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OCTOBER 2024

Floodplain Reforestation Conservation Reserve Enhancement Program Programmatic Environmental Assessment

The Nature Conservancy and the Farm Service Agency

CONTRACT NUMBER: 2024-32

COVER PAGE

Proposed Action: The United States Department of Agriculture (USDA), Commodity Credit Corporation (CCC) and The Nature Conservancy (TNC) propose to implement a Floodplain Reforestation Conservation Reserve Enhancement Program (CREP) in the Lower Mississippi Alluvial Valley. USDA is provided the statutory authority by the provisions of the Food Security Act of 1985, as amended (16 United States Code § 3830 et seq.), and the Regulations at 7 Code of Federal Regulations (CFR) Part 1410. In accordance with the 1985 Act and the Agricultural Improvement Act of 2018 (Public Law [PL] 115-334; the 2018 Farm Bill), USDA/CCC is authorized to enroll lands. CREP is a voluntary land conservation program for agricultural producers.

Type of Document: Draft Programmatic Environmental Assessment (PEA)

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Lead Agency: USDA Farm Service Agency (FSA) on behalf of CCC

Sponsoring Organization: The Nature Conservancy

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Comments: This PEA has been prepared in accordance with the National Environmental Policy Act (NEPA) (PL 91-190); Council on Environmental Quality regulations implementing NEPA (40 CFR Parts 1500-1508); and FSA NEPA regulations (7 CFR Part 799).

The Draft PEA is being made available for a 30-day public review and comment period.

The Draft PEA is available online for review and download on FSA's website at https://www.fsa.usda.gov/programs-and-services/environmental-cultural-resource/nepa/current-nepa-documents/index. Public and agency comments on the Draft PEA will be considered in the Final PEA. Written comments on the Draft PEA should be sent to SM.FPAC.FBC.ENV@usda.gov. The Draft PEA Tracking ID Number (EAXX-005-49-000-1729070800) should be included in the subject line of all comments submitted via email.

TABLE OF CONTENTS

LIST OF APPENDICES

LIST OF FIGURES

LIST OF TABLES

LIST OF ACRONYMS AND ABBREVIATIONS

°F	degrees Fahrenheit
ADEE	Arkansas Department of Energy and Environment
APE	Area of Potential Effects
BGEPA	Bald and Golden Eagle Protection Act
BIA	Bureau of Indian Affairs
BLH	bottomland hardwood
BMP	best management practice
CAP	criteria air pollutant
CEC	Commission for Environmental Cooperation
CFR	Code of Federal Regulations
CO_2	carbon dioxide
CP	conservation practice
CREP	Conservation Reserve Enhancement Program
CRP	Conservation Reserve Program
CWA	Clean Water Act
DEQ	Division of Environmental Quality
E.O.	Executive order
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FSA	Farm Service Agency
GHG	greenhouse gas
GSP	gross state product
HUD	U.S. Department of Housing and Urban Development
LDEQ	Louisiana Department of Environmental Quality
LDWF	Louisiana Department of Wildlife and Fisheries
LMAV	Lower Mississippi Alluvial Valley
LMVJV	Lower Mississippi Valley Joint Venture
MBTA	Migratory Bird Treaty Act
MDEQ	Mississippi Department of Environmental Quality
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NFWF	National Fish and Wildlife Foundation
NHPA	National Historic Preservation Act
NOAA	National Oceanic and Atmospheric Administration
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
PEA	Programmatic Environmental Assessment

PM_{10}	particulate matter equal to or less than 10 microns in diameter
$PM_{2.5}$	particulate matter equal to or less than 2.5 microns in diameter
SHPO	State Historic Preservation Officer
SSA	sole source aquifer
TMDL	Total Maximum Daily Load
TNC	The Nature Conservancy
U.S.C.	United States Code
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

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1 Purpose and Need

1.1 Introduction

The U.S. Department of Agriculture (USDA) Commodity Credit Corporation, in coordination with The Nature Conservancy (TNC), has prepared this Programmatic Environmental Assessment (PEA) to analyze the potential environmental impacts from the Proposed Action to implement a Floodplain Reforestation Conservation Reserve Enhancement Program (CREP) in the Lower Mississippi Alluvial Valley (LMAV). The proposed CREP, if implemented, would be administered by the USDA Farm Service Agency (FSA) in coordination with TNC.

1.2 Background

1.2.1 Conservation Reserve Program and Conservation Reserve Enhancement Program

On behalf of the Commodity Credit Corporation, the USDA FSA administers the Conservation Reserve Program (CRP), the federal government's largest private land conservation program. CRP is a voluntary program that supports the implementation of long-term conservation measures designed to improve the quality of ground and surface waters, control soil erosion, and enhance wildlife habitat on environmentally sensitive agricultural land. As of October 2023, more than 23 million acres of private farmland representing more than 667,000 landowners were enrolled in CRP. The total amount of land enrolled in CRP has increased by 21 percent since 2021 (USDA FSA, 2023).

CREP was established in 1997 under the authority of CRP to address agriculture-related environmental issues by establishing conservation practices (CPs) on agricultural lands using funding from federal, state, and tribal governments as well as non-government sources. CREP addresses high priority conservation issues in defined geographic areas such as watersheds. Eligible landowners who voluntarily enroll their eligible lands in CREP receive financial and technical assistance for establishing CPs on their land. In addition, property owners receive annual rental payments based on the enrolled acreage. Once eligible lands are identified, site-specific environmental reviews, including agency consultations and acquisition of applicable permits, are conducted in accordance with FSA Handbook*, Environmental Quality Programs for State and County Offices, 1-EQ Revision 3* (USDA FSA, 2016).

1.2.2 Lower Mississippi Alluvial Valley

The historic floodplain of the Mississippi River is known as the LMAV. It covers approximately 24 million acres in portions of seven states between the confluence of the Ohio and Mississippi Rivers and the mouth of the Mississippi at the Gulf of Mexico. As recently as 200 years ago, this region was almost completely forested. These forests and associated wetlands provided diverse habitat for a wide range of plants and wildlife, including migratory birds. Following the Civil War and through the end of the 20th century, more than 75 percent of lands in the region were cleared and planted for agriculture. Although levees and drainage systems have been built to reduce flooding impacts, frequent flooding still occurs on the lowest-lying lands, including farmland.

By the 1980s, farmers and other land managers began to realize that frequent flooding makes some of these lands unprofitable for farming. TNC began working with landowners in the late 1990s to reforest floodplains on agricultural lands using funding from the USDA Natural Resources Conservation Service's (NRCS) Wetland Reserve Program. Through that program and other complementary reforestation programs, approximately one million acres of the LMAV in Arkansas, Louisiana, and Mississippi have been reforested in the last 30 years.

While those reforestation programs continue, current funding sources are 50 percent less than originally approved in the 2018 Farm Bill (Public Law 115-334, the Agricultural Improvement Act of 2018), and costs have increased. Additionally, lands in the region experience large rainfall events that occur later in the year. Some lands that were profitable for farming as recently as 10 years ago no longer are. As a result, landowner demand for floodplain forest restoration currently exceeds funding available through existing programs (TNC, 2024a). Therefore, additional programs are needed to promote floodplain forest restoration on agricultural lands in the LMAV.

1.3 Regulatory Compliance

The Proposed Action is a federally funded and authorized activity requiring consideration under the National Environmental Policy Act (NEPA). Therefore, this PEA has been prepared in accordance with NEPA; Council on Environmental Quality regulations implementing NEPA (40 Code of Federal Regulations [CFR] Parts 1500–1508); FSA NEPA regulations (7 CFR Part 799); and FSA Handbook, *1-EQ*. NEPA is intended to inform the public about the Proposed Action and provide opportunities for public involvement during the decision-making process. NEPA also helps agency officials consider environmental and socioeconomic factors when making decisions related to the Proposed Action.

The requirements of other laws, regulations, and Executive orders (E.O.'s) are also addressed during the NEPA process, including but not limited to the following:

- National Historic Preservation Act (NHPA)
- Endangered Species Act (ESA)
- Clean Water Act (CWA)
- Clean Air Act
- E.O. 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations
- E.O. 11988, Floodplain Management
- E.O. 11990, Protection of Wetlands

1.4 Goals and Objectives of the Proposed Action

The general goals of the Proposed Action are to provide farmers in the LMAV with the opportunity to voluntarily set aside agricultural land to restore floodplain forests and wetlands. Restoration of these areas is intended to improve water quality in the Mississippi River and Gulf of Mexico by

reducing sediment and nutrient runoff, improve floodplain functions, establish wildlife habitat, and increase recreational opportunities while sequestering carbon dioxide (CO_2) and reducing financial impacts on farmers. Under the proposed CREP, farmers would voluntarily enter into 14- or 15-year contracts with the federal government and a 30-year landowner participation agreement with TNC and its affiliated partner(s) agreeing to remove enrolled lands from agricultural production and plant them to approved floodplain reforestation measures specified in the CREP agreement between FSA and TNC.

Specific regional conservation goals and objectives of the proposed CREP include the following:

- Enroll 1,200 acres per year for 3 years, not to exceed 3,600 acres in total, into eligible CRP practices (see **Section 2.1**).
- By the end of 2026, enroll landowners into agreements for 30 years through execution of a 14- or 15-year federal CRP contract and a concurrent 30-year landowner participation agreement with TNC and affiliated partner(s).
- Plant at least 302 trees per acre of an appropriate mix of bottomland hardwood (BLH) seedlings to provide forest cover on all land enrolled in this CREP.
- Monitor the growth of the trees to create BLH forests on enrolled parcels and apply adaptive management actions as needed if and where reforestation prescriptions are not achieving the desired tree coverage of 125 trees per acre after 3 years from planting.

1.5 Purpose and Need

The purpose of the Proposed Action is to restore historic ecological conditions on frequently flooded agricultural land in the LMAV. The Proposed Action is needed to:

- Improve water quality in the Mississippi River and Gulf of Mexico by reducing sediment and nutrient runoff.
- Improve floodplain functions and values.
- Sequester CO_2 to mitigate climate change.
- Restore wildlife habitat.
- Create forest and recreation-based opportunities that will benefit the economies of surrounding communities.
- Reduce crop insurance and disaster relief claims.
- Reduce financial impacts on farmers and other eligible landowners.
- Conserve water in overtaxed aquifers in the LMAV by preventing irrigation to agricultural crops.
- Increase recharge to LMAV aquifers.

1.6 Public Involvement

In accordance with NEPA, FSA and TNC are providing opportunities for the public and other stakeholders to review and comment on the Proposed Action analyzed in this PEA. The Draft PEA is being made available for a 30-day public review and comment period. A Notice of Availability announcing the 30-day Draft PEA public comment period was published in the *Jonesboro Sun* (Arkansas), the *Baton Rouge Advocate* (Louisiana), and the *Jackson Clarion Ledger* (Mississippi). Letters announcing the availability of the Draft PEA for review and requesting comments were sent to multiple federal, state, and local agencies and officials, organizations, and Native American tribes with ancestral ties to lands in the LMAV. These agencies, officials, and tribes are listed in **Appendix A**. Comments on the Draft PEA should be emailed to SM.FPAC.FBC.ENV@usda.gov; please include the Tracking ID Number (EAXX-005-49-000-1729070800) in the subject line.

An electronic version of the Draft PEA is available for review and download on FSA's website at https://www.fsa.usda.gov/programs-and-services/environmental-cultural-resource/nepa/current-nepa-documents/index. Printed copies of the Draft PEA are available for review upon request at local county USDA Service Centers. Addresses, driving directions, and contact information for local USDA Service Centers are available on USDA's website at https://www.farmers.gov/working-with-us/service-center-locator.

In accordance with Section 7 of the ESA, FSA is consulting with the U.S. Fish and Wildlife Service (USFWS) regarding federally listed threatened, endangered, and candidate species and federally designated critical habitat that could potentially be affected by the Proposed Action. FSA is also coordinating with the Arkansas, Louisiana, and Mississippi State Historic Preservation Officers (SHPOs) and Native American tribes in accordance with Section 106 of the NHPA regarding the Proposed Action's potential effects on historic and traditional cultural properties. Correspondence relevant to the Proposed Action evaluated in this PEA is provided in **Appendix A**.

Comments received during the 30-day Draft PEA public review period will be addressed in the Final PEA, as applicable.

1.7 Scope and Organization of the Programmatic Environmental Assessment

This PEA analyzes the potential effects of the Proposed Action and No Action Alternatives on the following resources: biological resources, cultural resources, water resources, air quality, soils, other protected resources, socioeconomics and recreation, and environmental justice. Resources dismissed from detailed analysis because the Proposed Action would have no potential to affect them are briefly described in **Section 3.2**.

Chapter 1 of this PEA provides background information on the LMAV and presents the Purpose and Need for the Proposed Action. The Proposed Action and alternatives for implementing the Proposed Action, including the No Action Alternative, are described in **Chapter 2**. **Chapter 3** describes the affected environment (i.e., existing conditions) and potential effects from the Proposed Action on the environmental resources listed above. References consulted during the preparation of this PEA are listed in **Chapter 4**. Additional information relevant to the preparation

of this PEA, including correspondence with federal, state, and local agencies and Native American tribes, is provided in **Appendix A** through **Appendix E**.

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2 Description of the Proposed Action and Alternatives

2.1 Proposed Action

2.1.1 Overview

FSA, in coordination with TNC, proposes to implement a floodplain reforestation CREP on up to 3,600 acres of privately owned farmland in the LMAV covering portions of Arkansas, Louisiana, and Mississippi. This area encompasses approximately 38,895 square miles and is shown on **Figure 2.1-1**. The Proposed Action would serve as a bridge between TNC's existing reforestation programs and larger areas that could be planted with additional federal (USDA) support and involvement. Additionally, the Proposed Action would serve as a pilot program that would allow the testing of assumptions, development of materials, and ability to work on a smaller scale to develop lessons learned that could inform any potential future expansion of the proposed program (no future expansion of the proposed CREP is currently being planned or considered; any such future expansion, if proposed, would be subject to additional NEPA review and compliance).

Landowners participating in the proposed CREP would receive financial support for the costs of installing and maintaining CPs approved by USDA CRP, as well as annual rental payments for the specific lands enrolled in the program for the duration of the 14- to 15-year contract term. Installation of CPs would be conducted by TNC or TNC-approved contractors in accordance with state-specific NRCS conservation practice standards. Program participation would be voluntary; therefore, the locations and sizes of specific parcels that would be enrolled under the expanded CREP are not currently known. Once specific parcels and proposed CPs are identified, local USDA NRCS conservation planners would conduct site-specific environmental evaluations on behalf of FSA. FSA would review and approve these environmental evaluations and ensure compliance with FSA's NEPA implementing regulations (7 CFR Part 799) prior to implementing any new CREP contracts.

Primary components of the Proposed Action are summarized in **Table 2.1-1**. A list of counties in each state that are fully or partially included in the proposed CREP implementation area is provided in **Appendix B**.

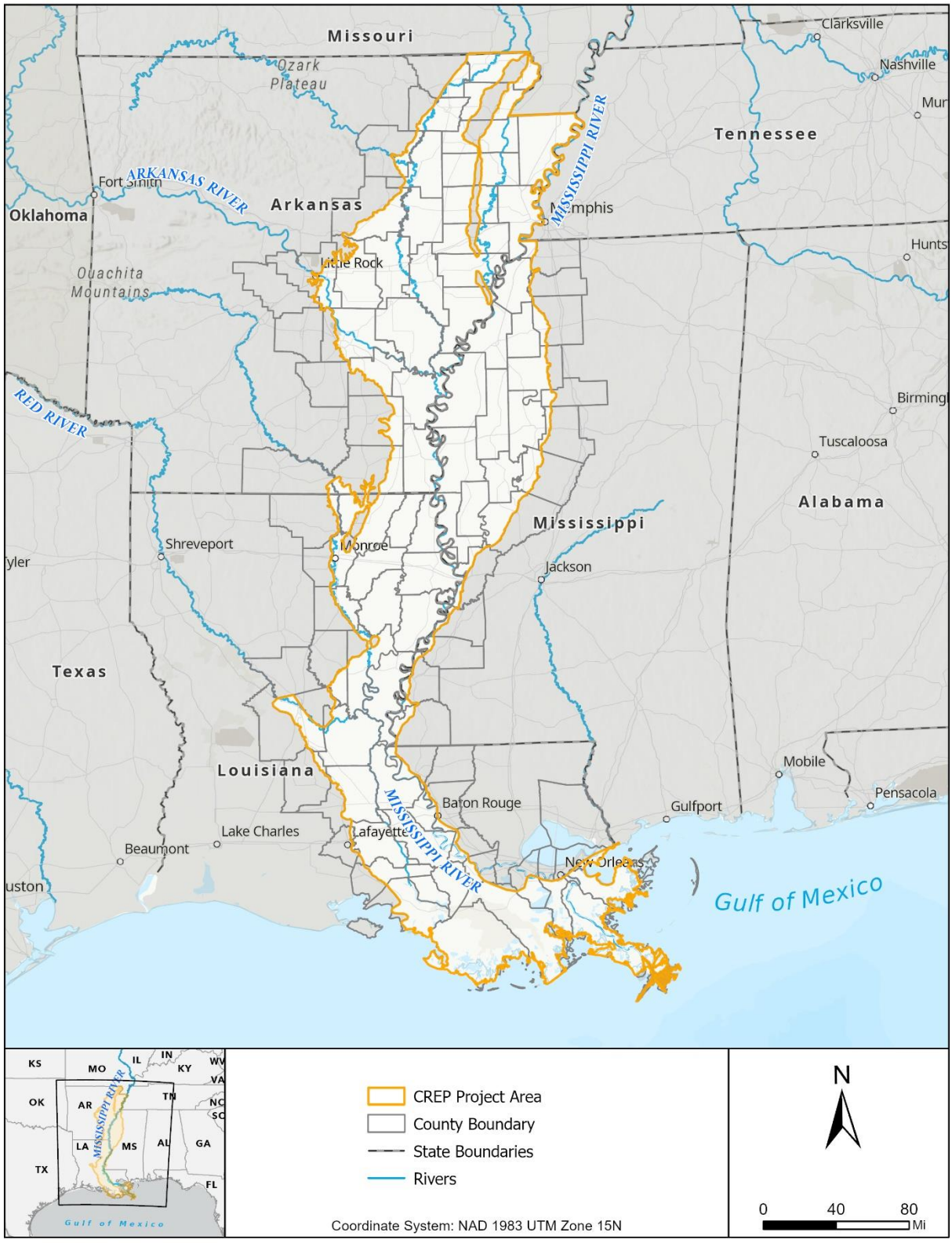

Figure 2.1-1 Proposed Floodplain Reforestation CREP Project Area

Table 2.1-1 Summary of Proposed CREP

CREP Component	Proposed Action
Extent of Eligible Land	38,895.2 square miles (24,893,000 acres)
Targeted Maximum Land Area Enrollment	3,600 acres
Anticipated minimum / maximum size of enrolled parcels	10 / 500 acres [1]
Extent of Eligible Land in Each State	**Arkansas** – 14844.1 square miles (9,500,200 acres) **Louisiana** – 16,291.2 square miles (10,426,000 acres) **Mississippi** – 7,759.9 square miles (4,966,300 acres)
Number of Counties or Parishes Included in the Project Area [2]	**Arkansas** – 31 (8 counties fully included and 23 counties partially included within the project area) **Louisiana** – 39 (11 parishes fully included and 28 partially included within the project area) **Mississippi** – 23 (9 counties fully included and 14 partially included within the project area)
Contract Duration	14 or 15-year federal CREP contract 30-year landowner participation agreement with TNC, affiliated partner organization(s)
Approved USDA CPs [3]	*CP22, Riparian Buffer* *CP23, Wetland Restoration* *CP31, Bottomland Timber Establishment on Wetlands*

Notes:
[1] Smaller or larger parcel sizes may be considered based on criteria defined in the CREP agreement between TNC and FSA.
[2] A list of counties and parishes within the extent of eligible land is provided in **Appendix B.**
[3] Approved CPs included in the Proposed Action are further discussed in **Section 2.1.3**.

