, and "no effect" for the listed birds.

Due to the small amount of tree clearing greater than 100 feet from the existing roadway, a determination of "may affect, likely to adversely affect" was reached for the Indiana and Northern Long-eared bats (LAA consistency letter). To compensate for clearing approximately

1.4 acres of trees in suitable habitat, a deduction of \$916 will be made from the previously approved Indiana Bat tracking research project. ARDOT requested your concurrence with that determination.

Conclusion

The Service concurs with the NLAA determination(s) for the species listed above. Your agency has met consultation requirements by informing the Service of the “no effect” determinations. No further consultation for this project is required for these species. The consistency letter confirmed you may rely on effect determinations provided in the Arkansas Determination Key for project review and guidance for federally listed species to satisfy agency consultation requirements under Section 7(a)(2) of the Endangered Species Act of 1973 (87 Stat. 884, as amended 16 U.S.C. 1531 et seq.; ESA).

The Service has reviewed the effects of the proposed Project, which includes the ARDOT’s commitment to implement any applicable mitigation measures, as indicated on the Project Submittal Form. We confirm that the proposed Project’s effects are consistent with those analyzed in the BO. The Service has determined that projects consistent with the conservation measures and scope of the program analyzed in the BO are not likely to jeopardize the continued existence of the IBAT and/or the NLEB. In coordination with your agency and the other sponsoring federal transportation agencies, the Service will re-evaluate this conclusion annually in-light-of any new pertinent information under the adaptive management provisions of the BO.

Incidental Take: Indiana Bat

The Service anticipates that tree removal associated with the proposed Project will cause incidental take of IBATs. As described in the Incidental Take Statement (ITS) of the BO, such taking will be difficult to detect. The Service determined that it is appropriate to measure the amount or extent of incidental taking resulting from BO projects using the proposed acreage of tree removal from IBAT suitable habitat as a surrogate for the numbers of individuals taken.

The proposed Project will remove 1.4 acres of trees from habitat that is suitable for the IBAT. All tree removal will occur outside of the active season and will comply with all other conservation measures in the BO. Based on the BO, 0.0 acres are anticipated to not result in adverse effects, and 0.5 acres are anticipated to result in adverse effects.

The ARDOT uses the mitigation ratio of 1.5 for each habitat type from Table 3 of the BO¹ to calculate the compensatory mitigation required to offset these adverse impacts for a total of 0.2² acres of trees that is suitable for the IBAT. Mitigation will be provided in the form of a deduction of \$916 from the previously approved IBAT tracking research project to compensate for adverse impacts to the IBAT associated with this project.

Based on the mitigation identified above² and the information provided in Table 2 of Exhibit E in the In Lieu Fee (ILF) Instrument¹, the federal transportation agency will deduct \$916 from the previously approved IBAT tracking research funding account prior to the start of construction in order to comply with the mitigation requirements of the program of transportation projects reviewed in the BO. These calculations are based on the 2020 Land Use Values in Table 2 of Exhibit E in TCF's ILF Instrument, which are applicable, even if the project construction should occur in a different calendar year.

The Service will add the acreage of Project-related tree removal to the annual total acreage attributed to the BO as a surrogate measure of IBAT take and exempted from the prohibitions against incidental taking. Such exemption is effective, as long as your agency implements the reasonable and prudent measure (RPM) and accompanying terms and conditions of the BO's ITS.

The sole RPM of the BO's ITS requires the federal transportation agencies to ensure that state/local transportation agencies, who choose to include eligible projects under the programmatic action, incorporate all applicable conservation measures in the project proposals submitted to the Service for ESA section 7 compliance using the BO. The implementing terms and conditions for this RPM require the federal transportation agencies to offer training to appropriate personnel about using the BO, and about promptly reporting sick, injured, or dead bats (regardless of species) (or any other federally listed species) located in project action areas.

Northern Long-eared Bat

The Service anticipates that tree removal associated with the proposed Project will cause incidental take of NLEBs. However, the Project is consistent with the BO, and such projects will not cause take of NLEB that is prohibited under the ESA section 4(d) rule for this species (50 CFR §17.40(o)). Therefore, the take of NLEBs resulting from this project does not require exemption from the Service.

Reporting Dead or Injured Bats

The Arkansas Department of Transportation, its state/local cooperators, and any contractors must take care when handling dead or injured IBATs and/or NLEBs, or any other federally listed species that are found at the Project site to preserve biological material in the best possible condition and to protect the handler from exposure to diseases, such as rabies. Project personnel are responsible for ensuring that any evidence about determining the cause of death or injury is not unnecessarily disturbed. Reporting the discovery of dead or injured listed species is required in all cases to enable the Service to determine whether the level of incidental take exempted by this BO is exceeded, and to ensure that the terms and conditions are appropriate and effective.

¹ https://www.fws.gov/midwest/endangered/section7/fhwa/pdf/IBAT_ILF_ratios_transportation_agencies.pdf

² XX acres * XX ratio

³ https://www.fws.gov/midwest/endangered/section7/fhwa/pdf/IBAT_ExhibitE_Table2_FeeSchedule_LandValues.pdf

Parties finding a dead, injured, or sick specimen of any endangered or threatened species must promptly notify this Service office.

Reinitiation Notice

This letter concludes consultation for the proposed Project, which qualifies for inclusion in the BO issued to the federal transportation agencies. To maintain this inclusion, a reinitiation of this Project-level consultation is required where the Arkansas Department of Transportation's discretionary involvement or control over the Project has been retained (or is authorized by law) and if:

1. the amount or extent of incidental take of IBAT is exceeded;
2. new information reveals that the Project may affect listed species or critical habitat in a manner or to an extent not considered in the BO;
3. the Project is subsequently modified in a manner that causes an effect to listed species or designated critical habitat not considered in the BO; or
4. a new species is listed or critical habitat designated that the Project may affect.

Per condition #1 above, the anticipated incidental take is exceeded when:

- the Project removes trees from more than 1.4 acres of habitat suitable for the IBAT.

In instances where the amount or extent of incidental take is exceeded, the Federal Highway Administration/Arkansas Department of Transportation is required to immediately request a reinitiation of formal consultation. Please note that the Service cannot exempt from the applicable ESA prohibitions any Action-caused take that exceeds the amount or extent specified in the ITS of this BO that may occur before the reinitiated consultation is concluded.