2.1.2 Land and Ownership Eligibility

All lands proposed for enrollment under the Proposed Action would be required to meet cropland eligibility criteria in accordance with policy set forth by the 2018 Farm Bill and future Farm Bills and detailed in FSA Handbook, *2-CRP*. Specific eligibility criteria for parcels proposed for enrollment in the proposed CREP would include the following:

- The parcel is in private ownership (including family trusts) in the LMAV in Arkansas, Louisiana, or Mississippi.
- The parcel has been unforested for at least 10 years before enrollment.
- The parcel is physically accessible for planting and management activities.
- The parcel is not subject to any legal encumbrance (for example, a conservation easement or state/local restrictions) that prohibits forest management activities, including timber harvest. (TNC, 2024b)

Additionally, all lands must be entered into a 14- or 15-year federal CRP contract and a concurrent 30-year landowner participation agreement administered by TNC and affiliated partners (see **Section 1.4**). Landowners who have land enrolled under an existing CRP contract or an approved offer with a contract pending are ineligible for CREP on that acreage.

Generally, it is anticipated that the size of parcels enrolled in the proposed CREP would vary from a minimum of 10 acres to a maximum of 500 acres; however, smaller or larger parcel sizes could be considered based on criteria defined in the CREP agreement between TNC and FSA **(Table 2.1-1)**. The location, size, and number of tracts that would be enrolled in the CREP would be determined by individual contracts following implementation of the Proposed Action and is not currently known. As FSA's technical partner for implementation of CREP, NRCS would develop site-specific conservation plans based on National Conservation Practice Standards. NRCS would coordinate between FSA and the agricultural producer or landowner by providing technical assistance at a local level for resource assessment, CP design, and resource monitoring. Once eligible lands are identified for enrollment under the Proposed Action, site-specific environmental evaluations would be initiated by NRCS and provided to FSA for review and completion in accordance with FSA Handbook, *1-EQ*, prior to entering contracts.

2.1.3 Conservation Practices and Associated CREP Activities

Under the Proposed Action, eligible landowners would be permitted to select from the following three USDA CRP Conservation Practices to implement floodplain reforestation activities on their lands: *CP22, Riparian Buffer*; *CP23, Wetland Restoration*; and *CP31, Bottomland Timber Establishment on Wetlands*. These CPs are summarized in **Table 2.1-2**.

Table 2.1-2 Eligible USDA Conservation Practices Under the Proposed Action

Conservation Practice	Description
CP22, Riparian Buffer	The purpose of this CP is to remove nutrients, sediment, organic matter, pesticides, and other pollutants from surface runoff and subsurface flow; create shade to lower water temperature to improve aquatic habitat; and provide a source of detritus and large woody debris for aquatic organisms and habitat for wildlife. This would reduce pollution and protect surface and subsurface water quality.
CP23, Wetland Restoration, Floodplain	The purpose of this CP is to restore the functions and values of wetland ecosystems that have been devoted to agricultural use. The level of restoration of the wetland ecosystem is determined by the producer in consultation with NRCS or technical service provider.
CP31, Bottomland Timber Establishment on Wetlands	The purpose of this CP is to provide for the long-term viability of BLH stands of trees that would control surface erosion, reduce water, air, and land pollution, restore the functions and values of wetlands, promote carbon sequestration, and restore and connect wildlife habitat that has been devoted to agricultural use.

Source: USDA FSA, 2024

Installation and periodic maintenance of the proposed CPs would generally include the use of earthmoving equipment such as tractors, backhoes, and excavators to remove existing understory or non-native vegetation and prepare the planting sites; all-terrain vehicles and light and heavy trucks to transport workers, materials, tools, and equipment; and hand-held manual and power tools to plant and maintain vegetation. Some, all, or combinations of the following activities could occur during the Proposed Action:

- Removal of existing vegetation and grading, leveling and filling for site preparation.
- Use of equipment to prepare seedbed including disk, harrow, cultipacker, roller or similar equipment.
- Application of nutrients, minerals, and seed, including planting of shrubs and trees.
- Planting of temporary covers if necessary.
- Installation of tree shelters, netting, plastic tubes, fencing or other animal damage control devices.
- Seeding firebreaks, fuelbreaks, or firelanes.
- Construction of structures to regulate flow and restore hydrology.
- Installation and periodic maintenance of irrigation piping and water facilities outside the riparian buffer.
- Application of approved herbicides and pesticides.

Generally, TNC or TNC-approved contractors installing and maintaining CPs included in the Proposed Action would adhere to state and local requirements and applicable best management practices (BMPs) to prevent or minimize the erosion of exposed soils, discharges of sediments and pollutants (including petroleum products and other hazardous materials) to receiving waterbodies, and the introduction or spread of invasive or exotic plant species. Such BMPs could include, but would not be limited to: using erosion and sediment control fencing; periodically wetting or temporarily seeding soils that would remain exposed for extended periods; following label requirements for chemical application of herbicide and pesticides or considering alternatives to chemical treatments; timing planting to minimize disturbance to seasonal wildlife activities; timing activities to minimize particulate, dust, and other air pollutants; rinsing vehicles and equipment prior to entering and leaving planting sites; and prohibiting the refueling or maintenance of vehicles and equipment within planting sites.

2.1.4 Carbon Sequestration

TNC would monitor lands planted under the Proposed Action and compare them with similarly forested lands not enrolled in the proposed program to determine the amount of carbon they sequester and their contribution to mitigating global climate change. Once verified under an approved forest carbon accounting methodology, carbon credits for the enrolled lands would be sold to companies to help reduce their carbon footprint and provide revenue to further reforestation efforts.

2.2 Alternatives

This PEA analyzes potential environmental impacts from the Proposed Action and No Action Alternatives. These alternatives are briefly described below.

2.2.1 Proposed Action Alternative

The Proposed Action Alternative would implement the Proposed Acton as described in **Section 2.1**. FSA has determined that the Proposed Action Alternative would meet the purpose of and need for the Proposed Action as described in **Section 1.5**.

2.2.2 No Action Alternative

Under the No Action Alternative, the proposed floodplain reforestation CREP described in **Section 2.1** would not be implemented and existing conditions would continue. Lands in portions of Arkansas, Louisiana, and Mississippi within the LMAV that would otherwise be eligible for the proposed CREP would continue to experience low agricultural productivity due to frequent flooding. Opportunities to improve water quality in the Mississippi River and Gulf of Mexico by reducing sediment and nutrient runoff, sequestering CO_2, restoring wildlife habitat, creating additional recreational uses, reducing crop insurance and disaster relief claims, and providing financial benefits to landowners would not be realized.

2.2.3 Alternative Actions Eliminated from Further Consideration

Based on TNC's experience with similar programs it has managed since the late 1990s, and through the review of historic and projected trends, FSA and TNC determined that a targeted enrollment of up to 3,600 acres within three states was an optimal area to assess viability and identify lessons learned for a floodplain reforestation program. Smaller or larger areas of targeted enrollment in fewer or additional states were determined to be less representative or manageable relative to the proposed program and therefore, were not considered further for detailed analysis.

2.3 Comparison of Potential Environmental Consequences

Potential effects from the Proposed Action and No Action Alternatives are summarized in **Table 2.3-1**. This summary is based on the detailed analysis of the affected environment and potential impacts for each resource presented in **Chapter 3**. For all resources analyzed in this PEA, potential effects from the Proposed Action and No Action Alternatives would not be significant.

Table 2.3-1 Summary of Potential Effects

Resource	Proposed Action Alternative	No Action Alternative
Biological Resources	Short-term, non-significant adverse effects and both short- and long-term beneficial effects on biological resources. Potential adverse effects on special status species would be avoided, minimized, or mitigated through site-specific Section 7 consultation with USFWS prior to enrolling lands in the proposed CREP.	No significant adverse effects.
Cultural Resources	No significant adverse effects. Potential adverse effects would be avoided, minimized, or mitigated through site-specific Section 106 consultation with SHPOs and Native American tribes prior to enrolling lands in the proposed CREP.	No significant adverse effects.

Table 2.3-1 Summary of Potential Effects

Resource	Proposed Action Alternative	No Action Alternative
Water Resources	Short-term, non-significant adverse effects and long-term beneficial effects on water resources. Any long-term adverse effects from periodic maintenance of vegetation installed under the proposed CPs would not be significant.	No significant adverse effects.
Air Quality	Short-term, non-significant adverse effects and long-term beneficial effects on air quality. Any long-term adverse effects from periodic maintenance of vegetation installed under the proposed CPs would not be significant.	No significant adverse effects.
Soils	Short-term, non-significant adverse effects and long-term beneficial effects on soils. Any long-term adverse effects from periodic maintenance of vegetation installed under the proposed CPs would not be significant.	No significant adverse effects.
Other Protected Resources	Short-term, non-significant adverse effects and long-term beneficial effects on other protected resources. Any long-term adverse effects from periodic maintenance of vegetation installed under the proposed CPs would not be significant.	No significant adverse effects.
Socioeconomics and Recreation	Beneficial short-term and long-term effects on socioeconomics and recreation. No significant adverse effects.	No significant adverse effects.
Environmental Justice	Beneficial short-term and long-term effects on communities with environmental justice concerns. No significant adverse effects.	No significant adverse effects.
Cumulative Effects	Beneficial cumulative effects and no cumulatively significant adverse effects when considered with other past, present, and reasonably foreseeable actions.	No cumulatively significant adverse effects.

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3 Affected Environment and Environmental Consequences

This chapter describes the affected environment and environmental consequences for resources that would potentially be affected by the Proposed Action. Resources that were dismissed from detailed analysis because the Proposed Action would have no potential to affect them are also briefly summarized.

3.1 Resources Analyzed in the Programmatic Environmental Assessment

The following environmental resources are evaluated in this chapter: biological resources, cultural resources, water resources, air quality, soils and topography, other protected resources, socioeconomics and recreation, and environmental justice. The discussion of each resource includes a definition of the resource, summary of applicable regulatory requirements, a description of the affected environment (that is, existing conditions) of each resource, and potential impacts on that resource that could result from the Proposed Action and No Action Alternatives. Criteria for determining the significance of potential impacts on each resource are also provided.

Generally, the location and size of lands that would be enrolled under the Proposed Action, if selected for implementation, are not currently known. CPs included in the Proposed Action could be implemented on eligible lands throughout the project area **(Figure 2.1-1)**. Therefore, unless otherwise noted, resources addressed in this chapter are evaluated at the regional or statewide level, as applicable. Once eligible lands are identified, site-specific environmental evaluations would be initiated by NRCS and provided to FSA for review and completion in accordance with FSA Handbook, *1-EQ,* prior to entering contracts.

3.2 Resource Areas Dismissed from Analysis

Table 3.2-1 summarizes the resources that were dismissed from detailed analysis in the PEA because the Proposed Action would have no potential to affect them.

Table 3.2-1 Rationale for Dismissal of Resource Areas

Resource	Rationale for Dismissal
Geology and Topography	Land disturbance associated with the Proposed Action would be relatively shallow and localized. Such disturbance would have no potential to penetrate underlying geologic strata or modify, damage, destroy, or otherwise alter unique or noteworthy geological and topographic features underlying lands that would be enrolled under the Proposed Action. CPs included in the Proposed Action would generally be installed on land that is already relatively flat and level and would be installed in a manner that promotes positive drainage to receiving water bodies or stormwater management infrastructure, as applicable. The Proposed Action would not notably change local topography or create new or unusual topographic features that would be inconsistent with local topography. Topographic conditions on and around lands where approved CPs would be installed would be similar to those that existed prior to installation. Therefore, geology and topography were dismissed from detailed analysis in the PEA.

Table 3.2-1 Rationale for Dismissal of Resource Areas

Resource	Rationale for Dismissal
Prime and Unique Farmland, and Farmland of Statewide Importance	The Farmland Protection Policy Act is intended to minimize the impact federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. Although lands enrolled in the CREP would be temporarily removed from agricultural production, they could be converted back to agricultural use following the expiration or cancellation of a CREP contract. Further, the enrollment of up to 3,600 acres of frequently flooded, low-productivity farmland in the CREP under the Proposed Action would represent a small fraction of available agricultural land in the LMAV and would have no discernible effect on the region's agricultural production. Therefore, this resource was dismissed from detailed analysis in the PEA.
Noise	Noise associated with the implementation of proposed CPs and the periodic maintenance of vegetation, once established, would be similar to noise from activities typically occurring on land in active agricultural production. Noise generated by worker activity and equipment during site preparation and planting would cease upon completion of those activities. Noise from the periodic maintenance of vegetation installed under the Proposed Action would be relatively infrequent and would not noticeably change the ambient noise environment in the vicinity of the project areas. Therefore, this resource was dismissed from detailed analysis in the PEA.
Coastal Zone Management	The Coastal Zone Management Act of 1972 requires federal agencies to determine the consistency of activities they fund or authorize with the enforceable policies of a state's federally approved coastal zone program. Arkansas does not have a coastal zone program, and coastal zone lands in Mississippi are outside the proposed project area. If land within the Louisiana coastal zone would be proposed for enrollment under the Proposed Action, FSA would determine the consistency of such an enrollment and the implementation of approved CPs with the policies of the federally approved Louisiana Coastal Resources Program during the site-specific environmental review and consultation process. Therefore, Coastal Zone Management is not addressed in this PEA.
Visual Quality and Aesthetics	The Proposed Action would not introduce new permanent visual elements that would be inconsistent with or disruptive to the predominant visual character of immediate and surrounding areas. The visual quality and character of lands on which CPs would be installed under the Proposed Action, as well as adjacent and nearby lands, would continue to primarily be rural or agrarian. Therefore, this resource was dismissed from detailed analysis in the PEA.

3.3 Biological Resources

3.3.1 Definition of Resource

Biological resources include native and introduced plant and animal species and the habitats in which they occur. Biological resources evaluated in this PEA consist of vegetation, wildlife, and special status species. Special status species include those listed as threatened and endangered under the ESA, federally designated critical habitat, bird species protected under the Migratory Bird Treaty Act (MBTA), and bald eagles (*Haliaeetus leucocephalus*) protected under the Bald and Golden Eagle Protection Act (BGEPA). Noxious weeds are not addressed because CREP contracts require preparing and adhering to conservation plans that specify measures to control the introduction, spread, and growth of such species.

The ESA of 1973 (16 United States Code [U.S.C.] §§ 1531-1544) establishes federal protections for threatened and endangered species of fish, wildlife, and plants. Section 7 of the ESA requires federal agencies to consider the effects of their proposed activities on federally listed species. Federally listed terrestrial and freshwater species are managed by USFWS.

The MBTA of 1918 establishes federal responsibilities for protecting nearly all migratory species of birds, including their eggs and nests. The MBTA prohibits “take” (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by USFWS. USFWS is responsible for administering the provisions of the MBTA and maintaining a list of protected bird species.

Although delisted from the ESA in 2007, the bald eagle remains federally protected under the BGEPA (16 U.S.C. §§ 668-668d). The BGEPA prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald or golden eagles, including their parts (including feathers), nests, or eggs. Bald eagles are also protected under the MBTA.

3.3.2 Affected Environment

The analysis of biological resources in this section is based on Level III ecoregions defined by the Commission for Environmental Cooperation (CEC). Ecoregions are areas of relatively homogenous soils, vegetation, climate, and geology, with associated species of adapted wildlife. As shown on **Figure 3.3-1**, the project area is primarily located within the Mississippi Alluvial Plain Level III ecoregion. This riverine ecoregion extends from southern Illinois south to the Gulf of Mexico, and has a mild, mid-latitude, humid subtropical climate with mild winters and hot and humid summers. Temperatures and precipitation increase from north to south (CEC, 1997).

The LMAV is the nation’s largest floodplain, covering more than 24 million acres across portions of seven states: Arkansas, Illinois, Kentucky, Louisiana, Mississippi, Missouri, and Tennessee. The floodplain consists of an intricate network of sloughs, oxbows, side channels and backwater areas that support a diverse forested wetland ecosystem. These complex terrestrial and aquatic habitats support numerous fish and wildlife species, though many populations are believed to be stressed or in decline (Killgore et al., 2014).

3.3.2.1 Vegetation

Once the largest forested wetland ecosystem in North America, nearly 80 percent of the forest cover within the 24-million-acre LMAV floodplain has been lost, primarily due to conversion to farmland. It is one of the most altered ecoregions in the United States. Crops include soybeans, cotton, corn, rice, wheat, pasture, and some sugarcane in the south (NFWF, 2019; USDA NRCS, 2022).

Figure 3.3-1 Level III Ecoregions In and Around the Project Area

Remaining native vegetation, which may or may not be present adjacent to farmland that would potentially be eligible for enrollment in the proposed CREP, consists of bottomland deciduous forest. River swamp forests in the ecoregion contain baldcypress (*Taxodium distichum*) and water tupelo (*Nyssa aquatica*). Hardwood swamp forests in the ecoregion include water hickory (*Carya aquatica*), red maple (*Acer rubrum*), green ash (*Fraxinus pennsylvanica*), and river birch (*Betula nigra*). In higher, seasonally flooded areas, sweetgum (*Liquidambar styraciflua*), sycamore (*Platanus occidentalis*), laurel oak (*Quercus laurifolia*), Nuttall oak (*Quercus texana*), and willow oak (*Quercus phellos*) can be present (CEC, 2011).

Lands that would potentially be eligible for enrollment in the proposed CREP have been unforested for at least 10 years and existing vegetation on these lands generally consists of row crops or grasses used for livestock grazing.

3.3.2.2 Wildlife

The project area lies within the Mississippi Flyway, where more than 40 percent of North America's waterfowl and 60 percent of all U.S. bird species migrate or winter (NFWF, 2024). More than 100 land birds, such as Swainson's warbler (*Limnothlypis swainsonii*), prothonotary warbler (*Protonotaria citrea*), and swallow-tailed kite (*Elanoides forficatus*) also breed here (LMVJV, 2015). The Mississippi River and its side channels, tributaries, oxbows and backwaters support at least 90 fish species, including several charismatic, long-lived species like alligator gar (*Atractosteus spatula*) and pallid sturgeon (*Scaphirhynchus albus*), alligators (*Alligator mississippiensis*), as well as approximately 50 freshwater mussel species (CEC, 2011; USACE, 2015).

The widespread loss of forest and wetland habitat in the ecoregion has impacted wildlife and reduced bird populations, although it is still a major bird migration corridor. In addition to migratory waterfowl, common bird species include:

- mourning dove *(Zenaida macroura)*
- wild turkey *(Meleagris gallopavo)*
- cormorant spp.
- heron spp.
- egret spp.
- wood thrush *(Hylocichla mustelina)*
- yellow-throated vireo (*Vireo flavifrons*)

Representative mammal species include:

- white-tailed deer *(Odocoileus virginianus)*
- black bear *(Ursus americanus)*
- bobcat *(Lynx rufus)*
- gray fox *(Urocyon cinereoargenteus)*
- raccoon *(Procyon lotor)*
- swamp rabbit *(Sylvilagus aquaticus)*

3.3.2.3 Special Status Species

Federally Listed Species

Thirty-five federally listed threatened and endangered species are known or have potential to occur in the project area. Critical habitats have been federally designated in the project area for four species: Gulf sturgeon *(Acipenser oxyrinchus)*, piping plover *(Charadrius melodus)*, rabbitsfoot *(Quadrula c. cylindrica)*, and western fanshell *(Cyprogenia aberti)* **(Figure 3.3-2, Figure 3.3-3,** and **Figure 3.3-4)** (USFWS, 2024a). Federally listed, proposed, non-essential experimental populations, and candidate species known or having potential to occur in the project area, and species for which federal critical habitat has been designated, are listed in **Table 3.3-1.** An Official Species List for the project area was obtained using the USFWS Information for Planning and Consultation query tool and is included in **Appendix C**.[1]

In accordance with Section 7 of the ESA, FSA is consulting with USFWS regarding the Proposed Action and has requested additional information on federally listed species and critical habitat that could potentially be affected. Section 7 correspondence is shown in **Appendix A**.

Several of the species listed in **Table 3.3-1** are known to occur in agricultural and improved pasture habitat. In Louisiana, gopher tortoise (*Gopherus polyphemus*), monarch (*Danaus plexippus*), whooping crane (*Grus americana*), and northern long-eared bat (*Myotis septentrionalis*) occur in this habitat (Holcomb et al., 2015). The gopher tortoise requires open canopy with a diverse array of groundcover vegetation with widely spaced trees and shrubs (USFWS, 2024b). Monarch habitat consists of open areas with flowering plants; milkweed is required for breeding (USFWS, 2024c). The whooping crane breeds, migrates, winters, and forages in a variety of habitats, including pastures and agricultural fields (USFWS, 2024d). The northern long-eared bat roosts in trees during summer and typically hibernates in caves during the winter. In the absence of suitable cave habitat, bats are limited to both roosting and wintering in trees or manmade structures, which may include those on agricultural lands or within small pockets of remnant natural habitat (Garcia et al., 2022; Holcomb et al., 2015). In Arkansas, the piping plover may occur in cropland (Arkansas Game and Fish Commission, 2015). In Mississippi, the eastern black rail (*Laterallus jamaicensis ssp. jamaicensis*), gopher tortoise, and tricolored bat (*Perimyotis subflavus*) may occur in this habitat or within remnant pockets of suitable habitat (Mississippi Wildlife, Fisheries, and Parks, 2023). The eastern black rail requires dense vegetative cover in a variety of marsh habitats (USFWS, 2019). The tricolored bat forages primarily over forest edges and waterways and roosts among leaf clusters of trees or in manmade structures such as barns and bridges (USFWS, n.d.).

[1] Although emerald dragonfly *(Somatochlora hineana)* and Missouri bladderpod (*Physaria filiformis*) are included in the USFWS Official Species List, these species are not listed in **Table 3.3-1** because GIS data used to generate the list inadvertently included small portions of adjacent states that are not within the project area. Additional analysis was performed to verify that the species' range does not overlap the project area.

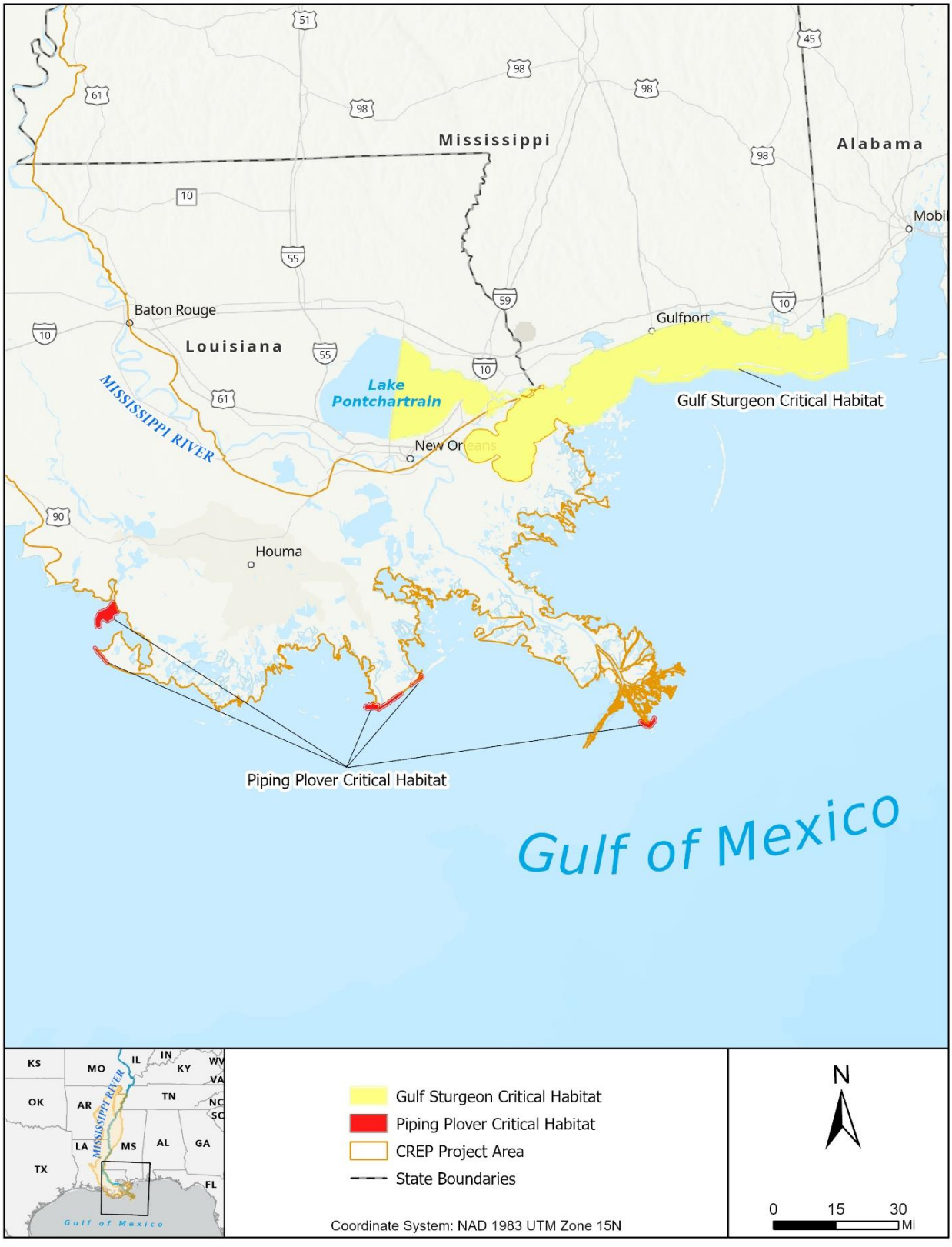

Figure 3.3-2 Gulf Sturgeon and Piping Plover Critical Habitats In and Near the Project Area

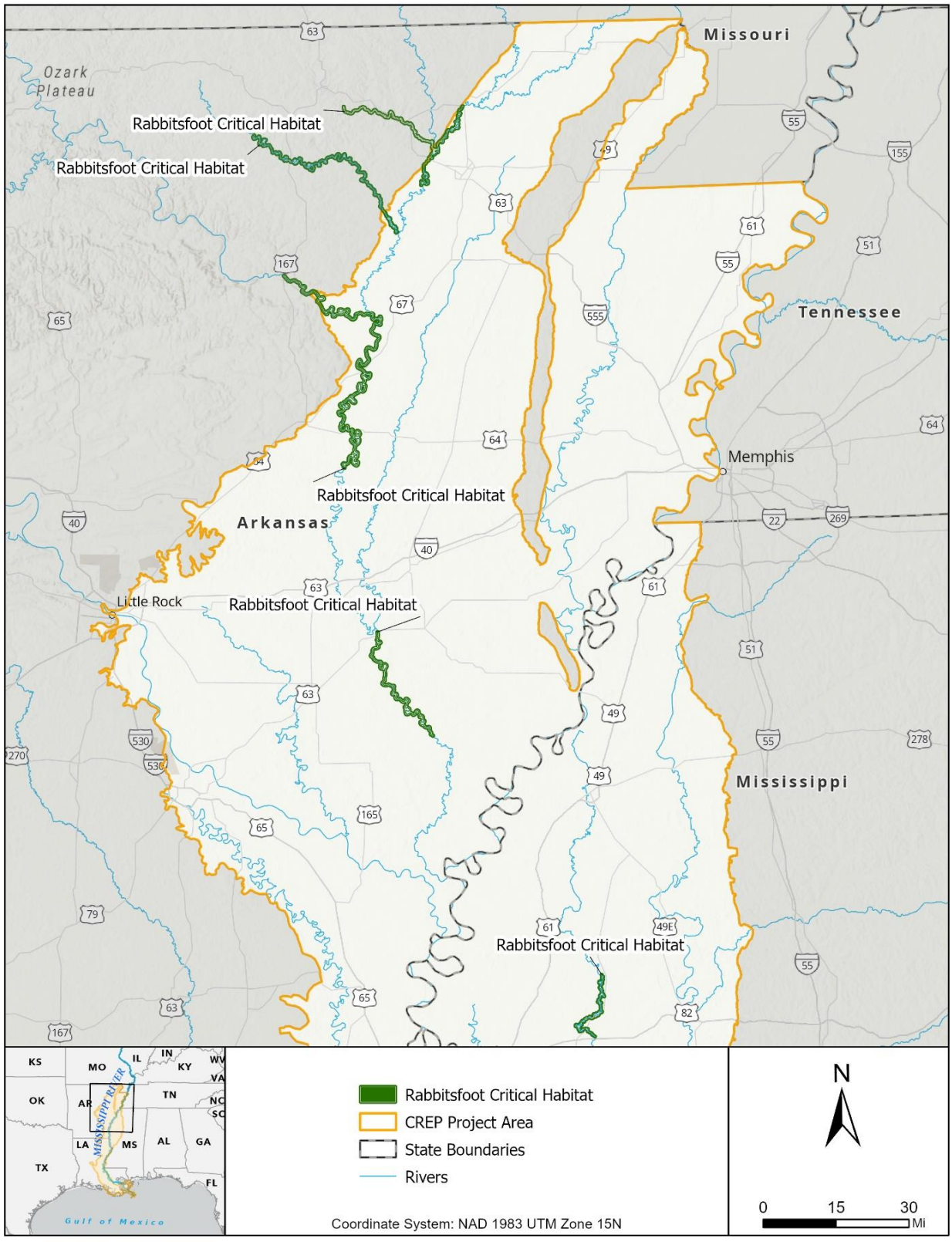

Figure 3.3-3 Rabbitsfoot Critical Habitat In and Near the Project Area

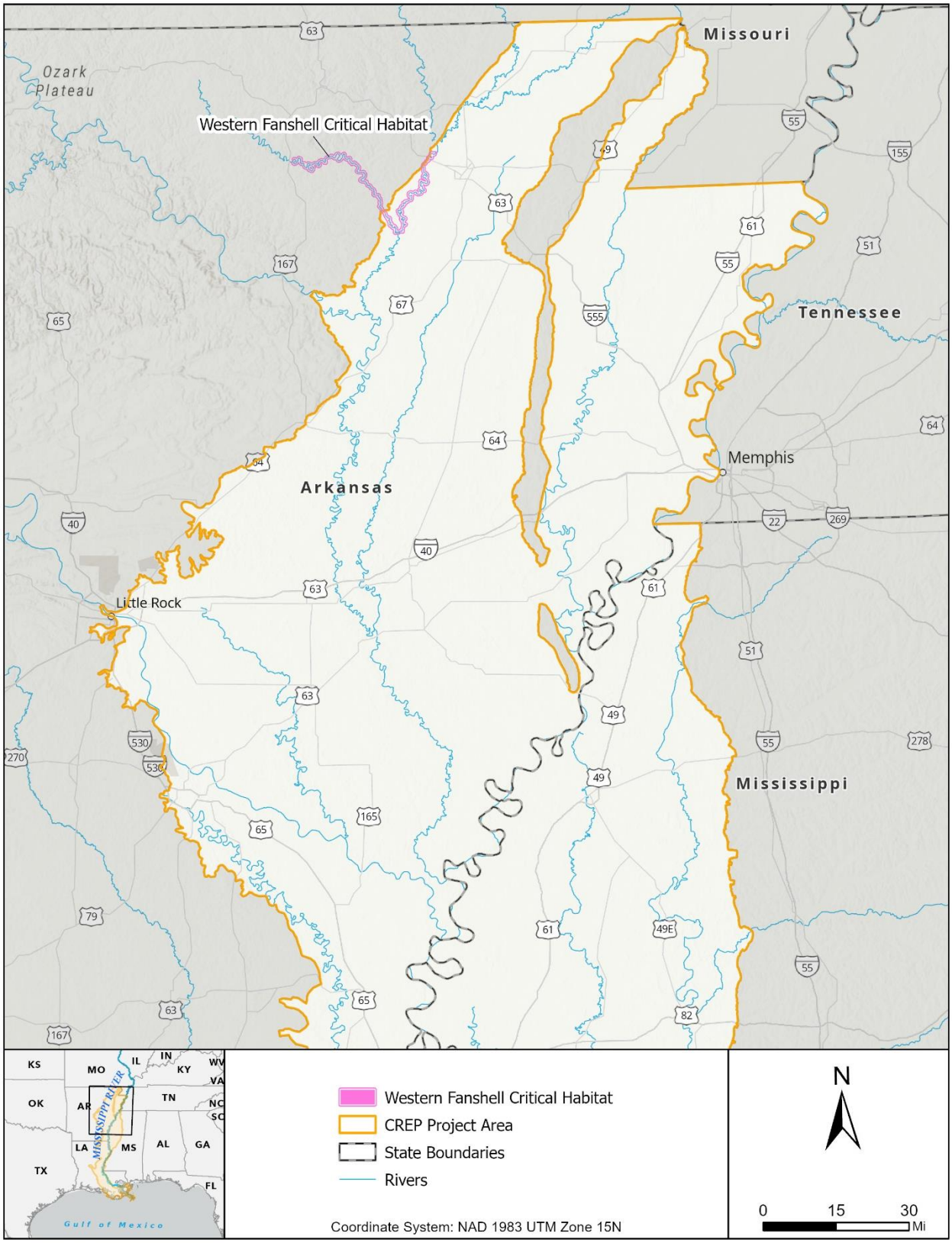

Figure 3.3-4 Western Fanshell Critical Habitat In and Near the Project Area

Table 3.3-1 Federally Listed Species Known or Having Potential to Occur in the Project Area

Common Name	Scientific Name	Listing Status	Critical Habitat Designated in Project Area	Known to Occur in Agricultural Land
Birds				
eastern black rail	*Laterallus jamaicensis ssp. jamaicensis*	T	No	No
ivory-billed woodpecker	*Campephilus principalis*	E	No	No
piping plover	*Charadrius melodus*	T	Yes	No
red-cockaded woodpecker	*Picoides borealis*	E	No	No
rufa red knot	*Calidris canutus rufa*	T	Proposed	No
whooping crane	*Grus americana*	EXPN	No	Yes
Fish				
bayou darter	*Etheostoma rubrum*	T	No	No
Gulf sturgeon	*Acipenser oxyrinchus*	T	Yes	No
pallid sturgeon	*Scaphirhynchus albus*	E	No	No
Clams				
Curtis pearlymussel	*Epioblasma florentina curtisii*	E	No	No
fat pocketbook	*Potamilus capax*	E	No	No
Louisiana pearlshell	*Margaritifera hembeli*	T	No	No
pink mucket (pearlymussel)	*Lampsilis abrupta*	E	No	No
rabbitsfoot	*Quadrula cylindrica cylindrica*	T	Yes	No
salamander mussel	*Simpsonaias ambigua*	PE	Proposed	No
scaleshell mussel	*Leptodea leptodon*	E	No	No
sheepnose mussel	*Plethobasus cyphyus*	E	No	No
snuffbox mussel	*Epioblasma triquetra*	E	No	No
western fanshell	*Cyprogenia aberti*	T	Yes	No
Insects				
monarch butterfly	*Danaus plexippus*	C	No	Yes
Plants				
pondberry	*Lindera melissifolia*	E	No	No
whorled sunflower	*Helianthus verticillatus*	E	No	No
Reptiles				
alligator snapping turtle	*Macrochelys temminckii*	PT	No	No
gopher tortoise	*Gopherus polyphemus*	T	No	Yes
hawksbill sea turtle	*Eretmochelys imbricata*	E	No	No
Kemp's Ridley sea turtle	*Lepidochelys kempii*	E	Proposed	No
leatherback sea turtle	*Dermochelys coriacea*	E	No	No
loggerhead sea turtle	*Caretta caretta*	T	No	No
ringed map turtle	*Graptemys oculifera*	T	No	No
Mammals				
gray bat	*Myotis grisescens*	E	No	No
Indiana bat	*Myotis sodalis*	E	No	No
northern long-eared bat	*Myotis septentrionalis*	E	No	Yes

Table 3.3-1 Federally Listed Species Known or Having Potential to Occur in the Project Area

Common Name	Scientific Name	Listing Status	Critical Habitat Designated in Project Area	Known to Occur in Agricultural Land
tricolored bat	*Perimyotis subflavus*	PE	No	No
West Indian manatee	*Trichechus manatus*	T	No	No
Amphibians				
Ozark hellbender	*Cryptobranchus alleganiensis bishopi*	E	No	No

Notes:
Sources: USFWS, 2024a; Arkansas Game and Fish Commission, 2015; Holcomb et al., 2015.
C = Candidate; E = Endangered; EXPN = Non-essential Experimental; Population; PE = Proposed Endangered; T = Threatened

State-Listed Species

Louisiana has identified 352 plants, 91 birds, 24 mammals, 40 mollusks, 25 crustaceans, 60 non-crustacean arthropods, 40 inland fishes, 20 marine fishes, 22 amphibians, and 46 reptiles as species of greatest conservation need (LDWF, 2022a; LDWF, 2022b). Species of greatest conservation need known to occur in agriculture and improved pasture habitat include 10 crustaceans (crawfish), 13 non-crustacean arthropods (tarantula, ants, a bee, butterflies and moths), 2 amphibians (frogs), 6 reptiles (tortoise, lizard, and snakes), 24 birds, and 15 mammals (bats, black bear, weasel, skunk, squirrel, gophers, and mice).