We appreciate your continued efforts to ensure that this Project is fully consistent with all applicable provisions of the BO. If you have any questions regarding our response or if you need additional information, please contact Lindsey Lewis at (501) 513-4489 or lindsey_lewis@fws.gov.

Sincerely,



Melvin L. Tobin
Field Supervisor

cc: Project File
Read File
Filename: C:\Users\lilewis\Documents\PROJECTS\FY2021\ARDOT\ArDOT job 090623 – Highway 295 Slide Repairs\ArDOT job 090623 - Comments.docx



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Arkansas Ecological Services Field Office
110 South Amity Suite 300
Conway, AR 72032-8975
Phone: (501) 513-4470 Fax: (501) 513-4480
<http://www.fws.gov/arkansas-es>

In Reply Refer To:

September 22, 2020

Consultation Code: 04ER1000-2020-SLI-1485

Event Code: 04ER1000-2020-E-03850

Project Name: ArDOT Job #090623 - Hwy. 295 Slide Repairs (Madison Co.) (S)

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies endangered, threatened, proposed, and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). **This letter only provides an official species list and technical assistance; if you determine that listed species and/or designated critical habitat may be affected in any way by the proposed project, even if the effect is wholly beneficial, consultation with the Service will be necessary.**

If you determine that this project will have no effect on listed species and their habitat in any way, then you have completed Section 7 consultation with the Service and may use this letter in your project file or application.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found on our website.

Please visit our website at <http://www.fws.gov/arkansas-es/IPaC/home.html> for species-specific guidance to avoid and minimize adverse effects to federally endangered,

threatened, proposed, and candidate species. Our web site also contains additional information on species life history and habitat requirements that may be useful in project planning.

If your project involves in-stream construction activities, oil and natural gas infrastructure, road construction, transmission lines, or communication towers, please review our project specific guidance at <http://www.fws.gov/arkansas-es/IPaC/ProjSpec.html>.

The karst region of Arkansas is a unique region that covers the **northern third of Arkansas** and we have specific guidance to conserve sensitive cave-obligate and bat species. **Please visit <http://www.fws.gov/arkansas-es/IPaC/Karst.html> to determine if your project occurs in the karst region and to view karst specific-guidance.** Proper implementation and maintenance of best management practices specified in these guidance documents is necessary to avoid adverse effects to federally protected species and often avoids the more lengthy formal consultation process.

If your species list includes any mussels, Northern Long-eared Bat, Indiana Bat, Yellowcheek Darter, Red-cockaded Woodpecker, or American Burying Beetle, your project may require a presence/absence and/or habitat survey prior to commencing project activities. Please check the appropriate species-specific guidance on our website to determine if your project requires a survey. We strongly recommend that you contact the appropriate staff species lead biologist (see office directory or species page) prior to conducting presence/absence surveys to ensure the appropriate level of effort and methodology.

Under the ESA, it is the responsibility of the Federal action agency or its designated representative to determine if a proposed action "may affect" endangered, threatened, or proposed species, or designated critical habitat, and if so, to consult with the Service further. Similarly, it is the responsibility of the Federal action agency or project proponent, not the Service, to make "no effect" determinations. If you determine that your proposed action will have "no effect" on threatened or endangered species or their respective critical habitat, you do not need to seek concurrence with the Service. Nevertheless, it is a violation of Federal law to harm or harass any federally-listed threatened or endangered fish or wildlife species without the appropriate permit.

Through the consultation process, we will analyze information contained in a biological assessment that you provide. If your proposed action is associated with Federal funding or permitting, consultation will occur with the Federal agency under section 7(a)(2) of the ESA. Otherwise, an incidental take permit pursuant to section 10(a)(1)(B) of the ESA (also known as a habitat conservation plan) is necessary to harm or harass federally listed threatened or endangered fish or wildlife species. In either case, there is no mechanism for authorizing incidental take "after-the-fact." For more information regarding formal consultation and HCPs, please see the Service's Consultation Handbook and Habitat Conservation Plans at www.fws.gov/endangered/esa-library/index.html#consultations.

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to

federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, **the accuracy of this species list should be verified after 90 days.** This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. **Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.**

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Arkansas Ecological Services Field Office

110 South Amity Suite 300

Conway, AR 72032-8975

(501) 513-4470

Project Summary

Consultation Code: 04ER1000-2020-SLI-1485

Event Code: 04ER1000-2020-E-03850

Project Name: ArDOT Job #090623 - Hwy. 295 Slide Repairs (Madison Co.) (S)

Project Type: TRANSPORTATION

Project Description: Repairing one above-the-road slide and one below-the-road slide on Highway 295 in Madison County.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/35.82247429192637N93.94164466712147W>



Counties: Madison, AR

Endangered Species Act Species

There is a total of 8 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Gray Bat <i>Myotis grisescens</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6329	Endangered
Indiana Bat <i>Myotis sodalis</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened
Ozark Big-eared Bat <i>Corynorhinus (=Plecotus) townsendii ingens</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7245	Endangered

Birds

NAME	STATUS
Eastern Black Rail <i>Laterallus jamaicensis ssp. jamaicensis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10477	Proposed Threatened
Piping Plover <i>Charadrius melodus</i> Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Red Knot <i>Calidris canutus rufa</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened

Flowering Plants

NAME	STATUS
Missouri Bladderpod <i>Physaria filiformis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5361	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

**Effects Determinations, Species Evaluated and Species Considered, and
Vascular Plant Survey Results**

for

Activities Related to

Job Number 090623

Hwy. 295 Slide Repairs (Madison Co.) (S)

Ozark-St. Francis National Forest

Boston Mountain Ranger District

Madison County, Arkansas

by

Joe Ledvina

Arkansas Department of Transportation

joseph.ledvina@ardot.gov

September 2020

ArDOT proposes to repair two slides on Highway 295 in Madison County. The northern slide ("Location 2") is on Forest Service land. The surface of the roadway slid downhill in a section that includes a pipe culvert with a drop inlet. A larger pipe culvert that carries an intermittent stream is also sliding, such that the bottom of the culvert has been ruptured by differential movement below (see enclosed "project information" document for maps and photos). The purpose of this document is to evaluate the biological impacts of the proposed plans (see enclosed plans) at Location 2. These plans include replacing the two pipe culverts and the bedding material below them, installing a rock buttress on the slope below the roadway, and completing pavement of the ditch on the uphill side to reduce the amount of water passing under the roadway. The rock buttress will require a temporary construction easement along approximately 220 feet of the road, from the edge of the right of way to 130 feet from the centerline. A total of approximately 0.6 acres of trees will be cleared.

Four federally-listed bat species may occur in the project area, including the endangered gray bat (*Myotis grisescens*), Indiana bat (*Myotis sodalis*), and Ozark big-eared bat (*Corynorhinus townsendii ingens*) and the threatened northern long-eared bat (*Myotis septentrionalis*) (see Appendix B and the enclosed USFWS species list). Tree clearing will be restricted to occur during the inactive season, between November 15 and March 15, to avoid direct impacts on bats. There are no known caves in the project area. A cave discovery special provision will be included in the contract to specify that if a cave is discovered or suspected, work must stop immediately pending evaluation by appropriate regional cave experts. With these minimization and avoidance measures in place, a determination of "**may affect, not likely to adversely affect**" was reached for the gray bat and Ozark big-eared bat (see the enclosed MA consistency letter). Under the Programmatic Biological Opinion for transportation projects, a determination of "**may affect, likely to adversely affect**" was reached for the Indiana and northern long-eared bats, due to the very small amount of tree clearing (approximately 0.1 acres) that will occur beyond 100 feet from the existing roadway (see the enclosed LAA consistency letter). To compensate for clearing that 0.1 acres and also approximately 0.65 acres of trees within 100 feet of the existing roadway, a deduction of \$916 will be made from the previously approved ArDOT Indiana bat tracking research project (see the enclosed spreadsheet).

The USFWS IPaC tool listed three migratory birds, Eastern Black Rail (*Laterallus jamaicensis ssp. jamaicensis*), Red Knot (*Calidris canutus rufa*), and Piping Plover (*Charadrius melodus*), and one plant, Missouri bladderpod (*Physaria filiformis*) as having the potential to occur in the project area (see the enclosed USFWS species list). A determination of "**no effect**" was reached for the migratory birds due to the lack of marsh habitat or large rivers with sand or mud flats. A determination of "**may affect, not likely to adversely affect**" was reached for the Missouri bladderpod under the Arkansas Dkey, due to the lack of glade habitat in the project area (see the enclosed MA consistency letter).

Four Ozark St. Francis National Forest sensitive species have the potential to occur in the project area (Appendix A and B). These are evaluated below.

The two bats -- the eastern small-footed bat (*Myotis leibii*) and the tricolored bat (*Perimyotis subflavus*) -- will benefit from the same minimization and avoidance features as the federally-listed bats, above, for a determination of "**may impact individuals but not likely to cause a trend to federal listing or loss of viability**".

The monarch butterfly (*Danaus plexippus*) may occur in the early-successional habitat in the project area. Work is scheduled to begin in early 2021 and is expected to be completed before monarchs arrive in late spring, so no direct effects are expected. Some early successional habitat may be temporarily diminished, but nectar resources should not be affected long-term, so "**no impact**" is expected.

Williams' crayfish (*Orconectes williamsi*) occurs in high-gradient headwater streams in the Upper White River basin (Wagner et al 2009), which includes the project area. The larger culvert to be replaced is in a headwater stream, classified as intermittent in the National Hydrography Dataset (USGS 2019). Though this species occurs in high-gradient, headwater streams, it primarily occupies small perennial streams, of a higher stream order than the intermittent stream in question (ADEQ 2019, ANHC 2018, Wagner et al 2009). The culvert replacement will affect a very limited stretch of this stream: the existing pipe culvert is 71 feet long, and the length of stream to be impacted is estimated at less than 80 feet. Appropriate sediment control BMPs will be employed to minimize the amount of sedimentation occurring downstream. Moreover, if Williams' crayfish does occur there, the impacts to the population from the culvert replacement will be less severe than the impacts to the population if the culvert and roadway were allowed to fail completely. Due to the marginal habitat suitability and the limited length of stream to be impacted, a determination of "**may impact individuals but not likely to cause a trend to federal listing or loss of viability**" is reached for Williams' crayfish.

APPENDIX A: SUMMARY OF EFFECTS DETERMINATIONS

Common Name	Scientific Name	Mitigation and Avoidance Measures	Determination
FEDERALLY ENDANGERED and THREATENED SPECIES			
Gray Bat	<i>Myotis grisescens</i>	Tree clearing will be restricted to occur between November 15 and March 15. No caves are known from the project area. If a cave is discovered, work will stop immediately and the cave will be evaluated by approved personnel.	May affect, not likely to adversely affect
Indiana bat	<i>Myotis sodalis</i>		May affect, likely to adversely affect
Northern long-eared bat	<i>Myotis septentrionalis</i>		May affect, likely to adversely affect
Ozark Big-eared Bat	<i>Corynorhinus townsendii ingens</i>		May affect, not likely to adversely affect
FOREST SERVICE SENSITIVE SPECIES			
Eastern small-footed bat	<i>Myotis leibii</i>	Tree clearing will be restricted to occur between November 15 and March 15. No caves are known from the project area. If a cave is discovered, work will stop immediately and the cave will be evaluated by approved personnel.	May impact individuals but not likely to cause a trend to federal listing or loss of viability
Tricolored bat	<i>Perimyotis subflavus</i>		May impact individuals but not likely to cause a trend to federal listing or loss of viability
Monarch butterfly	<i>Danaus plexippus</i>	Work will likely be completed before individuals arrive during the 2021 spring migration.	No impact
Williams' crayfish	<i>Orconectes (Faxonius) williamsi</i>	Appropriate sedimentation BMPs will be employed to minimize sedimentation downstream.	May impact individuals but not likely to cause a trend to federal listing or loss of viability

APPENDIX B: REGIONAL FORESTER’S SENSITIVE SPECIES LIST.

Species evaluated and species considered.