Mississippi is in the process of updating its State Wildlife Action Plan for 2025 and has identified 1,080 species as species of greatest conservation need. These include 21 amphibians, 86 birds, 76 freshwater fishes, 20 marine fishes, 18 land mammals, 6 marine mammals, 198 invertebrates, 31 land reptiles, 5 marine reptiles, and 619 plants (Mississippi Wildlife, Fisheries, and Parks, 2023). The potential presence of these species is predicted by habitat. Species potentially present in row crops and hay/pastureland habitat in the Mississippi River Alluvial Plain are listed in **Table 3.3-2**.

Table 3.3-2 Mississippi State-Listed Species Known or Having Potential to Occur in the Project Area

Common Name	Scientific Name	Common Name	Scientific Name
Birds			
grasshopper sparrow	*Ammodramus savannarum*	least bittern	*Ixobrychus exilis*
LeConte's sparrow	*Ammospiza leconteii*	loggerhead shrike	*Lanius ludovicianus ludovicianus*
northern pintail	*Anas acuta*	migrant loggerhead shrike	*Lanius ludovicanus migrans*
Chuck-will's-Widow	*Antrostomus carolinensis*	short-billed dowitcher	*Limnodromus griseus*
short-eared owl	*Asio flammeus*	yellow-crowned night-heron	*Nyctanassa violacea*
American bittern	*Botaurus lentiginosus*	black-crowned night-heron	*Nycticorax nycticorax*
pectoral sandpiper	*Calidris melanotos*	roseate spoonbill	*Platelea ajaja*

Table 3.3-2 Mississippi State-Listed Species Known or Having Potential to Occur in the Project Area

Common Name	Scientific Name	Common Name	Scientific Name
semipalmated sandpiper	*Calidris pusilla*	American golden-plover	*Pluvialis dominica*
buff-breasted sandpiper	*Calidris subruficollis*	purple gallinule	*Porphyrio martinicus*
common nighthawk	*Chordeiles minor*	king rail	*Rallus elegans*
northern bobwhite	*Colinus virginianus*	American woodcock	*Scolopax minor*
common ground dove	*Columbina passerina*	field sparrow	*Spizella pusilla*
yellow rail	*Coturnicops noveboracensis*	eastern meadowlark	*Sturnella magna*
merlin	*Falco columbarius*	lesser yellowlegs	*Tringa flavipes*
Reptiles and Amphibians			
smallmouth salamander	*Ambystoma texanum*	prairie kingsnake	*Lampropeltis calligaster calligaster*
Invertebrates			
American bumblebee	*Bombus pensylvanicus*		

Source: Mississippi Wildlife, Fisheries, and Parks, 2023

Species of greatest conservation need that may occur in the Mississippi River Alluvial Plain ecoregion in Arkansas are listed in **Table 3.3-3** (Arkansas Game and Fish Commission, 2015).

Table 3.3-3 Arkansas State-Listed Species Known or Having Potential to Occur in the Project Area

Common Name	Scientific Name	Common Name	Scientific Name
Mammals			
Rafinesque's big-eared bat	*Corynorhinus rafinesquii*	long-tailed weasel	*Mustela frenata*
American badger	*Taxidea taxus*		
Birds			
sharp-shinned hawk	*Accipter striatus*	American bittern	*Botaurus lentiginosus*
Le Conte's sparrow	*Ammodramus leconteii*	Smith's longspur	*Calcarius pictus*
grasshopper sparrow	*Ammodramus savannarum*	sanderling	*Calidris alba*
American black duck	*Anas rubripes*	dunlin	*Calidris alpina*
anhinga	*Anhinga anhinga*	buff-breasted sandpiper	*Calidris subruficollis*
Sprague's pipit	*Anthus spragueii*	yellow-billed cuckoo	*Coccyzus amerianus*
Reptiles and Amphibians			
mole salamander	*Ambystoma talpoideum*	crawfish frog	*Lithobates areolatus*
dwarf salamander	*Eurycea quadridigitata*	Illinois chorus frog	*Pseudacris illinoensis*
bird-voiced treefrog	*Hyla avivoca*	eastern spadefoot	*Scaphiopus holbrookii*
common worm snake	*Carphophis amoe*	chicken turtle	*Deirochelys reticularia*
slender glass lizard	*Ophisaurus attenuatus*		
Invertebrates			
pink mucket	*Lampsilis abrupta*	scaleshell	*Leptodea leptodon*

Table 3.3-3 Arkansas State-Listed Species Known or Having Potential to Occur in the Project Area

Common Name	Scientific Name	Common Name	Scientific Name
hickorynut	*Obovaria olivaria*		
Fishes			
lake sturgeon	*Acipenser fulve*	Alabama shad	*Alosa alabamae*
alligator gar	*Astracteus spatula*		
Insects			
winter stonefly	*Allocapnia malverna*	lacy-winged roadside-skipper	*Amblyscirtes aesculapiu*
twelve-spotted tiger beetle	*Cicindela duodecimguttata*		

Source: Arkansas Game and Fish Commission, 2015

Currently, more than 1,000 bird species are protected under the MBTA; this likely includes most birds occurring in the project area for all or part of the year. Bald eagles are distributed throughout the project area and are found mostly along major rivers and other large bodies of water. USFWS recommends maintaining a 330-foot buffer from individual eagles, their nests, and roosts, at all times, and a 660-foot buffer during the breeding season, (October 1 to May 15 in the southeastern United States) (USFWS, 2024e).

3.3.3 Environmental Consequences Evaluation Criteria

Adverse impacts on biological resources would be considered significant if implementation of the Proposed Action would impede or prevent the continued propagation of common plants and animals at the community, population, or species level; would result in an adverse effect on federally listed threatened and endangered species or critical habitat that could not be avoided or mitigated through consultation with USFWS; or resulted in the unauthorized "take" of birds protected under the MBTA or BGEPA.

3.3.4 Environmental Consequences – Proposed Action Alternative

3.3.4.1 Vegetation

Generally, the planting of site-appropriate hardwood trees and associated earth-disturbing activities under the Proposed Action would have the potential to affect existing vegetation on lands identified for enrollment. The need to restore BLH in the LMAV has long been recognized and is a priority for many entities (USACE, 2015). In the short term, the planting of trees on enrolled lands would likely involve the clearing of non-native vegetation (including crops) and the thinning or trimming of established native vegetation to prepare areas for planting. Although such activities could have an adverse impact on vegetation, adherence to applicable BMPs would minimize adverse effects on native species to the extent possible. Therefore, short-term adverse effects on vegetation would not be significant. The removal of non-native or invasive species would have a beneficial effect on vegetation.

In the long term, the proposed reforestation of agricultural lands would result in greater vegetative species density and diversity and improve the quality of habitats for terrestrial and aquatic plants

and aquatic organisms by decreasing turbidity and enrichment from fertilizers, which would in turn allow more sunlight to reach submerged rooted vegetation. These practices would also improve soil infiltration and reduce downstream flooding, thereby having beneficial effects on downstream species that might otherwise be periodically inundated by floodwaters. The establishment of native vegetation under the Proposed Action Alternative would also reduce the proliferation of non-native and invasive plant species. Therefore, the Proposed Action Alternative would have beneficial long-term effects on vegetation.

3.3.4.2 Wildlife

Human activity, noise, ground disturbance, and vegetation removal during implementation of the Proposed Action Alternative could disturb, or displace wildlife that could temporarily disrupt nesting, foraging, and breeding activities. It is anticipated that more mobile species, such as mammals and birds, would relocate to nearby areas offering similar habitat conditions and would resume these activities relatively quickly once the activity ceases. In some instances, less-mobile individuals could be inadvertently injured or killed. Adherence to site-specific BMPs would further minimize the temporary disturbance of wildlife populations during project implementation. Following the completion of project activities, most individual animals would likely return to the sites and resume nesting, breeding, and foraging as vegetation matures and suitable habitat is re-established; as such, any short-term adverse effects from project implementation would be temporary. These adverse effects would be limited to individual animals and would not impede or prevent the continued propagation of animals at the community, population, or species level. Therefore, short-term adverse effects on wildlife from the Proposed Action Alternative would not be significant.

In the long term, restoring native vegetation would provide suitable habitat and encourage nesting, breeding, and foraging by wildlife. One of the purposes of the Proposed Action is to improve wildlife habitat, both by restoring BLH habitat and by reducing sediment and nutrient runoff into the Mississippi River and the Gulf of Mexico. Priority species in the LMAV include forest-dependent wildlife species such as the Louisiana black bear (*Ursus americanus luteolus*), ivory-billed woodpecker (*Campephilus principalis*), and forest interior songbirds (LMVJV, 2007).

Game species that depend on a diversity of habitat include white-tailed deer, wild turkey, squirrel, rabbit, and many species of waterfowl (LMVJV, 2007). Many species, like American woodcock, rely on the early successional stages of BLH forests (Kelley et al., 2008). Forest interior songbirds dependent upon large expanses of BLH forests have declined (Twedt et al., 2002), and would therefore benefit from the Proposed Action. Louisiana black bears depend on large, complex forest structure for forage, nesting, denning, or bedding sites, and successful reproduction (USFWS, 1995). Reptiles, amphibians, and many mammals, including the Indiana bat (*Myotis sodalis)*, also depend on BLH forests for cover, food, and successful reproduction.

Overall, the Proposed Action would expand and improve habitat for terrestrial and semiaquatic wildlife, and predators who rely on forage species within those habitats. Planting trees near streams and waterbodies would reduce the amount of sediments and nutrients in agricultural runoff to receiving streams and waterbodies. This would improve water quality and habitat for fish and other

aquatic organisms. Therefore, the Proposed Action Alternative would have beneficial long-term effects on common wildlife species.

3.3.4.3 Special Status Species

Generally, restoring native vegetation and removing non-native or invasive vegetation through the Proposed Action Alternative, and corresponding improvements to water quality through the reduction of sediments and nutrients in agricultural runoff, would be anticipated to have long-term beneficial effects on special status species by providing or improving nesting, breeding, and foraging habitats. Special status species that could experience long-term beneficial effects from the restoration of BLH forests and improvement of water quality include:

- eastern black rail *(Laterallus j. ssp. jamaicensis)*
- piping plover *(Charadrius melodus)*
- ivory-billed woodpecker (*Campephilus principalis*)
- whooping crane (*Grus americana*)
- rufa red knot *(Calidris canutus rufa)*
- red-cockaded woodpecker (*Picoides borealis*)
- alligator snapping turtle *(Macrochelys temminckii)*
- ringed map turtle (*Graptempys oculifera*)
- West Indian manatee (*Trichechus manatus*)
- Ozark hellbender *(Alleganiensis bishopi)*
- Gulf sturgeon *(Acipenser oxyrinchus)*
- western fanshell (*Cyprogenia aberti*)
- rabbitsfoot *(Quadrula c. cylindrica)*
- all listed or proposed-for-listing bats and flowering plants

Reducing sediment and nutrient runoff into the Mississippi River and the Gulf of Mexico would benefit listed fishes, freshwater clam species, and sea turtles.

Potential impacts on federally listed species known to occur in agricultural and improved pasture habitat in Louisiana and Arkansas would be evaluated on a site-specific basis. Several of these species, such as gopher tortoise and monarch butterfly, require open canopy habitat, whereas others, such as the piping plover, whooping crane, and northern long-eared bat may use crop or pastureland occasionally for foraging or wintering, or during migration. In accordance with Section 7 of the ESA, FSA would conduct additional consultation with USFWS during site-specific environmental reviews to determine potential effects on special status species and critical habitat that could be present on lands proposed for enrollment under the Proposed Action Alternative. This consultation would identify conservation measures to avoid or minimize adverse effects on special status species and critical habitat to the extent possible. Adherence to these conservation measures during implementation of the proposed CREP would ensure that potential adverse effects on special status species would not be significant.

3.3.5 Environmental Consequences – No Action Alternative

Under the No Action Alternative, the proposed CREP would not be implemented and existing conditions would continue. Lands in portions of Arkansas, Louisiana, and Mississippi within the LMAV that would otherwise be eligible for the proposed CREP would remain in low agricultural productivity and experience frequent flooding. Opportunities to restore native BLH, improve water quality in the Mississippi River and Gulf of Mexico by reducing sediment and nutrient runoff, and restore wildlife habitat would not be realized. While this would represent an adverse effect on these conditions, they would continue to be managed as they currently are and such effects would not be significant.

3.3.6 Reasonably Foreseeable Future Actions and Other Environmental Considerations

The Proposed Action would contribute to beneficial effects on biological resources when considered with reasonably foreseeable future actions listed in **Appendix D**, particularly federal, state, and local conservation programs that are intended to improve wildlife habitat, distribution, abundance, and diversity. These beneficial effects would outweigh any potential adverse impacts associated with the installation and periodic maintenance of CPs included in the Proposed Action Alternative, which would be temporary, infrequent, and distributed across relatively small areas throughout the project area. Any potential adverse impacts on biological resources from the Proposed Action, when considered with adverse impacts from reasonably foreseeable future actions, would not contribute to cumulatively significant adverse impacts on biological resources.

3.4 Cultural Resources

3.4.1 Definition of Resource

Historic properties are any prehistoric or historic district, site, building, structure, or object that is listed or has been determined eligible for listing in the National Register of Historic Places (NRHP). National historic landmarks, NRHP-listed properties, archaeological sites, and traditional cultural properties having historic, cultural, or religious significance to Native American tribes are also considered historic properties. To be listed or determined eligible for listing in the NRHP, historic properties typically must be 50 years or older, have national, state, or local significance in American history, architecture, archaeology, engineering, or culture, and meet one or more evaluation criteria established by the National Park Service (NPS) (NPS, 1997). Properties less than 50 years old may be listed or eligible for listing in the NRHP if they possess exceptional historical importance, retain historic integrity, and meet at least one of the four NRHP evaluation criteria.

Under Section 106 of the NHPA, federal agencies are responsible for defining the area(s) where impacts from a proposed action (or "undertaking") may occur; identifying historic properties present within those areas; assessing the potential effects of the undertaking on those historic properties; and considering ways to avoid, minimize, and mitigate any adverse effects. Other federal laws protecting cultural resources include the Archaeological and Historic Preservation Act of 1960 as amended, the American Indian Religious Freedom Act of 1978, the Archaeological

Resources Protection Act of 1979, and the Native American Graves Protection and Repatriation Act of 1990.

The Proposed Action evaluated in this PEA is considered an undertaking for the purposes of Section 106. However, the location and size of parcels that could be enrolled in the proposed CREP is not currently known. In addition, given the scale and extent of the overall area where the proposed CREP would be implemented **(Figure 2.1-1)**, it is not possible at the programmatic level of analysis to identify specific cultural resources, including architectural resources, archaeological sites, and traditional cultural properties and sacred sites that could potentially be affected by the Proposed Action. Therefore, FSA is not initiating Section 106 consultation at this time. FSA is coordinating with the Arkansas, Louisiana, and Mississippi SHPOs and Native American tribes having ancestral ties to the CREP project area during the NEPA process to notify them of the Proposed Action and provide them with the opportunity to comment on the Draft PEA. Once specific lands for enrollment are identified and prior to the installation of CPs, FSA would initiate consultation with the respective SHPOs and Native American tribes to comply with Section 106. Correspondence with the SHPOs and Native American tribes is included in **Appendix A**.

3.4.2 Affected Environment

The LMAV is a vast floodplain characterized by rich alluvial soils, forested wetlands, and extensive farmland. The project area contains numerous watersheds. The Atchafalaya River and Bayou Teche drain directly to the Gulf of Mexico, while the St. Francis, White, Arkansas, Yazoo, Ouachita, and Red Rivers are among the larger tributaries of the Mississippi River, which is the largest of the rivers that drain the three states within the project area (USGS, 2024a).

The NRHP lists 1,060 historic properties within the project area (NPS, 2024a). **Table 3.4-1** shows NRHP historic property frequency by state and resource type. Historic buildings are by far the most frequent resource type at 75 percent. However, effects on architectural resources are not anticipated because the Proposed Action consists of the installation and periodic maintenance of approved CPs on frequently flooded agricultural lands. Likewise, other resource types within the built environment such as historic districts, objects, and structures are also unlikely to be affected. However, archaeological sites, particularly larger precontact and early historical occupations, are typically distributed in proximity to perennial streams and rivers that provide a source of subsistence and transportation. Smaller, short-term activity sites, such as hunting, trapping, and foraging camps can often be found on lower order drainages and upland areas. Thus, floodplains and stream terraces, that are often in agricultural production, in general have a higher potential for containing archaeological deposits that could be impacted by the proposed CPs.

Table 3.4-1 Listed National Register Resource Types by State Within the Project Area

State	Project Area (square miles)	Historic Objects	Historic Buildings	Historic Districts	Historic Structures	Archaeological Sites	Total
Arkansas	14,844.1	13	364	60	52	25	514
Louisiana	16,291.2	--	375	42	11	11	439
Mississippi	7,759.9	--	61	30	7	9	107
Total	**38,895.2**	**13**	**800**	**132**	**70**	**45**	**1,060**

Source: NPS, 2024a

Numerous archaeological resources have been identified across all three states within the project area. The Automated Management of Archeological Site Data in Arkansas (AMASDA) database maintained by the Arkansas Archeological Survey contains information on over 50,000 archaeological sites statewide (Arkansas Archeological Survey, 2024). In Louisiana, the Office of Cultural Development maintains the records of 21,000 archaeological sites statewide (Girard et al., 2022). The Mississippi Department of Archives and History maintains records for over 19,000 archaeological sites statewide (Morgan, 2002). The prehistoric archaeological sites generally span the Paleoindian (ca. 12,000-8500 B.C.) through Mississippian (ca. A.D. 900-1600) time periods and include artifact scatters, camp sites, villages, burial mounds, earthworks, and resource extraction locales. Historical archaeological sites can span the mid-sixteenth through mid-twentieth centuries and could include camp sites of conquistadors, such as Hernando de Soto, early French and Spanish settlements, frontier outposts, Civil War battlefields, homesteads, residential and commercial developments, as well as industrial, agricultural, and transportation infrastructure. While most of the historic properties listed on the NRHP are architectural resources, it is likely that many more of the thousands of previously recorded archaeological sites and those yet to be identified, retain integrity sufficient to convey their significance for NRHP eligibility.