Survey Needs Based on FSM 2672.43(USDA FS 2005c)

**Proposed, Endangered, Threatened, and Sensitive Species List
(Ozark Portion of the Ozark-St. Francis National Forest Only)**

Common Name	Scientific Name	Status*	Potentially Affected	Notes and Comments
FEDERALLY ENDANGERED and THREATENED SPECIES				
American burying beetle	<i>Nicrophorus americanus</i>	E	No	Occurrence is not expected; project area lies outside designated American Burying Beetle Consultation Area (USFWS 2012).
Cave Crayfish	<i>Cambarus aculabrum</i>	E	No	Does not occur on the Boston Mountain Ranger District. Known occurrences are located in two caves in Benton County, Arkansas (NatureServe 2020).
Gray Bat	<i>Myotis grisescens</i>	E	Yes	Known to occur on the Boston Mountain Ranger District, in a cave more than 12 miles south of the project area. (ANHC 2018). Found primarily in the Ozark Mountains Ecoregion in Arkansas, but also occurs in the Boston Mountains and into the Arkansas Valley (ANHC 2018). Forages almost exclusively along rivers, creeks and lakes (Perry et al 2018), habitat which does not occur in the project area. May migrate long distances between winter hibernacula and summer roosting and foraging areas. Roosts primarily in caves or in analogous vertical structures year around (Perry et al 2018).
Harperella (plant)	<i>Ptilimnium nodosum</i>	E	No	Not reported on the OSFNF and is not known to occur in project area (Witsell and Baker 2011, USDA-FS 2005b, ANHC 2018, NatureServe 2020). No suitable habitat in the project area.
Hell Creek Cave Crayfish	<i>Cambarus zophonastes</i>	E	No	Does not occur on the Big Piney Ranger District. Known occurrences are located in two caves in Marion and Stone County, Arkansas (NatureServe 2020).
Indiana bat	<i>Myotis sodalis</i>	E	Yes	Known to occur on the Boston Mountain Ranger District (ANHC 2018), using hibernacula approximately 12 miles south of the project area. Suitable foraging and roosting habitat is present.
Least Tern (bird)	<i>Sternula antillarum</i>	E	No	Nests on sandbars of large rivers (NatureServe 2020). Suitable habitat not available in project area.
Missouri bladderpod (plant)	<i>Physaria (Lesquerella) filiformis</i>	T	No	Not reported on the OSFNF, not known from the project area. Closest known location is Washington County (Witsell 2006). Known from shale, sandstone, limestone and dolomite glades; such habitat does not exist in project area. A “no effect” determination was made.
Neosho Mucket mussel	<i>Lampsilis rafinesqueana</i>	E	No	Not known to occur on the Boston Mountain Ranger District. Known occurrences and critical habitat designations on the Illinois River in Benton and Washington Counties (NatureServe 2020). There is no suitable habitat in the project area.
Northern long-eared bat	<i>Myotis septentrionalis</i>	T	Yes	Previously thought to be common forest-wide, a recent precipitous decline is attributed to WNS. Has been documented within 2 miles of the project area (ANHC 2018).

Common Name	Scientific Name	Status*	Potentially Affected	Notes and Comments
Ozark Big-eared Bat	<i>Corynorhinus townsendii ingens</i>	E	Yes	Known from the Boston Mountain Ranger District, and project is within its range; however, the closest known occurrence is roughly 11 miles south, in Franklin County (ANHC 2018). Roosts exclusively in caves or cave-like structures (Perry et al 2018)
Ozark Cavefish	<i>Troglichthys (Amblyopsis) rosae</i>	T	No	Not known from the Boston Mountain Ranger District. Known from nine caves in Benton County, Arkansas (USFWS 5-year Review 2011, NatureServe 2020).
Ozark hellbender	<i>Cryptobranchus alleganiensis bishopi</i>	E	No	This species is not known to occur in the Boston Mountain Ranger District or the project area. Known occurrences are in Baxter, Fulton, Independence, Izard & Randolph Counties in Arkansas (NatureServe 2020). There is no suitable habitat in the project area.
Pink Mucket	<i>Lampsilis abrupta</i>	E	No	Not recorded on the OSFNF. Known from White River, Black River, Ouachita River, Saline River, Little Missouri River (Harris et al. 2009, NatureServe 2020). There is no suitable habitat in the project area.
Piping Plover	<i>Charadrius melodus</i>	T	No	Rests during migration on shorelines of lakes, rivers, and wetlands with muddy and sandy substrates (NatureServe 2020). Similar habitat is not present in the project area. A “no effect” determination was made.
Red Knot	<i>Calidris canutus rufa</i>	T	No	Suitable migration stopover habitat includes marshes, sand dunes or sandbars (NatureServe 2020), which do not occur in the project area. A “no effect” determination was made.
Eastern Black Rail	<i>Laterallus jamaicensis ssp. jamaicensis</i>	P	No	No suitable herbaceous marsh habitat (NatureServe 2020) occurs in the project area. A “no effect” determination was made.
Rabbitsfoot mussel	<i>Theliderma cylindrica (Quadrula cylindrica cylindrica)</i>	T	No	Does not occur on the Boston Mountain Ranger District (ANHC 2028). Populations occur in Spring and Black River Drainages; Illinois River, War Eagle Creek, and Buffalo River (Harris et al. 2009). There is no suitable habitat in the project area.
Scaleshell mussel	<i>Leptodea leptodon</i>	E	No	Not recorded on the OSFNF. Closest known occurrence is a record in Frog Bayou, near Rudy in Crawford County (Harris et al. 2009, NatureServe 2020, ANHC 2018). There is no suitable habitat in the project area.
Snuffbox	<i>Epioblasma triquetra</i>	E	No	Not known to occur in the Big Piney Ranger District (ANHC 2018). There is no suitable habitat in the project area.
Speckled Pocketbook mussel	<i>Lampsilis streckeri</i>	E	No	Not known to occur on OSFNF (ANHC 2018). There is no suitable habitat in the project area.
Spectaclecase mussel	<i>Margaritifera (Cumberlandia) monodonta</i>	E	No	Not known to occur on the Big Piney Ranger District. Known occurrences on lower Ouachita River and Mulberry River (Harris et al. 2009, Williams et al. 2017, NatureServe 2020). There is no suitable habitat in the project area.
Yellow-cheek darter	<i>Etheostoma moorei</i>	E	No	Not known to occur on or near the Boston Mountain Ranger District. Critical habitat is designated outside of OSFNF. Known to occur in Searcy, Stone and Van Buren Counties in Arkansas (NatureServe 2020). There is no suitable habitat in the project area.