No federally recognized Native American tribes are currently located in portions of Arkansas or Mississippi within the project area (BIA, 2024a). However, the reservations of two federally recognized Native American tribes are located within the portion of Louisiana in the project area (BIA, 2024b). The Chitimacha Tribe of Louisiana reservation consists of 600 acres near the town of Charenton in Saint Mary's Parish, within the tribe's ancestral lands (Chitimacha Tribe of Louisiana, 2024). The Tunica-Biloxi Indian Tribe reservation is located on 1,030 acres on two noncontiguous parcels in Avoyelles Parish; one near Marksville and one northwest of Belle d'Eau (Tunica-Biloxi Tribe of Louisiana, 2024). An additional 16 Native American tribes have ancestral ties to lands in counties that are within or partially within the project area (HUD, 2024); these tribes are listed in **Table 3.4-2**. As noted above, FSA is coordinating with the Arkansas, Louisiana, and Mississippi SHPOs, as well as these Native American tribes, during the NEPA process. Correspondence with the SHPOs and Native American tribes is included in **Appendix A**.

Table 3.4-2 Tribes Having Ancestral Ties to Counties Within the Project Area

Tribe	State Where Tribe is Currently Located	State(s) Tribe is Historically Associated With
Alabama-Coushatta Tribe of Texas	Texas	Louisiana, Mississippi
Alabama-Quassarte Tribal Town	Oklahoma	Arkansas, Louisiana
Apache Tribe of Oklahoma	Oklahoma	Arkansas, Louisiana
Caddo Nation of Oklahoma	Oklahoma	Arkansas, Louisiana
Cherokee Nation	Oklahoma	Arkansas, Mississippi
Chickasaw Nation	Oklahoma	Mississippi
Chitimacha Tribe of Louisiana	Louisiana	Louisiana
Choctaw Nation of Oklahoma	Oklahoma	Arkansas, Louisiana, Mississippi
Coushatta Tribe of Louisiana	Louisiana	Arkansas, Louisiana, Mississippi
Delaware Nation, Oklahoma	Oklahoma	Arkansas
Eastern Shawnee Tribe of Oklahoma	Oklahoma	Arkansas
Jena Band of Choctaw Indians	Louisiana	Louisiana

Table 3.4-2 Tribes Having Ancestral Ties to Counties Within the Project Area

Tribe	State Where Tribe is Currently Located	State(s) Tribe is Historically Associated With
Mississippi Band of Choctaw Indians	Mississippi	Arkansas, Louisiana, Mississippi
Muscogee (Creek) Nation	Oklahoma	Arkansas, Louisiana, Mississippi
Osage Nation	Oklahoma	Arkansas, Louisiana, Mississippi
Quapaw Nation	Oklahoma	Arkansas, Louisiana, Mississippi
Seminole Tribe of Florida	Florida	Louisiana
Tunica-Biloxi Indian Tribe	Louisiana	Louisiana

Source: HUD, 2024

3.4.3 Environmental Consequences Evaluation Criteria

Adverse effects on cultural resources would include physically altering, damaging, or destroying all or part of a resource or altering characteristics of the resource that make it eligible for listing in the NRHP. Such effects could include introducing visual or audible elements that are out of character with the property or its setting; neglecting the resource to the extent that it deteriorates or is destroyed; or the sale, transfer, or lease of the property out of agency ownership or control without adequate enforceable restrictions or conditions to ensure preservation of the property's historic significance. For this PEA, an effect is considered adverse if it alters the integrity of an NRHP-listed or eligible resource or if it has the potential to adversely affect traditional cultural properties and the practices associated with the property.

3.4.4 Environmental Consequences – Proposed Action Alternative

The enrollment of lands under the proposed CREP or implementation of proposed CPs within historic properties previously listed or determined eligible for listing in the NRHP is not anticipated. Prior to enrolling lands in the CREP under the Proposed Action Alternative, FSA would conduct site-specific environmental reviews in accordance with FSA Handbook *1-EQ*. These reviews would include consideration of undocumented cultural resources having potential to be present on lands where proposed CPs would be installed. FSA would conduct Section 106 consultation with the Arkansas, Louisiana, and Mississippi SHPOs as applicable, as well as Native American tribes having ancestral ties to lands proposed for enrollment, to identify potential effects on cultural resources. As applicable, such consultation would include identification of the Area of Potential Effects (APE), depth and area of proposed ground disturbance, a listing of all known or suspected sites in proximity to the APE, and a detailed project description and maps. Once identified, FSA would develop and implement measures to avoid, minimize, or mitigate adverse effects on cultural resources in accordance with Section 106. Therefore, adverse effects on cultural resources from the Proposed Action Alternative would not be significant.

3.4.5 Environmental Consequences – No Action Alternative

Under the No Action Alternative, the proposed CREP would not be implemented and existing conditions would continue. Opportunities to identify previously undocumented cultural resources during site-specific reviews that would be conducted under the Proposed Action Alternative would not occur and these resources would remain unknown; however, most of the potentially eligible

lands are in active agricultural production and have experienced generations of land disturbance. While previously undocumented cultural resources potentially underlie some of these lands, their potential for inadvertent discovery is likely small in the context of the overall project area and LMAV. Therefore, adverse effects on cultural resources from the No Action Alternative would not be significant.

3.4.6 Reasonably Foreseeable Future Actions and Other Environmental Considerations

Assuming compliance with Section 106 of the NHPA as described above, when considered in combination with reasonably foreseeable future actions listed in **Appendix D**, the Proposed Action would not contribute to cumulatively significant adverse effects on historic properties.

3.5 Water Resources

3.5.1 Definition of Resource

Water resources include surface water, groundwater, wetlands, and floodplains. Surface waters include oceans, lakes, ponds, rivers, streams, as well as human-built canals and water impoundments. Groundwater is water that fills the pores and fractures in underground materials such as sand, gravel, and other rock (USGS, 2024a). Wetlands are generally defined as "areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." Wetlands generally include "swamps, marshes, bogs, and similar areas" (USEPA, 2024b). Floodplains are land areas that are susceptible to being inundated by floodwaters from any source (FEMA, 2022).

The CWA of 1972 (33 U.S.C. § 1251 et seq.) is the primary federal law regulating water quality and the use of water resources. Section 303(d) of the CWA requires states to establish water quality standards that designate the use of the particular waterbody (such as recreation or protection of aquatic life), establish water quality criteria to support the designated uses, and adopt requirements to protect and maintain healthy waters. States are also required to periodically develop lists of impaired waters for which technology-based regulations and other required controls are not stringent enough to meet the water quality standards. States must establish priority rankings for impaired waters and develop Total Maximum Daily Loads (TMDLs) for these waters. TMDLs establish the maximum amount of a pollutant that can be present in a waterbody and still meet water quality standards (USEPA, 2024c).

E.O. 11988 and E.O. 11990 require federal agencies to consider the effects of their proposed activities on floodplains and wetlands, respectively, and consider alternatives to implementing actions in floodplains and wetlands. Wetland conservation provisions included in the 1985 Food Security Act assist in protecting the values, acreage, and functions of the wetlands in the United States.

3.5.2 Affected Environment

3.5.2.1 Surface Water and Water Quality

Mississippi River, Tributaries, and Gulf of Mexico

Arkansas, Louisiana, and Mississippi encompass an area of nearly 149,000 square miles and are drained by numerous rivers and streams that drain directly to the Gulf of Mexico, including the Atchafalaya, the Teche, the Vermilion, the Calcasieu, the Mermentau, the Sabine, the Tombigbee, the Pascagoula, the Wolf, and the Pearl Rivers. The Yazoo, Big Black, Arkansas, St. Francis, Red, and White Rivers are tributaries of the Mississippi River, which is the largest of the rivers that drain the three states (USGS, 1998).

The Mississippi River extends 2,350 miles from its origin as an outlet of Lake Itasca in northern Minnesota to its mouth at the Gulf of Mexico. The Mississippi River basin is the largest river basin in the United States and third largest in the world after the Amazon and Congo River basins. The Mississippi basin covers more than 1.2 million square miles and drains all or parts of 31 U.S. states and two Canadian provinces, totaling 41 percent of the contiguous United States and 15 percent of North America. Nearly 31 percent of the U.S. population lives in the Mississippi River basin (USEPA, 2024d). The Arkansas River is the largest tributary of the Mississippi within the project area; hundreds of other smaller streams and rivers join the Mississippi along its length. The Atchafalaya River serves as a distributary of the Mississippi and Red Rivers after branching off from those rivers in east-central Louisiana and flowing approximately 140 miles south until it discharges to the Gulf of Mexico (Britannica, 2024).

In May 2023, flows from the Mississippi and Atchafalaya Rivers carried an estimated 76,700 metric tons of nitrate and 16,300 metric tons of phosphorus into the Gulf of Mexico, resulting in an approximately 4,155-square mile hypoxic zone in the northern Gulf along the Louisiana coastline (USGS, 2024b; NCCOS, 2023; USEPA, 2024e). Hypoxic waters contain low levels of dissolved oxygen (less than 2-3 milligrams of oxygen per liter of water). This condition can occur naturally but is influenced by large inputs of excess nutrients, largely attributed to upstream agriculture, and other factors. Hypoxic waters are often referred to as “dead zones” because normal populations of fish, shellfish, and other aquatic life are typically unable to survive there. A hypoxic area along the Louisiana coastline near the mouth of the Mississippi River forms each summer and is the largest “dead zone” in the United States (USEPA, 2024e).

Arkansas

Arkansas contains approximately 87,617 miles of streams and 514,000 acres of lakes (Office of the State Geologist, 2024). As of 2022, more than 8,200 miles [2] of rivers and streams and 14,912 acres of lakes and ponds in the state were listed as impaired and classified as either Category 4b or Category 5 waters **(Table 3.5-1)**. Causes of impairment include the presence of metals (aluminum, beryllium, copper, zinc), bacteria (*E. coli*), low dissolved oxygen, and increased

[2] Some river sections may be counted more than once because multiple TMDLs may address different pollutants in the same river section.

turbidity from sources such as agriculture, urban runoff, erosion, industrial and municipal pollution, and resource extraction (mining).

Table 3.5-1 Water Quality Summary – Arkansas

Water Quality Category	Rivers / Streams (miles)	Lakes / Ponds (acres)
4b	93.5	0
5 – High	1,457.6	1,344
5 – Medium	1,270.6	7,296
5 – Low	5,367.5	2,432
5 Alt.	35.5	3,520
Total	**8,224.7**	**14,912**

Source: ADEE DEQ, 2022

Arkansas Department of Energy and Environment, Division of Environmental Quality (ADEE DEQ) defines the categories of impairment listed in **Table 3.5-1** as follows:

Category 4b – water quality standards are not attained for one or more designated uses but the development of a TMDL is not required because other management alternatives are expected to result in the attainment of the water quality standard.

Category 5 – waterbody is impaired, or one or more water quality standards may not be attained.

- High
  - Truly impaired; develop a TMDL or other corrective action(s) for the listed parameter(s).
- Medium
  - Waters currently not attaining standards, but may be delisted with future revisions to APC&EC Rule No. 2, the state water quality standards; or
  - Waters which are impaired by point source discharges and future permit restrictions are expected to correct the problem(s).
- Low
  - Waters currently not attaining one or more water quality standards, but all designated uses are determined to be supported; or
  - There is insufficient data to make a scientifically defensible decision concerning designated use attainment; or
  - Waters DEQ assessed as unimpaired, but were assessed as impaired by USEPA.
- Alt.
  - Waters where alternative restoration approaches may be more immediately beneficial or practicable in achieving water quality standards than pursuing the TMDL approach in the near-term. (ADEE DEQ, 2024a)

As of 2022, ADEE DEQ has issued 162 TMDLs covering approximately 7,076 miles of rivers and streams and 67.3 square miles of lakes in Arkansas (ADEE DEQ, 2024b).

Louisiana

Louisiana contains more than 126,000 miles of rivers and streams (including perennial and intermittent streams, and canals) and nearly 1.5 million acres of lakes and reservoirs (LDEQ, 2024a). As of 2024, 52 percent of water bodies in Louisiana are considered to be impaired for primary contact recreation (swimming) and 68 percent are impaired for fish and wildlife propagation. The size of rivers and lakes not supporting one or more designated uses used to assess water quality in Louisiana is summarized in **Table 3.5-2**.

Table 3.5-2 Size of Louisiana Rivers, Streams, and Lakes Not Supporting Designated Uses

Designated Use	Rivers and Streams Not Supporting Designated Uses (miles)	Lakes Not Supporting Designated Uses (acres)
Primary Contact Recreation	3,538	44,106
Secondary Contact Recreation	297	0
Fish and Wildlife Propagation	6,375	517,018
Drinking Water Supply	567	29,278
Limited Aquatic Life and Wildlife Use	60	not applicable
Outstanding Natural Resource Waters	968	not applicable
Oyster Propagation	477	not applicable
Agriculture	0	0
Total	**12,282**	**590,402**

Source: LDEQ, 2024a

Impairments in Louisiana waters are caused by elevated enterococcus bacteria and fecal coliform densities, elevated water temperature or chemical contamination, low dissolved oxygen, elevated chlorides, sulfates, total dissolved solids, turbidity, pH, metals, organic compounds (including pesticides), and mercury or organic chemicals. Primary sources of contamination, other than natural or unknown sources, include agriculture, atmospheric deposition, septic systems and similar decentralized systems, and package plant or other permitted small-flow discharges. Secondary contact recreation (boating) is supported by 97 percent of the water bodies in Louisiana (LDEQ, 2024a). USEPA has approved more than 110 TMDLs to address pollutants in Louisiana waterways (LDEQ, 2024b).

Mississippi

Mississippi contains more than 82,000 miles of rivers and streams and approximately 260,000 acres of lakes, ponds, and other impoundments. As of 2022, approximately 1,590 miles of rivers and streams in the state were considered impaired to support one or more classifications used to assess water quality in the state (Public Water Supply, Shellfish Harvesting, Recreation, Fish and Wildlife, and Ephemeral Stream). Sources of impairments in Mississippi rivers and streams are summarized in **Table 3.5-3**. Biological sources represent the largest category of impairments in state waters (518 miles), followed by sedimentation/siltation (477 miles) and elevated levels of nutrients (230 miles). The specific sources of biological impairments have not been determined (MDEQ, 2022a).

Table 3.5-3 Impairments in Mississippi Rivers and Streams

Impairment Category	Miles of Rivers and Streams Impaired
Biological Impairment [1]	518
Sedimentation/Siltation	477
Nutrients	230
Pathogens	188
Organic Enrichment/Low DO	144
Toxics	17
pH	11
Pesticides	5
Total [2]	**1,590**

Notes:
[1] Definitive cause identification was not possible at the time of assessment.
[2] Total exceeds number of actual impaired miles due to presence of multiple impairment causes per assessed waterbody.
Source: MDEQ, 2022a

Between 2016 and 2020, 41 percent of Mississippi's total lake acres were assessed for Aquatic Life Use and 50 percent were assessed for trophic status (trophic state is a scale that describes the condition of a waterbody based on its biological productivity). Nearly 100 percent of the assessed lake acres were determined to support Aquatic Life Use. Of the 58 lakes assessed for trophic status, 57 were determined to be eutrophic (having high levels of biological productivity with an abundance of plants due to a rich nutrient constitution, especially nitrogen and phosphorus) (MDEQ, 2022a; World Atlas, 2024).

Mississippi has completed 381 TMDLs to address pollutants in waterbodies throughout the state (MDEQ, 2024).

3.5.2.2 Wetlands

Wetlands provide ecological functions such as habitat for wildlife, including migrating birds and waterfowl. Wetlands also capture, store, and release floodwaters, filter pollutants, and are a source of groundwater recharge.

The project area contains nearly 17,000 square miles of wetlands **(Table 3.5-4)** (USFWS National Wetlands Inventory, 2024). Louisiana contains the largest percentage of wetlands in the project area (58.7 percent), which is reflective of its low-lying land area and coastal location along the Gulf of Mexico. Palustrine wetlands, which include all nontidal wetlands dominated by trees, shrubs, persistent emergent vegetation (erect, rooted herbaceous aquatic plants that remain upright and visible throughout the year), and emergent mosses or lichens, are the predominant wetland type within each state.

The location, size, and types of wetlands identified through the USFWS National Wetlands Inventory are based on the analysis of aerial imagery and other remote sensing methods and therefore, are approximate.

Table 3.5-4 Summary of Wetlands Within the Project Area

Wetland Type	Size of Wetland Area		Percent of Wetlands in Project Area
	Acres	Square Miles	
Arkansas			
Lacustrine	170,385.4	266.2	1.6
Palustrine	1,963,536.4	3068.0	18.2
Riverine	286,090.6	447.0	2.7
Subtotal	**2,420,012.4**	**3,781.2**	**22.4**
Louisiana			
Estuarine	1,618,463.0	2,528.8	15.0
Lacustrine	272,280.4	425.4	2.5
Marine	2,874.1	4.5	< 0.1
Palustrine	3,979,800.0	6,218.4	36.9
Riverine	463,470.1	724.2	4.3
Subtotal	**6,336,887.6**	**9,901.3**	**58.7**
Mississippi			
Estuarine	2,249.0	3.5	<0.1
Lacustrine	127,549.5	199.3	1.2
Palustrine	1,583,507.9	2,474.2	14.7
Riverine	319,755.2	499.6	3.0
Subtotal	**2,033,061.6**	**3,176.6**	**18.8**
Total Wetlands Within Project Area	**10,789,961.6**	**16,859.1**	**100.0**

Source: USFWS National Wetlands Inventory, 2024

Activities involving draining, filling, clearing, or other types of disturbance in wetlands having federal jurisdiction are subject to permits issued by U.S. Army Corps of Engineers (USACE), in accordance with Section 404 of the CWA. USACE is responsible for determining the jurisdictional status of wetlands. Generally, federal wetland permit requirements and associated avoidance, mitigation, and compensation requirements vary depending on the types of proposed activities that would occur, the type of wetlands that would be affected, and the state in which proposed activity would be implemented. Individual states may have additional wetland permitting requirements.