Common Name	Scientific Name	Status*	Potentially Affected	Notes and Comments
FOREST SERVICE SENSITIVE SPECIES - ANIMALS				
Bachman's Sparrow	<i>Peucaea (Aimophila) aestivalis</i>	S	No	Not known from the Boston Mountain Ranger District. Prefers mature to old-growth open pine forest that has been subjected to fires creating a well-developed herbaceous layer with limited shrub and midstory cover (NatureServe 2020). There is no suitable habitat in the project area.
Boston Mountains Crayfish	<i>Cambarus causeyi</i>	S	No	Known from springs and roadside seepages in Franklin, Johnson, Madison, Newton, Pope, Searcy, and Stone Counties (NatureServe 2020). The nearest known occurrence is more than 8 miles east of the project area, and there is no suitable habitat in the project area.
Eastern small-footed bat	<i>Myotis leibii</i>	S	Yes	Forages near riparian areas and water sources, canopy openings, and near field edges. Known mainly from Newton, Searcy, Stone, and Franklin Counties (Sauguey et al. 1993, ANHC 2018). The nearest known occurrence is 6 miles southeast of the project area, and suitable habitat does occur in the project area.
Henslow's Sparrow	<i>Passerculus henslowii</i>	S	No	Not known from the Boston Mountain Ranger District. Breeding habitat range includes Benton, Franklin, Fulton, and Washington Counties; non-breeding or migratory habitat range includes Ashley, Bradley, Calhoun, Cleveland, Drew, Hempstead, Monroe, Prairie, and Pulaski Counties (ANHC 2018). Breeding habitat is characterized by open fields and meadows interspersed with shrubby vegetation, especially in low-lying areas (NatureServe 2020). Not known to occur near the project area and suitable habitat is not present.
Isopod (no common name)	<i>Lirceus bicuspidatus</i>	S	No	Not known to occur in the Boston Mountain Ranger District, which is west and northwest of the known range (ANHC 2018). The nearest known occurrence is 23 miles away, in Johnson County. Suitable seep or spring habitat does not occur in the project area.
Longnose darter	<i>Percina nasuta</i>	S	No	Known from the Boston Mountain Ranger District and from Madison County 3.5 miles from the project area, in the White River (ANHC 2018). Occurs in small to medium rivers (NatureServe 2020), which do not occur in the project area.
Monarch butterfly	<i>Danaus plexippus</i>	S	Yes	Thought to be forest-wide. Habitat is complex for this species, but the Ozarks are known to be major migratory stopovers for Monarchs traveling both northwards and back southwards. Breeding areas are virtually all patches of milkweed, while spring and fall migratory habitat is largely dependent on nectar sources, such as wildflowers (NatureServe 2020).
Mount Magazine shagreen	<i>Inflectarius (Mesodon) magazinensis</i>	S	No	Not known from the Boston Mountain Ranger District. Restricted to one steep talus slope in rich mesic hardwood forests on Mt. Magazine in Logan County (NatureServe 2020).
Nearctic Paduniellan caddisfly	<i>Paduniella nearctica</i>	S	No	Not known from the Boston Mountain Ranger District, but the District is within the known range (ANHC 2018). Suitable habitat includes clear, spring-fed, high-gradient, gravel-bottomed creeks to medium-sized rivers (NatureServe 2020), which are not found in the project area.

Common Name	Scientific Name	Status*	Potentially Affected	Notes and Comments
Ozark shiner	<i>Notropis ozarcanus</i>	S	No	Not known from the Boston Mountain Ranger District but known from Madison County, roughly 10 miles east of the project area, in the Buffalo River (ANHC 2018). Suitable habitat includes small to medium clear rivers with high gradient and permanent strong flows (NatureServe 2020), which does not occur in or near the project area.
Purple Lilliput	<i>Toxolasma lividum</i>	S	No	Not known from the Boston Mountain Ranger District (ANHC 2018). Habitat includes headwater streams and small- to medium-sized rivers of various substrates (NatureServe 2020). There is no suitable habitat in the project area.
Rafinesque's Big-eared Bat	<i>Corynorhinus rafinesquii</i>	S	No	Not known from the Boston Mountain Ranger District. Restricted to southern and eastern Arkansas except for several known occurrences in the Arkansas Valley Ecoregion (NatureServe 2020, ANHC 2018).
Regal fritillary	<i>Speyeria idalia</i>	S	No	Not known from the Boston Mountain Ranger District. It is only known to occur in Benton and Washington Counties and found almost exclusively in tallgrass prairies (NatureServe 2020). Suitable habitat does not occur in the project area.
Slippershell	<i>Alasmidonta viridis</i>	S	No	Not known from the Boston Mountain Ranger District, with the nearest records in Newton County (ANHC 2018). Suitable habitat does not occur in the project area.
Southeastern myotis	<i>Myotis austroriparius</i>	S	No	Not known from the Boston Mountain Ranger District. Known only from southern and eastern Arkansas (NatureServe 2020), including on the St. Francis portion of the OSFNF.
Southern cavefish	<i>Typhlichthys subterraneus</i>	S	No	Not known from the Boston Mountain Ranger District (ANHC 2018). Known from cave streams in eastern Ozarks—Baxter, Fulton, Randolph, and Stone Counties (NatureServe 2020).
Tricolored bat	<i>Perimyotis subflavus</i>	S	Yes	Known to occur on the Boston Mountain Ranger District. Range is statewide, including Franklin, Madison, Newton, and Pope Counties (Perry et al. 2018). Forages near trees and along waterways. Hibernation sites are often in caves. Suitable foraging habitat exists in the project area.
Western Fanshell	<i>Cyprogenia aberti</i>	S	No	Not known from the Boston Mountain Ranger District. Nearest occurrences are in War Eagle Creek in northern Madison County and the Buffalo River in eastern Newton County (ANHC 2018). Habitat includes medium-sized rivers with rock, gravel, and soft mud bottoms (NatureServe 2020), which do not occur in the project area.
Williams' crayfish	<i>Orconectes (Faxonius) williamsi</i>	S	Yes	Known from the Boston Mountain Ranger District, with the nearest known occurrence less than 4 miles from the project area, in Washington County. Most Arkansas records are from headwater streams in the White River drainage (Wagner et al. 2010). Suitable habitat includes gravelly, headwater creeks, cave streams, and pools of larger substrates (NatureServe 2020). The small, headwater stream in the project area is a lower-order stream than most occurrences (ANHC 2018, ADEQ 2014)..

Common Name	Scientific Name	Status*	Potentially Affected	Notes and Comments
FOREST SERVICE SENSITIVE SPECIES - PLANTS				
Alabama snow-wreath	<i>Neviusia alabamensis</i>	S	No	Not known to occur on or near the Boston Mountain Ranger District. Known from Conway, Faulkner, Newton and Pope Counties (ANHC 2018). Suitable habitat includes riparian areas, forested bluffs, talus slopes, and streambanks on various substrates, soil types, and aspects (NatureServe 2020). This species was not found during field surveys.
Bay starvine	<i>Schisandra glabra</i>	S	No	Not known from the Boston Mountain Ranger District. Known only from the St. Francis Ranger District and the Mississippi Alluvial Plain (ANHC 2018).
Bush's poppymallow	<i>Callirhoe bushii</i>	S	No	Not known from the Boston Mountain Ranger District. Found in Benton, Carroll, Logan, Marion, Van Buren, and Washington Counties (ANHC 2018). Suitable habitat includes highway rights-of-way, fencerows, rocky open woods, and edges of limestone glades. Suitable habitat does not occur in the project area.
Butternut	<i>Juglans cinerea</i>	S	No	Not known from the Boston Mountain Ranger District. The closest localities are in Newton and Searcy Counties (ANHC 2018). Suitable habitat includes rich, mesic forests, lower slopes, ravines, banks and terraces of creeks and streams and floodplain forests (NatureServe 2020). Although suitable habitat exists in the project area, this species is not known from Madison County and was not found during field surveys.
Church's wildrye	<i>Elymus churchii</i>	S	No	Not known from the Boston Mountain Ranger District. This species is known to occur in Benton, Carroll, Logan, Montgomery, Polk, and Scott Counties. Habitat includes pine-oak forest/woodland on dry, rocky, and basic soils in open woods and on ridges, bluffs, and river banks (NatureServe 2020). Suitable habitat does not occur in the project area.
Creeping St. John's wort	<i>Hypericum adpressum</i>	S	No	Not known from the Big Piney Ranger District or OSFNF (ANHC 2018). No suitable wetland habitat occurs in the project area.
Earleaf false foxglove	<i>Agalinis auriculata</i>	S	No	Not known from the Boston Mountain Ranger District. Known to occur in Carroll, Hempstead, and Washington Counties (ANHC 2018). Habitat includes mesic to dry prairies, fallow fields, and borders of upland woods, glades, barrens, and other openings (NatureServe 2020). Known in Arkansas only from glades or blackland prairies, which do not occur in the project area.
Glade larkspur	<i>Delphinium treleasei</i>	S	No	Not known from the Boston Mountain Ranger District. Known to occur in eight counties: Baxter, Boone, Carroll, Fulton, Marion, Searcy, and Stone Counties (ANHC 2018). Occurs on limestone/dolomite barrens, slopes, glades, bluffs and rocky roadsides throughout the Ozark highlands (NatureServe 2020). Suitable habitat may occur in the project area, but this species was not found during field surveys.

Common Name	Scientific Name	Status*	Potentially Affected	Notes and Comments
Gulf pipewort	<i>Eriocaulon koernickianum</i>	S	No	Known from the southeastern corner of the Boston Mountain Ranger District. Arkansas populations are scattered across eleven counties from the Boston Mountains to the Gulf Coastal Plain (ANHC 2018). Habitat includes moist to wet open areas such as sandstone glade seeps, bogs, and prairie stream banks (NatureServe 2020). No suitable habitat occurs in the project area.
Largeleaf grass of Parnassus	<i>Parnassia grandifolia</i>	S	No	Distribution is not well known in Arkansas. Habitat includes swampy open meadows in small valleys fed by calcareous spring water, moist limestone ledges along streams, and moist crevices at the base of north-facing limestone bluffs (NatureServe 2020). No suitable habitat occurs in the project area.
Maple-leaved oak	<i>Quercus acerifolia</i>	S	No	Not known from the Boston Mountain Ranger District. Arkansas Endemic known only from Mt. Magazine Ranger District in Logan and Sebastian Counties and from the Ouachita National Forest in Montgomery and Polk Counties (Robison and Allen 1995, ANHC 2018). No suitable habitat occurs in the project area.
Moore's delphinium	<i>Delphinium newtonianum</i>	S	No	Not known from the Boston Mountain Ranger District (ANHC 2018). Arkansas endemic that is found in Montgomery, Newton, Pike, Polk, Pope, Searcy, and Van Buren Counties (ANHC 2018, Robison and Allen 1995). Suitable habitat includes rich mesic or dry-mesic forests in the Boston and Ouachita Mountains of Arkansas (NatureServe 2020). Suitable habitat does exist in the project area, but it was not found during field surveys.
Nuttall's cornsalad	<i>Valerianella nuttallii</i>	S	No	Not known from the Ozark National Forest (ANHC 2018). Habitat includes shale glades and prairies with shale substrates (NatureServe 2020). No suitable habitat occurs in the project area.
Open-ground draba	<i>Draba aprica</i>	S	No	Not known from the Boston Mountain Ranger District. In Arkansas, it is found in Faulkner, Garland, Hot Spring, Madison, Montgomery, Polk, Pope, Saline, and Stone Counties (ANHC 2018). In the Ozarks, this species occurs on dolomitic rocky glade/barren margins with very thin soils (NatureServe 2020). No suitable habitat occurs in the project area.
Ouachita false indigo	<i>Amorpha ouachitensis</i>	S	No	Known from the Boston Mountain Ranger District (ANHC 2018). Suitable habitat includes clearings of rocky creeks, streams banks, rocky ridges, glades and dry, rocky sandstone slopes (NatureServe 2020). No suitable habitat occurs in the project area.
Ouachita Mtn. Goldenrod	<i>Solidago ouachitensis</i>	S	No	Known on Ozark National Forest only from the Mount Magazine Ranger District, with most Arkansas populations known from Polk and Montgomery Counties (ANHC 2018). Suitable habitat includes mesic, wooded, north-facing slopes of the Ouachita Mountains (NatureServe 2020). No suitable habitat occurs in the project area.