3.5.2.3 Groundwater

Groundwater Aquifers

Within the project area, portions of Arkansas, Louisiana, and Mississippi are primarily underlain by five major aquifer systems[3]: the Mississippi River Valley alluvial aquifer, Coastal lowlands aquifer system, Mississippi embayment aquifer system, Southeastern Coastal Plain aquifer system,

[3] An aquifer system consists of two or more aquifers that are hydraulically connected. The aquifers may be separated, in places, by confining units, but there is regional hydraulic continuity within the system – the flow systems of the aquifers function similarly, and a change in conditions within one aquifer commonly affects the other aquifer(s) (USGS, 1998).

and Ozark Plateaus aquifer system. The majority of these aquifers consist of unconsolidated to poorly consolidated Coastal Plain strata of gravel, sand, clay, and minor limestone of Cretaceous to Holocene age. Other aquifers consist of indurated limestone, dolomite, shale, sandstone, chert, and novaculite of Paleozoic age that are either flat lying or gently to highly folded and contorted and that may be faulted and fractured. Precipitation is the ultimate source of water that recharges these aquifers (USGS, 1998).

The LMAV is one of the most important agricultural regions in the United States, constituting the third largest area of irrigated cropland in the United States. The area is approximately 29,000 square miles (19 million acres) and generally corresponds to the portions of Arkansas, northeastern Louisiana, and Mississippi within the project area (USGS, 2016). The withdrawal and use of groundwater in the LMAV relies heavily on a groundwater system that is poorly understood and shows signs of substantial change. Over 9 billion gallons per day of groundwater are withdrawn for irrigation to support agricultural production. As of 1998, approximately 80 percent of groundwater withdrawn in Arkansas, Louisiana, and Mississippi was used to irrigate agriculture. The heavy use of available groundwater resources has resulted in substantial declines in groundwater levels and reductions in base flow in streams within the LMAV. In turn, these declines and reductions are limiting well production and threatening future water availability for the region (USGS, 1998; USGS, 2024c).

Sole Source Aquifers

Sole source aquifers (SSAs) are aquifers that provide at least 50 percent of the drinking water consumed within an overlying area where no alternative drinking water sources are reasonably available should the aquifer become contaminated. The SSA program, authorized under Section 1424(e) of the Safe Drinking Water Act of 1974 (Public Law 93-523, 42 U.S.C. § 300 et. seq), enables USEPA to review proposed federally funded[4] projects located in or near areas overlying an SSA to ensure that a proposed project does not contaminate the SSA (USEPA, 2024f).

Portions of the project area, primarily in southeastern Mississippi and central Louisiana, are underlain by the Southern Hills Regional Aquifer System SSA and the Chicot Aquifer System SSA **(Figure 3.5-1)** (USEPA, 2024g). The Southern Hills regional aquifer system is the primary source of public and domestic supplies in the northern 10 parishes of southeastern Louisiana (East Baton Rouge, East Feliciana, Livingston, Pointe Coupee, Saint Helena, Saint Tammany, Tangipahoa, Washington, West Baton Rouge, and West Feliciana). The aquifer system extends from the northern limit of the recharge area near Vicksburg, Mississippi to the Baton Rouge area in southeastern Louisiana. Several streams are available as alternatives for supply, but they have not been accepted by local officials because of the additional water treatment that would be necessary and the extensive distribution system needed to deliver water to areas not near a source stream. This aquifer system served more than 1 million people in southeastern Louisiana and southwestern Mississippi in 1980 (USGS, 1983).

[4] The SSA program applies to proposed projects receiving federal assistance, but not to projects or actions undertaken directly by federal agencies or occurring on federally owned property (such as military bases) (USEPA, 2024f).

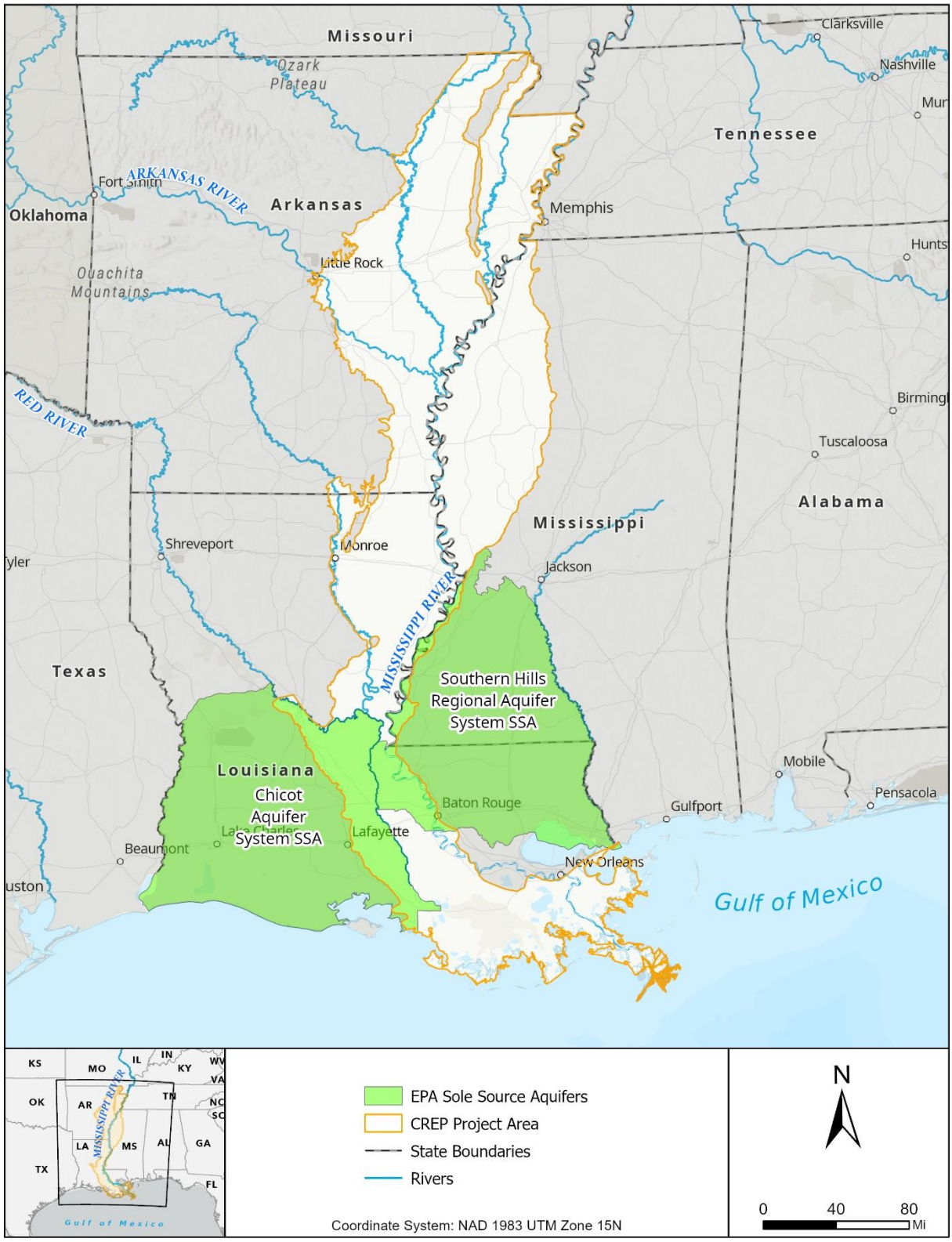

Figure 3.5-1 Sole Source Aquifers Underlying the Project Area

The Chicot aquifer system accounts for approximately 48 percent of all groundwater use in Louisiana and underlies an area of approximately 9,500 square miles in southwestern Louisiana that includes all or portions of 15 parishes (Vernon, Rapides, Evangeline, Allen, Beauregard, Calcasieu, Jefferson Davis, Acadia, Saint Landry, Lafayette, Saint Martin, Cameron, Iberia, Vermilion, and Saint Mary). This aquifer system provides freshwater for public supply, as well as industry, agriculture, and aquaculture. Withdrawals of groundwater have created water-level gradients favorable for saltwater encroachment, and future water availability and production in the region could be impacted by poor water quality (USGS, 2021).

3.5.2.4 Floodplains

FEMA defines the 100-year floodplain as an area within which there is a 1 percent chance of inundation by a flood event in a given year (FEMA, 2023). Flooding risk is influenced by local topography, frequency of precipitation events, size of the watershed above the floodplain, and upstream development. In addition to the natural moderation, storage, and conveyance of floodwaters, ecosystem functions provided by floodplains include groundwater recharge, nutrient cycling, water quality maintenance, and habitat for plants and wildlife.

The National Flood Insurance Program administered by FEMA establishes minimum floodplain management standards. Development within the 100-year floodplain is often regulated at the state or local level. Such development is typically limited to water-dependent infrastructure, such as boating facilities and water treatment plants, or passive recreational facilities such as parks and walking or biking trails. Development that has the potential to adversely alter flood flows and volumes or result in the downstream displacement of floodwaters, such as extensively paved areas and human-occupied buildings or structures, is typically discouraged within the 100-year floodplain.

The project area contains more than 15,000 square miles of 100-year floodplains, representing approximately 35 percent of the project area's total land area **(Table 3.5-5)** (FEMA, 2024). This reflects the project area's relatively flat topography and proximity to the Mississippi River and other major rivers. The largest area of 100-year floodplains in the project area is in Louisiana, although the proportion of floodplains within the project area is generally distributed similarly throughout each state.

Table 3.5-5 Summary of 100-Year Floodplains Within the Project Area

State	Size of Floodplain Within Each State's Portion of the Project Area		Percent of Floodplains in Project Area
	Acres	Square Miles	
Arkansas	3,143,476.9	4,911.7	11.2
Louisiana	3,717,841.6	5,809.1	13.3
Mississippi	2,922,370.3	4,566.2	10.4
Total	**9,783,688.8**	**15,287.0**	**34.9**

Source: FEMA, 2024

3.5.3 Environmental Consequences Evaluation Criteria

Impacts on water resources would be considered significant if implementation of the Proposed Action resulted in exceedances or violations of applicable state or federal water quality criteria, increased the risk of flooding, threatened or damaged unique hydrologic characteristics, or violated applicable laws or regulations.

3.5.4 Environmental Consequences – Proposed Action Alternative

3.5.4.1 Surface Water and Water Quality

In the short term, vegetation clearing and soil disturbance associated with implementation of the Proposed Action Alternative could temporarily increase soil erosion and the corresponding sedimentation and turbidity of receiving water bodies, resulting in an adverse effect. Adherence to applicable BMPs during installation of approved CPs would prevent or minimize these effects to the extent practicable. The proposed CPs would be installed over a period of several years, rather than occurring simultaneously, and would be distributed throughout the project area, further minimizing impacts. Implementation of the Proposed Action would not require new or additional withdrawals of surface water, the modification of existing stream channels, or the discharge of pollutants to surface water bodies. Potential impacts on surface waters would be evaluated and addressed during site-specific environmental reviews that would be conducted prior to enrolling lands under the Proposed Action Alternative. Therefore, short-term adverse effects on surface water and water quality would not be significant.

In the long term, the Proposed Action Alternative would have beneficial effects on water quality from the conversion of farmland to native vegetation that would help to reduce sediments, pollutants, and nutrients in agricultural runoff. The installation of CPs adjacent to or upstream of impaired waters would help in the attainment of water quality objectives set forth in applicable TMDLs and the reduction of nutrients in runoff that contribute to the formation of the annual "dead zone" in the Gulf of Mexico. The long-term maintenance of reforested areas would not require new or additional withdrawals of surface water, the modification or other alteration of existing stream channels, or discharges of pollutants, and would not impede or prevent the achievement of TMDL objectives. Adherence to applicable BMPs during maintenance activities would minimize soil disturbance and the amount of sediments in runoff to the extent possible; any such disturbance and runoff would be relatively infrequent and small in the context of soil disturbing activities occurring throughout the project area. Therefore, any potential adverse effects on water quality would not be significant.

3.5.4.2 Wetlands

The installation and periodic maintenance of CPs under the Proposed Action Alternative could involve excavation, fill, vegetation removal, or other disturbances that could have short-term adverse effects on wetlands. Prior to conducting activities with the potential to disturb wetlands, project proponents would acquire and adhere to the requirements of applicable permits issued by USACE and/or state agencies in Arkansas, Louisiana, and Mississippi. Site-specific environmental reviews conducted prior to enrolling lands under the Proposed Action would identify potential wetland impacts and applicable avoidance, minimization, and/or mitigation measures. Adherence

to wetland conservation provisions of the 1985 Food Security Act and applicable permitting requirements and BMPs, such as the use of silt fencing to prevent or minimize the discharge of sediments in runoff, would prevent or minimize short-term impacts on wetlands to the extent practicable. The installation of CPs over a period of several years rather than simultaneously, and the distribution of those practices throughout the project area, would further minimize potential impacts. Therefore, any short-term adverse effects on wetlands from the Proposed Action Alternative would not be significant.

In the long term, the reforestation of floodplains and associated wetlands would have beneficial effects by increasing the distribution, functions, abundance, and diversity of wetlands throughout the project area. Reforested wetlands would provide wildlife habitat and remove additional quantities of sediments, pollutants, and nutrients from agricultural runoff, thereby helping to improve water quality in receiving water bodies. The periodic maintenance of vegetation in the reforested areas would be infrequent, would contribute to the health and optimal function of wetland ecosystems, and would be conducted in a manner that would minimize disturbance of wildlife, their habitat, and healthy vegetation. Therefore, any adverse long-term effects on wetlands under the Proposed Action Alternative would not be significant.

3.5.4.3 Groundwater

The installation of CPs and periodic maintenance of planted vegetation under the Proposed Action Alternative would not involve new or additional groundwater withdrawals, the discharge of pollutants to groundwater, or the creation of new impervious surface that could inhibit groundwater recharge. The establishment of new vegetation under the Proposed Action Alternative would increase the distribution of permeable surface throughout the project area and contribute to improved groundwater recharge by promoting the infiltration and percolation of precipitation. Contractors conducting planting and vegetation maintenance would adhere to applicable BMPs to prevent accidental spills of petroleum products or other hazardous substances. Ground disturbance, maintenance, and other activities associated with the Proposed Action Alternative would have no potential to contaminate the Southern Hills Regional Aquifer System SSA and the Chicot Aquifer System SSA underlying portions of southern Louisiana and make their water supplies unusable. Overall, the Proposed Action Alternative would have beneficial long-term effects on groundwater and SSAs. Any potential adverse effects would be temporary and not significant.

3.5.4.4 Floodplains

Implementation of the Proposed Action Alternative in floodplains would be conducted in a manner that would prevent or minimize the potential to increase the volume or downstream displacement of floodwaters. Site-specific environmental reviews conducted prior to enrolling lands under the Proposed Action Alternative would evaluate the potential for localized floodplain impacts from associated land disturbance and planting activities and would identify measures to prevent or minimize any such impacts. The installation of CPs under the Proposed Action Alternative would occur over a period of several years, rather than simultaneously; be distributed throughout the project area; and would occur in relatively small areas in the context of all floodplains within the project area, further minimizing potential impacts. The installation of CPs in floodplains would adhere to all applicable regulatory requirements established by FEMA and the states of Arkansas,

Louisiana, and Mississippi. Therefore, short-term adverse impacts on floodplains from the Proposed Action Alternative would not be significant.

In the long term, the reforestation of floodplains throughout the project area under the Proposed Action Alternative would improve floodplain functions, including the moderation, storage, and conveyance of floodwaters, groundwater recharge, nutrient cycling, water quality maintenance, and the provision of habitat for plants and wildlife. The improvement of these functions would generally represent a beneficial effect on floodplains. The periodic maintenance of vegetation installed under the Proposed Action Alternative would be conducted in a manner that would not compromise these functions. Generally, the Proposed Action Alternative would contribute to restoring floodplain functions and values in the LMAV that were present prior to extensive agricultural development that began in the 19th century. Therefore, the Proposed Action Alternative would have beneficial long-term effects on floodplains in the LMAV, and any adverse effects would not be significant.

3.5.5 Environmental Consequences – No Action Alternative

Under the No Action Alternative, the proposed CREP would not be implemented and existing conditions would continue. The opportunity to realize beneficial effects on water quality and restore floodplain functions and values would not be realized; however, these conditions would continue to be managed as they currently are in accordance with applicable federal, state, and local regulatory requirements. Therefore, potential adverse effects on water resources from the No Action Alternative would not be significant.

3.5.6 Reasonably Foreseeable Future Actions and Other Environmental Considerations

The Proposed Action would contribute to beneficial effects on water resources when considered with other reasonably foreseeable future actions listed in **Appendix D**, particularly those intended to improve water quality, floodplain and wetland functions and values, and groundwater recharge, or establish or restore wetlands. These beneficial effects would outweigh any potential adverse impacts associated with the installation of CPs included in the Proposed Action, which would be temporary, infrequent, and distributed across relatively small areas throughout the project area. Other reasonably foreseeable future actions, whether implemented by federal, state, or local agencies, or private landowners, would be required to comply with applicable permitting requirements to avoid, minimize, or mitigate potential adverse impacts on water resources. Therefore, any potential adverse impacts on water resources from the Proposed Action, when considered with adverse impacts from reasonably foreseeable future actions, would not contribute to cumulatively significant adverse impacts on water resources.

3.6 Air Quality

3.6.1 Definition of Resource

Air quality refers to the amounts and types of pollutants present in the ambient air. Air pollutants are emitted by numerous natural and human-built sources. Weather conditions and topography further influence the amounts and types of air pollutants that are present in a particular location.

USEPA has established standards in accordance with the federal Clean Air Act to manage emissions of select pollutants known to affect human health and the environment. These standards, known as National Ambient Air Quality Standards (NAAQS), are currently established for six criteria air pollutants (CAPs): ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, respirable particulate matter including particulates equal to or less than 10 microns in diameter (PM_{10}) and particulates equal to or less than 2.5 microns in diameter ($PM_{2.5}$), and lead. Areas of a state that meet the NAAQS for all criteria pollutants are designated by USEPA as attainment areas. Areas in which the NAAQS are exceeded for one or more criteria pollutants are designated as nonattainment areas. Areas that were reclassified from a previous nonattainment status to attainment are designated as maintenance areas. For areas designated as nonattainment or maintenance for one or more criteria pollutants, the state must prepare a State Implementation Plan or a Maintenance Plan to show how the area will meet or maintain the NAAQS within a specified timeframe.

Federal actions in NAAQS nonattainment and maintenance areas are also required to comply with the USEPA's General Conformity Rule (40 CFR Part 93). Federal actions are evaluated to determine if project emissions would be below *de minimis* levels for each criteria pollutant as specified in 40 CFR § 93.153. If project emissions would be below *de minimis* levels (or are minimal), no further evaluation is required. If project emissions would exceed *de minimis* levels for any criteria pollutant, a detailed analysis of potential emissions is required.

USEPA has designated some areas of the United States as Class I areas to address conditions where visibility is reduced due to the presence of pollutants in the ambient air (40 CFR §§ 81.410, 81.425, and 81.434). Class I areas include national parks larger than 6,000 acres, national wilderness areas and national memorial parks larger than 5,000 acres, and international parks. To maintain good air quality in these pristine areas in the country, State Implementation Plans must also address visibility as an air quality issue.