Common Name	Scientific Name	Status*	Potentially Affected	Notes and Comments
Ovate catchfly	<i>Silene ovata</i>	S	No	Known from the Boston Mountain Ranger District, in Crawford County, and also known from Baxter, Benton, Cleburne, Izard, Newton, Pope, and Van Buren Counties (ANHC 2018). Found in rich woods, occasionally in forests with soil over calcareous rocks. Suitable habitat does occur in the project area, but this species was not found during field surveys.
Ozark chinquapin	<i>Castanea pumila</i> var. <i>ozarkensis</i>	S	No	Several occurrences on the Boston Mountain Ranger District (ANHC 2018), with the nearest known occurrence a little more than a mile from the project area. Commonly found as stump sprouts and will continue to re-sprout as long as herbicide not used. This species was not found during field surveys.
Ozark cornsalad	<i>Valerianella ozarkana</i>	S	No	Not known from the Boston Mountain Ranger District, but a population does occur in northern Madison County, more than 25 miles from the project area (ANHC 2018). Suitable habitat includes rocky glades and open woods on calcareous soils. No suitable habitat occurs in the project area.
Ozark least trillium	<i>Trillium pusillum</i> var. <i>ozarkanum</i>	S	No	Not known from Boston Mountain Ranger District. Found in Benton, Boone, Carroll, Madison, Montgomery, Newton, Polk, Pulaski, and Washington Counties (ANHC 2018). Suitable habitat includes dry to mesic oak-hickory upland woods with a partially open canopy (NatureServe 2020). The canopy in the project area is mostly closed, so suitable habitat is unlikely, and this species was not found during field surveys.
Ozark spiderwort	<i>Tradescantia ozarkana</i>	S	No	Known from the Boston Mountain Ranger District; closest known occurrences are 9 miles south of the project area (ANHC 2018). Habitat includes steep, rocky, and wooded slopes, ravines, bases & lower slopes of bluffs, and dry to moist woodland ledges (NatureServe 2020). Suitable habitat is likely in the project area; however, the species was not found during field surveys.
Royal catchfly	<i>Silene regia</i>	S	No	Known occurrences in Benton, Boone, Carroll, Fulton, Hot Spring, Madison, Marion, Newton, Searcy, Sharp, and Stone Counties (ANHC 2018). Habitat includes open woodlands, rock outcrops, prairies and along roadsides (NatureServe 2020). No suitable habitat occurs in the project area.
Southern lady's slipper	<i>Cypripedium kentuckiense</i>	S	No	Known from the Boston Mountain Ranger District. Several known occurrences in Johnson, Newton, and other counties (ANHC 2018). Habitat includes mesic, shaded area in mature floodplain forests, near streams and creeks. Suitable habitat does not occur in the project area, though there may be suitable habitat nearby. This species was not found during field surveys.

***Status:**

P = proposed for federal listing as threatened

E = federal endangered species

T = federal threatened species

S = Amended Regional Forester's Sensitive Species List (2017)

APPENDIX C: LITERATURE CITED

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APPENDIX D: VASCULAR PLANT SURVEY RESULTS

Vascular plant surveys were conducted on August 5, 2020 by ARDOT botanist, Joe Ledvina. Surveys identified 95 species, including the 15 (15.8%) non-native species denoted with asterisks below, which in turn includes the 9 (9.5%) invasive species denoted with double asterisks. No plant species tracked by the ANHC were located in the project area, and no plant species listed as PETS by the US Forest Service were located in the project area.

Family	Scientific Name	Common Name
Adoxaceae	<i>Sambucus canadensis</i>	elderberry
Anacardiaceae	<i>Rhus copallinum</i>	winged sumac, dwarf sumac, shining sumac
Anacardiaceae	<i>Toxicodendron radicans</i>	poison-ivy
Annonaceae	<i>Asimina triloba</i>	pawpaw
Apiaceae	** <i>Daucus carota</i>	Queen Anne's-lace, wild carrot
Apiaceae	* <i>Torilis arvensis</i>	field hedge-parsley
Apiaceae	<i>Sanicula canadensis</i>	Canadian black-snakeroot
Araceae	<i>Arisaema triphyllum</i>	Jack-in-the-pulpit, Indian-turnip
Araliaceae	<i>Aralia racemosa</i>	American spikenard
Araliaceae	<i>Aralia spinosa</i>	devil's-walkingstick, Hercules'-club
Asteraceae	** <i>Leucanthemum vulgare</i>	ox-eye daisy
Asteraceae	<i>Ageratina altissima</i> var. <i>altissima</i>	white snakeroot
Asteraceae	<i>Ambrosia artemisiifolia</i>	common ragweed
Asteraceae	<i>Ambrosia trifida</i>	giant ragweed
Asteraceae	<i>Bidens aristosa</i>	tickseed-sunflower
Asteraceae	<i>Erigeron strigosus</i> var. <i>strigosus</i>	daisy fleabane
Asteraceae	<i>Eupatorium serotinum</i>	late boneset
Asteraceae	<i>Helianthus hirsutus</i>	hairy woodland sunflower
Asteraceae	<i>Iva annua</i>	marsh-elder, sumpweed
Asteraceae	<i>Prenanthes altissima</i>	tall rattlesnake-root
Asteraceae	<i>Rudbeckia triloba</i> var. <i>triloba</i>	brown-eyed Susan
Asteraceae	<i>Solidago altissima</i> ssp. <i>altissima</i>	tall goldenrod
Asteraceae	<i>Solidago caesia</i> var. <i>caesia</i>	wreath goldenrod, blue-stem goldenrod
Asteraceae	<i>Symphyotrichum pilosum</i> var. <i>pilosum</i>	white heath aster, white oldfield aster
Asteraceae	<i>Symphyotrichum</i> sp.	aster
Asteraceae	<i>Verbesina alternifolia</i>	yellow-ironweed
Asteraceae	<i>Verbesina helianthoides</i>	crownbeard, wingstem
Balsaminaceae	<i>Impatiens capensis</i>	spotted jewelweed, spotted touch-me-not
Boraginaceae	<i>Cynoglossum virginianum</i>	wild comfrey
Brassicaceae	<i>Lepidium virginicum</i>	Virginia pepper-grass, poor-man's-pepper
Campanulaceae	<i>Campanula americana</i>	tall bellflower
Campanulaceae	<i>Lobelia inflata</i>	Indian-tobacco
Cannabaceae	<i>Celtis occidentalis</i>	hackberry

Caprifoliaceae	<i>Symphoricarpos orbiculatus</i>	coral-berry
Commelinaceae	<i>Commelina erecta</i>	erect dayflower
Convolvulaceae	<i>Ipomoea</i> sp.	morning glory
Cucurbitaceae	<i>Cucurbitaceae</i> sp.	gourd
Cyperaceae	<i>Carex muehlenbergii</i>	sedge
Cyperaceae	<i>Carex</i> sect. <i>Laxiflorae</i>	pointed broom sedge
Cyperaceae	<i>Carex</i> sp.	sedge
Dryopteridaceae	<i>Polystichum acrostichoides</i>	Christmas fern
Ebenaceae	<i>Diospyros virginiana</i>	persimmon
Euphorbiaceae	<i>Croton monanthogynus</i>	prairie-tea
Fabaceae	** <i>Lespedeza cuneata</i>	sericea lespedeza
Fabaceae	** <i>Melilotus albus</i>	white sweet-clover
Fabaceae	* <i>Kummerowia stipulacea</i>	Korean bush-clover, Korean lespedeza
Fabaceae	* <i>Kummerowia striata</i>	Japanese bush-clover, Japanese lespedeza
Fabaceae	* <i>Trifolium pratense</i>	red clover
Fabaceae	<i>Amphicarpaea bracteata</i>	hog-peanut
Fabaceae	<i>Cercis canadensis</i> var. <i>canadensis</i>	eastern redbud
Fabaceae	<i>Robinia pseudoacacia</i>	black locust
Fagaceae	<i>Quercus alba</i>	white oak
Hydrangeaceae	<i>Hydrangea arborescens</i>	wild hydrangea
Hypericaceae	<i>Hypericum prolificum</i>	shrubby St. John's-wort
Juglandaceae	<i>Carya alba</i>	mockernut hickory
Juglandaceae	<i>Carya cordiformis</i>	bitternut hickory
Juglandaceae	<i>Carya illinoensis</i>	pecan
Lamiaceae	** <i>Perilla frutescens</i>	beefsteak-plant
Lamiaceae	<i>Cunila organoides</i>	dittany
Lamiaceae	<i>Prunella vulgaris</i> ssp. <i>lanceolata</i>	heal-all, self-heal
Lauraceae	<i>Lindera benzoin</i>	spicebush
Malvaceae	<i>Tilia americana</i>	American basswood
Menispermaceae	<i>Menispermum canadense</i>	moonseed
Oleaceae	<i>Fraxinus pennsylvanica</i>	green ash
Oxalidaceae	<i>Oxalis dillenii</i>	yellow wood-sorrel
Passifloraceae	<i>Passiflora incarnata</i>	purple passion-flower, maypops
Phytolaccaceae	<i>Phytolacca americana</i> var. <i>americana</i>	poke, pokeweed
Plantaginaceae	<i>Plantago rugelii</i>	black-seed plantain, Rugel's plantain
Poaceae	** <i>Cynodon dactylon</i>	Bermuda grass
Poaceae	** <i>Microstegium vimineum</i>	Japanese stilt grass, Nepalese brown-top
Poaceae	** <i>Schedonorus arundinaceus</i>	tall fescue
Poaceae	** <i>Sorghum halepense</i>	Johnson grass
Poaceae	<i>Dichanthelium clandestinum</i>	deer-tongue panic grass
Poaceae	<i>Elymus glabriflorus</i>	southeastern wild rye

Poaceae	<i>Leersia lenticularis</i>	catchfly grass
Polygonaceae	* <i>Persicaria longiseta</i>	bristly lady's-thumb
Polygonaceae	* <i>Rumex obtusifolius</i>	bitter dock, broad-leaf dock
Polygonaceae	<i>Persicaria hydropiperoides</i>	swamp smartweed, wild water-pepper
Polygonaceae	<i>Persicaria virginiana</i>	jumpseed, Virginia knotweed
Pteridaceae	<i>Adiantum pedatum</i>	northern maidenhair fern
Ranunculaceae	<i>Clematis</i> sp.	leather flower
Rosaceae	<i>Agrimonia pubescens</i>	agrimony
Rosaceae	<i>Rubus sect. Arguti</i>	southern dewberry
Rosaceae	<i>Rubus trivialis</i>	southern dewberry
Rubiaceae	<i>Galium aparine</i>	cleavers
Rubiaceae	<i>Galium circaezans</i>	wild licorice
Sapindaceae	<i>Acer saccharum</i> var. <i>saccharum</i>	sugar maple
Sapindaceae	<i>Aesculus glabra</i> var. <i>glabra</i>	Ohio buckeye
Smilacaceae	<i>Smilax rotundifolia</i>	common greenbrier, horsebrier
Solanaceae	<i>Solanum carolinense</i>	Carolina horse-nettle
Ulmaceae	<i>Ulmus rubra</i>	slippery elm, red elm
Urticaceae	<i>Pilea pumila</i>	clearweed
Violaceae	<i>Viola pubescens</i>	downy yellow violet, smooth yellow violet
Vitaceae	<i>Parthenocissus quinquefolia</i>	Virginia-creeper, woodbine
Vitaceae	<i>Vitis cinerea</i>	winter grape, downy grape, gray-bark grape

**ARDOT ENVIRONMENTAL VERIFICATION CHECKLIST
FOR CONSIDERATION OF POTENTIAL IMPACTS**

ARDOT Job Number 090623 FAP Number ER-0044(37)

Job Title Hwy. 295 Slide Repairs (Madison Co.) (S)

Environmental Resource	None	Minimal	Major	Comments-required for each item
Air Quality	X			No air quality/MSAT impacts
Cultural Resources	X			SHPO clearance attached
Economic	X			No adverse impacts
Endangered Species		X		"LAA" with mitigation, "NLAA", and "No effect" determinations
Environmental Justice/Title VI	X			EJ population impacts not anticipated
Fish and Wildlife		X		Temporary impacts during construction
Floodplains	X			Floodplain not regulated within USFS
Forest Service Property		X		0.5 acre TCE from Ozark-St. Francis NFs; Informal Biological Evaluation completed
Hazardous Materials/Landfills	X			No sites in project area
Land Use		X		1.0 acres of TCE will be required
Migratory Birds	X			Migratory Bird SP included
Navigation/Coast Guard	X			No navigable waterways involved
Noise Levels	X			No increases due to project
Prime Farmland	X			None impacted by project
Protected Waters	X			None occur in project area
Public Recreation Lands	X			No impacts are anticipated
Public Water Supply/WHPA	X			None in project area
Relocatees	X			No relocations
Section 4(f)/6(f)	X			No impacts anticipated to 4f/6f resources
Social	X			No impacts to the social environment
Underground Storage Tanks	X			No USTs in project area
Visual	X			No changes to visual environment
Streams		X		Impacts to ~80 feet of intermittent stream
Water Quality		X		Temporary impacts during construction
Wetlands	X			None in the project area
Wildlife Refuges	X			None in the project area

Section 401 Water Quality Certification Required? No
 Short-term Activity Authorization Required? Yes
 Section 404 Permit Required? Yes Type NW 14

Remarks: Nationwide Permit 14 – No Pre-Construction Notification required.
LAA for Indiana and northern long-eared bats, requires winter clearing restriction and mitigation because of tree clearing greater than 100 feet from roadway.

Signature of Evaluator  Date 10-21-2020