Greenhouse gases (GHGs) are gases occurring from natural processes and human activities that trap heat in the atmosphere. The accumulation of GHGs in the atmosphere traps heat, making the Earth warmer, which is believed to contribute to global climate change. The USEPA regulates GHG emissions via permitting and reporting requirements that are applicable mainly to large stationary sources of emissions. Agricultural activities contribute directly to emissions of GHGs including CO_2, methane, and nitrous oxide (N_2O). These emissions result from a variety of non-agricultural sources (e.g., fuel combustion, industrial processes) and agricultural sources, such as the use of diesel-fueled farm equipment, enteric fermentation, agricultural soil and manure management, and crop and field burning.

The area of analysis for air quality in this PEA consists of the airsheds that contains the counties and parishes fully or partially located within the project area where the Proposed Action would be implemented. An airshed is a geographic area or region defined by settlement patterns or topography that shares the same air mass and results in discrete atmospheric conditions.

3.6.2 Affected Environment

3.6.2.1 Climate and Topography

The project area lies within the Humid Subtropical climatic zone and is characterized by short, mild winters and long, hot, and humid summers. High temperatures above 90 Fahrenheit (°F) are typically reached over 100 days each year. Rainfall is highest in winter and spring, and dips from June through October, during most of the growing season. Southerly winds prevail during the summer and provide the potential for violent thunderstorms. Both droughts and floods are common in the region (USDA, 2021).

Within the project area, temperature and precipitation increases from north to south. In the Little Rock area of Arkansas in the north project area, mean average temperature is 62°F and average annual precipitation is 50 inches. In the south-central project area at Natchez, Mississippi, the annual mean average temperature is 64°F and average annual precipitation is 60 inches. In the southernmost portion of the project area in the vicinity of Baton Rouge, Louisiana, the annual mean average temperature is 69°F and the average annual precipitation is 62 inches (NOAA, 2024a; NOAA, 2024b; NOAA, 2024c).

The LMAV area consists of flat to gently sloping broad floodplains and low terraces. From near sea level in the south, altitude increases gradually to the north. Elevations vary typically between 100-400 feet in the loessal bluff hills along the margins of the alluvial valley. Sharp terrace scarps and natural levees rise sharply to several meters above adjacent bottomlands or river channels. Swamps are significant in the extreme southern part of Louisiana. Over 95 percent of the forested wetlands occur in Arkansas, Louisiana, and Mississippi. The largest contiguous area of forested wetland (approximately 30 percent of the total in the Mississippi River Delta) occurs in the Atchafalaya basin in the southeast Louisiana (Arkansas Geological Survey, 2024; NPS, 2017a; USDA, 2021).

In the states of Arkansas, Louisiana, and Mississippi, temperatures have risen by 0.1° to 0.5°F since the beginning of the 20th century and historically unprecedented warming is projected during the 21st century (NOAA, 2022). In Arkansas and Mississippi, the frequency and intensity of extreme heat and extreme precipitation events are projected to increase, while the intensity of extreme cold events is projected to decrease. Hurricanes strike Louisiana on an average of once every 3 years. As the climate continues to warm, hurricane-associated rainfall rates are projected to increase, and the resulting flooding would be of particular concern to Louisiana. Global sea level is projected to rise, with a likely range of increase of 1 to 4 feet by 2100. Mississippi and Louisiana's coastline is extremely vulnerable to sea level rise due to coastal subsidence, wetland loss, and low elevation in the southern portion of the states. Potential impacts of sea level rise include higher storm surge and disappearing barrier islands (NOAA, 2022). Over the past 100 years, there has been a notable increase in annual precipitation, especially in the southern coastal areas of the LMAV. High precipitation intensities were larger with shorter returning periods and more frequent probability in the coastal area than in the inland areas of the LMAV (Ouyang, 2020).

3.6.2.2 Existing Status of Air Quality and Air Emissions

In Arkansas, ADEE DEQ is responsible for establishing regulations and maintaining federal NAAQs. ADEE DEQ has implemented numerous air monitoring sites across the state to monitor ambient levels of criteria pollutants (ADEE DEQ, 2024c). The air monitoring data shows all 31 counties partially or entirely located within the project area are currently in compliance with NAAQS for all criteria pollutants. In the past, Crittenden County, Arkansas, which is entirely located within the project area, reached nonattainment levels for 2008 ozone NAAQS. The designated nonattainment area has subsequently been redesignated to attainment as a maintenance area. There were no NAAQS exceedances reported between 2015 and 2019 and 2 unhealthy days for air quality reported for 2020 (ADEE DEQ, 2020a; ADEE DEQ, 2020b).

The Mississippi Department of Environmental Quality (MDEQ) is responsible for meeting and maintaining the federal NAAQS. It has implemented a network of air monitoring sites across the state to monitor ambient levels of criteria pollutants. MDEQ's air monitoring data results shows all counties in Mississippi, including the 23 counties partially or entirely located within the project area, in compliance with NAAQS for all criteria pollutants (MDEQ, 2022b).

LDEQ is the regulatory agency that maintains and monitors air quality in Louisiana (LDEQ, 2024c). In general, the air quality of the Louisiana parishes located throughout the project area is considered good (clean air). However, there are localized metropolitan areas where elevated ozone levels are causing moderate deterioration in air quality. As a result, USEPA has designated five parishes in the Baton Rouge area (East Baton Rouge, West Baton Rouge, Livingston, Ascension, and Iberville) as nonattainment areas for the 2008 ozone NAAQS. Also, portions of Evangeline Parish are designated by USEPA as nonattainment for the 2010 sulfur dioxide NAAQS. All other parishes within the state are currently in attainment for the remaining criteria pollutant NAAQS (USEPA, 2024g; USEPA, 2024h).

No mandatory Class I areas are within the project area and none are close enough to the project area to cause visibility impairment. Therefore, issues related to visibility and regional haze are not considered further in this PEA. The nearest Class I area is the Breton Wilderness Area in Louisiana (USEPA, 2024i**).** This Wilderness Area is located approximately 30 miles outside of the project area in the Gulf of Mexico and is not likely to be affected by the Proposed Action.

Air pollution from agricultural and non-agricultural sources is harmful to human health. USEPA's 2020 National Emissions Inventory data estimates CAP emissions from crops and livestock dust, fertilizer application, livestock waste, and agricultural field burning. In Arkansas, Louisiana, and Mississippi, combined emissions from these agricultural sources in counties that are fully within the project area are estimated to range between 19 and 21 percent of the total CAP emissions from all sources (USEPA, 2020). USEPA's CAP-related emissions include ammonia, carbon monoxide, lead, N_2O, particulate matter (PM_{10}, $PM_{2.5}$, organic carbon and black carbon), sulfur dioxide, and volatile organic compounds. Particulate emissions of $PM_{2.5}$ from agricultural sources in counties that are fully within the project area are 7 to 13 percent of the total CAP emissions. In comparison to fine dust particles, fugitive dust (PM_{10}) emission contributions are higher, ranging from 58 to 60 percent of the total CAP emissions from agricultural sources in Arkansas and Mississippi and

almost 30 percent of the total CAP emissions from agricultural sources in Louisiana (USEPA, 2020).

In 2022, the agriculture sector was responsible for 593.4 million metric tons of CO_2-equivalent emissions, or 9.4 percent of total GHG emissions for the United States. Emissions of N_2O by agricultural soil management, through activities such as fertilizer application and other agricultural practices that increased nitrogen availability in the soil, were the largest source of N_2O emissions in the United States, accounting for 75.2 percent (USEPA, 2024j). In 2021, the agriculture sector in the states of Louisiana, Arkansas, and Mississippi, was responsible for a total of 31.445 million metric tons of CO_2- equivalent emissions, or 5.2 percent of total GHG emissions for the United States (USEPA, 2023).

3.6.3 Environmental Consequences Evaluation Criteria

In Arkansas, Louisiana, and Mississippi, impacts on air quality in areas designated as attainment would be considered significant if air emissions associated with the Proposed Action would result in an exceedance of one or more of the NAAQS. Impacts would also be considered significant if:

- Any national, state, or local ambient air quality standard would be violated by pollutant emissions associated with the Proposed Action;
- Sensitive receptors (e.g., residential areas, hospitals) would be exposed to substantially increased pollutant concentrations during implementation of the Proposed Action; or
- Pollutant emissions associated with the Proposed Action would exceed any significance criteria established by the State Implementation Plan.

For this analysis, impacts on GHG emissions from the Proposed Action are evaluated qualitatively because the location and size of lands where CPs would be installed under the Proposed Action is not currently known.

3.6.4 Environmental Consequences – Proposed Action Alternative

The Proposed Action Alternative would potentially result in beneficial long-term effects on air quality and any adverse impacts on air quality would be anticipated to be low, localized, and short-term in duration. However, it is likely that such beneficial effects would not be substantial enough to result in short-term impacts on the existing air quality status of the airsheds in which the Proposed Action Alternative would be implemented.

Studies that show a direct link between CREP practices and air quality are rare and thus, potential impacts on air quality are addressed qualitatively in this PEA. The implementation of the proposed CPs on up to 3,600 acres of privately owned land in portions of Arkansas, Louisiana, and Mississippi within the LMAV would contribute to improved air quality by decreasing the use of heavy machinery and the application of synthetic fertilizers on tracts of private farmland.

Activities involving vegetation clearing, soil disturbance, and operation of heavy equipment and vehicles would occur during installation of the proposed CPs. These activities would have the potential to adversely affect local air quality through the release of fine dust, toxic gases, and other emissions of criteria pollutants. Air pollution from heavy equipment is common on agricultural

lands and farmlands that could be enrolled under the Proposed Action Alternative. The potential for increased air pollution levels associated with installation of the CPs would be localized, small relative to air pollutant emissions from agriculture, farming, and other sources in the state, and would cease upon completion of planting activities. Further, emissions would be minimized using BMPs such as erosion control fencing, temporary vegetative buffers, erosion control blankets, or similar measures. Generally, pollutant emissions from the installation and periodic maintenance of the proposed CPs would represent a substantial decrease from emissions associated with typical farming and agricultural practices. For these reasons, adverse short-term and long-term impacts on air quality would not be significant.

GHG emissions, such as CO_2, methane, and N_2O, associated with the Proposed Action Alternative would be moderate, localized, and temporary. The GHGs would be generated by the operation of a reasonable number of construction equipment and vehicles (including worker commuting and material delivery) during site preparation and planting activities. Emissions from such operations would be anticipated to be small and short-term in duration, especially when considered in a regional context. No climate impacts on a regional or global scale would be anticipated.

The Proposed Action Alternative would have moderately beneficial effects on air quality from the reduction in GHG and criteria pollutant emissions that would result from the establishment of trees and vegetation on selected tracts of farmland under the proposed CPs and the corresponding reduction of agricultural activities occurring on those lands, such as land preparation, burning fossil fuels, and the application of fertilizers and herbicides. Air quality would most likely benefit significantly in the long term from increased capture and storage of CO_2 by vegetation that would be planted under the Proposed Action Alternative. The potential for carbon sequestration and the potential reduction in criteria pollutant emissions would have an overall long term beneficial impact on air quality but would be low to moderate in the context of statewide or regional GHG emissions.

Floodplain reforestation activities included in the Proposed Action Alternative include restoration of cropland, riparian, wetland and floodplain habitats or establishing and maintaining forest cover. Establishing and maintaining forest cover, and specifically, planting of native and other desirable plant and tree species, would allow for an increased level of capture and storage of atmospheric carbon as compared to that of agricultural land. Trees reduce the amount of carbon in the atmosphere by sequestering carbon in new tissue growth and can help mitigate climate change.

Wetland soils contain some of the highest stores of soil carbon in the biosphere. The restoration of functional riparian, wetland, and floodplain habitats would increase the amount of wetland soils in which atmospheric carbon would be sequestered (Nahlik and Fennessy, 2016). Also, the 2019 Intergovernmental Panel on Climate Change special report on climate change and land indicates that methods having the largest potential for CO_2 removal are afforestation/reforestation (0.5 to 10.1 CO_2-eq per year) and soil carbon sequestration in croplands and grasslands (0.4 to 8.6 CO_2-eq per year) (Shukla, P.R., et al., 2019). This can help in climate mitigation on a longer-term basis.

Implementation of the Proposed Action Alternative would also reduce other GHG emissions, such as N_2O and methane due to a reduction in certain agricultural activities, including manure

management and livestock enteric fermentation. Increasing vegetative cover would also reduce particulate matter emissions because of decreased wind erosion, thereby further benefitting air quality. Land-use change, land-use intensification, and climate change have contributed to desertification and land degradation. The Proposed Action Alternative would, on the other hand, contribute to the amelioration of global climate change and its adverse warming impacts.

Activities such as grading, compacting, site preparation and debris removal associated with the installation of approved CPs and periodic maintenance of planted vegetation could produce dust or release particulate matter into the air. These emissions would primarily be fugitive in nature and temporary. Watering exposed soils during and after such ground-disturbing activities would reduce dust emissions. The use of diesel vehicles and heavy-duty equipment, such as tractors, backhoes, rolling harrows, and cultipackers for site preparation, tilling, and seed-bed preparation would emit air pollutants as exhaust emissions from the combustion of fuel. These emissions would be small in the context of agricultural and farming emissions within the LMAV, would be distributed across a period of several years rather than occurring simultaneously and would cease upon the completion of proposed reforestation activities. In general, pollutant emissions from the implementation and periodic maintenance of reforested areas would likely represent a net decrease relative to emissions from intensive agricultural production.

Installation and periodic maintenance of approved CPs included in the Proposed Action Alternative would not be anticipated to cause or contribute to a violation of any NAAQS or expose sensitive receptors to substantially increased pollutant concentrations. Overall, the Proposed Action Alternative would be expected to have beneficial long-term effects on air quality from increased carbon sequestration associated with additional vegetative cover and reductions in emissions from agricultural activities.

In summary, the Proposed Action Alternative would result in short-term impacts by contributing low levels of criteria pollutants and GHG emissions from site preparation, planting, and other earth-disturbing activities associated the installation and periodic maintenance of approved CPs. In the long term, the Proposed Action Alternative would also have beneficial effects on climate change from the carbon sequestration provided by the reforestation of low productivity, frequently flooded agricultural land and the overall restoration of historic floodplains in the LMAV.

3.6.5 Environmental Consequences – No Action Alternative

Under the No Action Alternative, the proposed CREP would not be implemented. Existing conditions and agricultural activities would continue in the project area with no notable benefits to air quality and carbon sequestration from ongoing agricultural activities. While impacts on air quality from ongoing agricultural activities would continue to be adverse, they would continue to be managed as they currently are and therefore, would not be significant.

GHG emissions from fuel-burning vehicles and equipment that may have been used for CREP implementation would not occur. There would be no potential opportunity for carbon sequestration from a floodplain restoration program that would have potentially acted as a sink for carbon emissions over several years resulting in climate mitigation. Thus, the No Action Alternative would have no significant adverse or beneficial effects on air quality.

3.6.6 Reasonably Foreseeable Future Actions and Other Environmental Considerations

The Proposed Action would contribute to beneficial effects on air quality when considered with other reasonably foreseeable future actions listed in **Appendix D**, particularly federal, state, and local conservation programs that would indirectly benefit air quality through the establishment of native vegetation and wetlands. These beneficial effects would outweigh any potential adverse impacts associated with the implementation and periodic maintenance of reforested floodplains, which would be temporary, infrequent, and distributed across relatively small areas throughout the project area. Other reasonably foreseeable future actions would be required to comply with applicable permitting requirements to prevent or minimize criteria pollutant emissions and the corresponding degradation of ambient air quality. Therefore, any potential adverse impacts on air quality from the Proposed Action, when considered with adverse impacts from reasonably foreseeable future actions, would not contribute to cumulatively significant adverse impacts on air quality.

3.7 Soils

3.7.1 Definition of Resource

Soil consists of unconsolidated mineral and organic materials on the Earth's surface that serves as a natural medium for the growth of plants (USDA NRCS, 2024a). The 1985 Food Security Act includes highly erodible land and wetland conservation provisions that are intended to:

- Reduce soil loss due to wind and water erosion.
- Protect the long-term capability of the United States to produce food and fiber.
- Reduce sedimentation and improve water quality.
- Assist in preserving the values, acreage, and functions of wetlands in the United States.

To maintain eligibility for most USDA programs, producers must comply with the conservation provisions, agreeing they will not:

- Produce an agricultural commodity on highly erodible land without an adequate conservation system.
- Plant an agricultural commodity on a converted wetland.
- Convert a wetland to make possible the production of an agricultural commodity. (USDA NRCS, 2024b)

3.7.2 Affected Environment

The project area is within four major Land Resource Regions defined by USDA:

- Atlantic and Gulf Coast Lowland Forest and Crop Region
- East and Central Farming and Forest Region
- Mississippi Delta Cotton and Feed Grains Region
- South Atlantic and Gulf Slope Cash Crops, Forest, and Livestock Region (USDA NRCS, 2022)

These regions and associated soil order characteristics are summarized in **Table 3.7-1**. **Figure 3.7-1** shows the Land Resource Regions relative to the project area. The majority (82 percent) of the project area is within the Mississippi Delta Cotton and Feed Grains Region. This region contains fertile soils and is one of the major agricultural crop regions in the United States. Soils of the region are dominated by vertisols where the alluvium contains large amounts of shrink-swell clay, with remaining soil orders including alfisols on Pleistocene-age terraces, and inceptisols and entisols on Holocene alluvium (USDA NRCS, n.d.). Major soil management issues in the region include controlling surface water and drainage, maintenance of soil organic matter and soil productivity, and erosion control (USDA NRCS, 2022).

Table 3.7-1 Descriptions of Soil Orders in the Project Area

Soil Order	Associated Land Resource Region(s)	Soil Order Description
Alfisols	• Mississippi Delta Cotton and Feed Grains Region • South Atlantic and Gulf Slope Cash Crops, Forest, and Livestock Region • East and Central Farming and Forest Region	These soils are present in semiarid to moist areas. They form primarily under forest or mixed vegetative cover and are productive for most crops.
Entisols	• Mississippi Delta Cotton and Feed Grains Region • Atlantic and Gulf Coast Lowland Forest and Crop Region • South Atlantic and Gulf Slope Cash Crops, Forest, and Livestock Region	Entisols occur in areas of recently deposited parent materials or in areas where erosion or deposition rates are faster than the rate of soil development, such as dunes, steep slopes, and floodplains. They are present in many environments.
Inceptisols	• Mississippi Delta Cotton and Feed Grains Region • East and Central Farming and Forest Region • South Atlantic and Gulf Slope Cash Crops, Forest, and Livestock Region	Inceptisols are soils of semiarid to humid environments that generally exhibit only moderate degrees of soil weathering and development.
Vertisols	• Mississippi Delta Cotton and Feed Grains Region	Vertisols have a high content of expanding clay minerals. They undergo pronounced changes in volume with changes in moisture. They have cracks that open and close periodically , and that show evidence of soil movement in the profiles. Because they swell when wet, vertisols transmit water very slowly and have undergone little leaching. They tend to be fairly high in natural fertility.

Source: USDA NRCS, n.d.

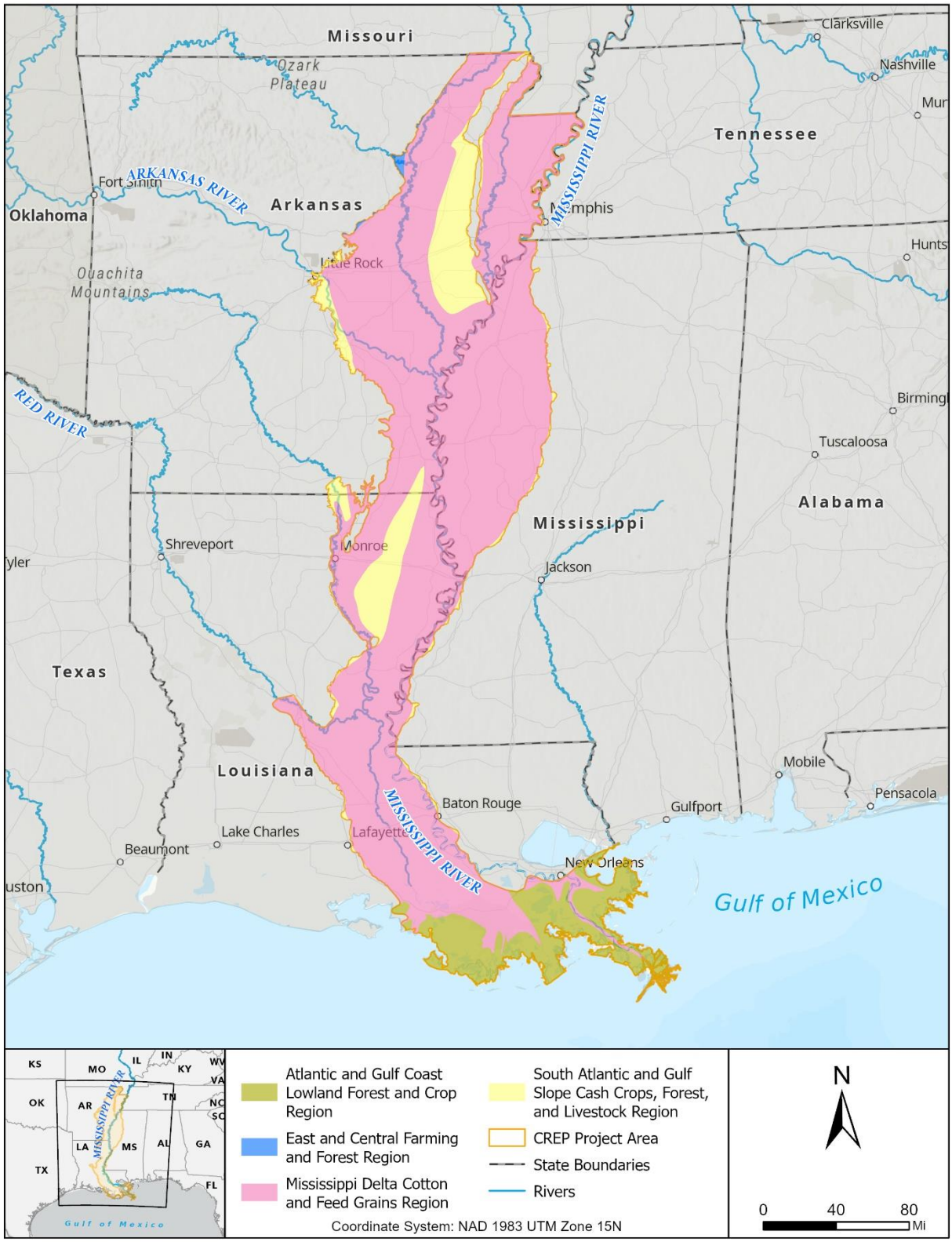

Figure 3.7-1 USDA Land Resource Regions Within the Project Area

The remaining 18 percent of the project area is distributed across the other three Land Resource Regions. The East and Central Farming and Forest Region represents less than 1 percent of the project area and consists of alfisols, inceptisols, and utisols. Primary soil resource concerns in this region include soil contamination from animal waste application; excessive nutrients and organic material in surface water; streambank erosion; and forest and pasture productivity, health, and vigor (USDA NRCS, 2022).

The South Atlantic and Gulf Slope Cash Crops, Forest, and Livestock Region represents approximately 10 percent of the project area and consists of alfisols, entisols, inceptisols, and ultisols. Primary soil resource concerns in this region include water erosion, maintenance of organic matter content and fertility and soil moisture (USDA NRCS, 2022).

The Atlantic and Gulf Coast Lowland Forest and Crop Region represents approximately 9 percent of the project area and consists of entisols and histosols. Primary soil resource concerns in this region include maintenance of soil salinity levels, content of soil organic matter, and erosion during high rainfall and storm surges (USDA NRCS, 2022).

3.7.3 Environmental Consequences Evaluation Criteria

Adverse impacts on soils would be significant if the Proposed Action permanently changed soil composition, structure, or function, increased soil erosion and downstream sedimentation, or affected unique soil conditions. Short-term and long-term impacts on soils would generally be prevented or minimized through adherence to applicable BMPs such as the use of silt fences, covering temporary soil stockpiles, seeding soils that would be exposed for extended periods, and planting with native vegetation any soils that would remain exposed following installation of the proposed CPs.

3.7.4 Environmental Consequences – Proposed Action Alternative

Under the Proposed Action Alternative, beneficial long-term effects on soils would be expected from the localized stabilization of soils. The installation of approved CPs on frequently flooded farmland would reduce soil erosion and the amounts of sediments, pollutants, and nutrients in agricultural runoff.

Short-term soil disturbance would occur during implementation of the proposed CREP from activities such as removal of existing vegetation and grading, leveling and filling for site preparation, and use of equipment to prepare seedbed including disk, harrow, cultipacker, roller or similar equipment. These activities could result in temporary increases in soil erosion; however, these increases would be minimized through adherence to applicable erosion and sediment control measures such as establishing stable grades, installing silt and erosion fencing, applying water to limit airborne dust in windy environments, using mulch, and establishing temporary vegetated buffer strips; as well as following the requirements specified in the CREP agreement between FSA and TNC. Adherence to the highly erodible lands provisions of the 1985 Food Security Act and applicable BMPs and requirements established by FSA would minimize erosion and soil compaction during the installation of CPs to the extent possible. Any short-term adverse effects on soils from implementation of the Proposed Action would occur over a period of several years rather

than simultaneously; occur in relatively small areas in the context of eligible lands within the project area and widely distributed throughout the project area rather than being concentrated in one relatively small area; and would cease upon the completion of planting activities. For these reasons, any short-term adverse effects on soils would not be significant.

In the long term, the Proposed Action Alternative would not involve ongoing soil disturbance, other than minor, infrequent, and highly localized disturbance from periodic maintenance activities. Any adverse effects on soils from these activities would not be significant. Overall, floodplain reforestation under the Proposed Action Alternative would prevent or minimize the potential for ongoing soil erosion and promote soil retention, thereby resulting in beneficial long-term effects on soils in the project area.

3.7.5 Environmental Consequences – No Action Alternative

Under the No Action Alternative, the proposed CREP would not be implemented and existing conditions would continue. Lands in portions of Arkansas, Louisiana, and Mississippi within the LMAV that would otherwise be eligible for the proposed CREP would continue to experience low agricultural productivity and soil erosion due to frequent flooding, and the beneficial effects of reducing soil erosion would not be realized. While this would represent an adverse effect, ongoing conditions would continue to be managed as they currently are and therefore, would not be significant.

3.7.6 Reasonably Foreseeable Future Actions and Other Environmental Considerations

The Proposed Action would generally have long-term beneficial effects on soils. These beneficial effects would outweigh temporary and localized adverse effects on soils from the implementation of the Proposed Action. Other reasonably foreseeable actions listed in **Appendix D** involving land disturbance would be required to comply with applicable permitting requirements and BMPs to prevent or minimize soil erosion, increased sedimentation of receiving water bodies, and other adverse effects on soils. Therefore, any potential adverse impacts on soils from the Proposed Action, when considered with adverse impacts from reasonably foreseeable future actions, would not contribute to cumulatively significant adverse impacts on soils.

3.8 Other Protected Resources

3.8.1 Definition of Resource

Other protected resources are lands preserved and managed by the state or federal government for the purpose of conservation, recreation, or research. This includes national historic landmarks, national wildlife refuges, wetland management districts, wild and scenic rivers, and American Indian reservations. National historic landmarks preserve historic properties that represent an outstanding aspect of American history and culture and are managed by NPS. USFWS manages national wildlife refuges and wetland management districts, which are protected public lands and waters that conserve America's fish, wildlife, plants, and people. Wild and scenic rivers are designated under Public Law 90-542 and are defined as rivers with outstanding natural, cultural, and recreational values preserved in a free-flowing condition for the enjoyment of present and

future generations. These rivers are managed by the National Wild and Scenic Rivers System Interdisciplinary Council composed of four federal land agencies including the Bureau of Land Management, NPS, USFWS, and the U.S. Forest Service (National Wild and Scenic Rivers, 2024). American Indian reservations are tracts of land governed by a federally recognized tribal nation and are accountable to the Bureau of Indian Affairs.

3.8.2 Affected Environment

The project area contains 28 national historic landmarks **(Figure 3.8-1, Table 3.8-1)** and 32 national wildlife refuges **(Figure 3.8.2, Table 3.8-2)**. National historic landmarks within the project area represent periods of significance ranging from prehistoric times through the 20th century. Two federally recognized Native American tribes, the Tunica-Biloxi Indian Tribe and the Chitimacha Tribe of Louisiana, have reservations in the Louisiana portion of the project area. Additional information regarding Native American tribes having ancestral ties to lands in the project area is provided in **Section 3.4.2**. There are no wetland management districts or national wild and scenic rivers located within the project area.

3.8.3 Environmental Consequences Evaluation Criteria

Impacts on other protected resources would be significant if the Proposed Action impeded or prevented the conservation or research mission, or other key functions of a particular resource and could not be avoided, minimized, or mitigated through coordination with the managing or responsible agency. For example, an impediment to or prevention of public access or experience at a national park, wildlife refuge, or historic landmark that could not be prevented, minimized, or mitigated through coordination with the NPS or USFWS would be considered an adverse impact.

3.8.4 Environmental Consequences – Proposed Action Alternative

The Proposed Action Alternative would be implemented on privately owned agricultural lands and would have no direct physical impacts on other protected resources. It is unlikely that activities associated with the installation and periodic maintenance of approved CPs included in the Proposed Action Alternative on private lands would be noticeable to users or visitors to other protected resources. If site-specific environmental reviews of lands proposed for enrollment determine that noise, increased human activity, fugitive dust, or other temporary effects from the Proposed Action Alternative could be noticeable at adjacent or nearby other protected resources, FSA would coordinate with the responsible managing agency to develop and implement measures that would prevent or minimize these effects on users or visitors at the resource. Any such effects would cease upon completion of the CP installation and maintenance activities and, in the case of periodic maintenance activities, would occur infrequently. Therefore, potential adverse short-term or long-term effects on other protected resources from the Proposed Action Alternative would not be significant.

Figure 3.8-1 National Historic Landmarks Within the Project Area

Table 3.8-1 National Historic Landmarks Within the Project Area

National Historic Landmark[1]	County/Parish	List Date	Period(s) of Significance	Area(s) of Significance
Arkansas				
Arkansas Post	Arkansas	10/09/1960	1686 to 1865	Archaeology; Exploration / Settlement; Military; Politics / Government; Transportation
Menard-Hodges Site		04/11/1989	Prehistoric; 1400 to 1499; 1500 to 1599; 1600 to 1699; 1700 to 1799	Archaeology: Prehistoric; Archaeology: Historic; Exploration / Settlement
Parkin Indian Mound	Cross	07/19/1964	Common Era 1350 to 1650	Archaeology: Prehistoric; Archaeology: Historic-Aboriginal; Exploration / Settlement
Rohwer Relocation Center Memorial Cemetery	Desha	07/06/1992	1942 to 1945	Ethnic Heritage: Asian; Social History
Beginning Point of the Louisiana Purchase Land Survey	Junction of Lee, Monroe, and Phillips	04/19/1993	1803 to 1841	Exploration / Settlement
Toltec Mounds Site	Lonoke	06/02/1978	Prehistoric	Archaeology: Prehistoric
Eaker Site	Mississippi	06/19/1996	Common Era 600 to 1450	Archaeology: Prehistoric
Nodena Site		07/19/1964	Prehistoric; 1400 to 1499; 1500 to 1599; 1600 to 1699	Archaeology: Prehistoric
Centennial Baptist Church	Phillips	07/31/2003	1905 to 1922	Religion
City of Oakland (USS Hoga) (Tug) (renamed to USS Razorback)	Pulaski	06/30/1989	1943 to 1970	Engineering; Maritime History; Military
Old State House		12/09/1997	1912 to 1916	Health / Medicine
Louisiana				
Madewood Plantation House	Assumption	05/04/1983	1800 to 1899	Architecture
Marksville Prehistoric Indian Site	Avoyelles	07/19/1964	Common Era 499 to 0	Archaeology: Prehistoric
Kidd (USS) (Destroyer)	East Baton Rouge	01/14/1986	1900-	Military

Table 3.8-1 National Historic Landmarks Within the Project Area

National Historic Landmark[1]	County/Parish	List Date	Period(s) of Significance	Area(s) of Significance
Louisiana State Capitol	East Baton Rouge	12/17/1982	1900-	Politics / Government
Shadows-On-The-Teche	Iberia	05/30/1974	1800 to 1899	Architecture; Landscape Architecture
White, Edward Douglass, House	Lafourche	12/08/1976	1800 to 1899; 1900-	Law; Politics / Government
Fort De La Boulaye	Plaquemines	10/09/1960	1700 to 1799	Historic: Non-Aboriginal; Exploration / Settlement
Fort Jackson		12/19/1960	1800 to 1899	Military
Fort St. Philip		12/19/1960	1700 to 1799; 1800 to 1899	Exploration / Settlement; Military
Parlange Plantation House	Pointe Coupee	05/30/1974	1700 to 1799	Architecture
Maison Olivier (formerly known as Acadian House)	Saint Martin	05/30/1974	1700 to 1799	Architecture
Poverty Point	West Carroll Parish	04/15/1970	1100 to 1700 Before Common Era	Prehistoric
Mississippi				
Anna Site	Adams	09/14/1993	Common Era 1200-1350	Archaeology: Prehistoric; Cultural Developments: Indigenous
Montgomery, I.T., House	Bolivar	05/11/1976	1800 to 1899	Community Planning; Exploration / Settlement; African-American History
Jaketown Site	Humphreys	12/14/1990	Before Common Era 2000 to 500	Archaeology: Prehistoric
Winterville Site	Washington	09/14/1993	Crippen Point, Winterville, and Lake George phase	Archaeology: Prehistoric
Holly Bluff Site	Yazoo	07/19/1964	2000 Before Common Era to 400 Common Era; 400 to 1600 Common Era	Archaeology

Notes:
[1] Managed by NPS
Sources: NPS, n.d.; NPS, 2004; NPS, 2015; NPS, 2017b; NPS, 2017c; NPS, 2024b

Figure 3.8-2 National Wildlife Refuges Within the Project Area

Table 3.8-2 National Wildlife Refuges Within the Project Area

National Wildlife Refuge[1]	County/Parish	Description
Arkansas		
Felsenthal National Wildlife Refuge (southern portion)	Ashley	Established in 1975 approximately 8 miles west of Crossett. This 76,000-acre refuge contains an abundance of water resources dominated by the Ouachita and Saline Rivers and the Felsenthal Pool.
Overflow National Wildlife Refuge		Established in 1980 in southeast Arkansas to protect one of the last remaining BLH forests considered vital for maintaining mallard, wood duck, and other waterfowl populations in the Mississippi Flyway.
Wapanocca National Wildlife Refuge (NWR)	Crittenden	Established in 1961 and located 4 miles west of the Mississippi River and 15 miles northwest of Memphis. Is an important stopover for waterfowl traveling through the Mississippi Flyway and for neotropical songbirds as they migrate to and from Central and South America.
Big Lake National Wildlife Refuge	Mississippi	Established in 1915 by E.O. of President Woodrow Wilson to serve as an inviolate sanctuary, reserve, and breeding ground for native and migratory birds. It is one of the nation's oldest refuges and is 11,038 acres in size.
Dale Bumpers White River National Wildlife Refuge	Monroe, Arkansas	Established in 1935 by President Roosevelt with the purpose to protect and conserve migratory birds and other wildlife resources.
Cache River National Wildlife Refuge	Prairie, Monroe	Established in 1986 to protect significant wetland habitats and provide feeding and resting areas for migrating waterfowl.
Bald Knob National Wildlife Refuge	White	Acquired as part of the North American Waterfowl Management Plan in 1993. This refuge provides a winter home for large concentrations of many species of ducks and geese.
Louisiana		
Grand Cote National Wildlife Refuge	Avoyelles	Established in 1989 to provide valuable waterfowl habitat in the Mississippi/Red River floodplain as part of the North American Waterfowl Management Plan.
Lake Ophelia National Wildlife Refuge		Established in 2000 with the purpose of conserving and restoring habitat for migratory birds, aquatic resources, and endangered plants and animals. Once part of a large contiguous Mississippi River BLH forest.
Catahoula National Wildlife Refuge	Catahoula, LaSalle	Established in 1958 as a wintering area for migratory waterfowl. Approximately 25,000 acres consisting mainly of lowland hardwood forests subject to backwater flooding from the Ouachita, Black, and Red Rivers.
Bayou Cocodrie National Wildlife Refuge	Concordia	Established in 1990 to conserve some of the last remaining, least disturbed and largest stands of BLH in the LMAV. Offers a variety of ecological niches for wildlife and harbors more than 150 species of birds and other wildlife, notably a population of Louisiana black bears.

Table 3.8-2 National Wildlife Refuges Within the Project Area

National Wildlife Refuge[1]	County/Parish	Description
Atchafalaya National Wildlife Refuge	Iberville, Saint Martin	Established in 1986 in Louisiana's "Cajun Country," Conserves over 15,000 acres of once vast LMAV BLH forest and bald cypress tupelo swamp habitats. Contains a mix of scenic bayous, oxbow lakes, swamps, and BLH forest used for hunting and recreation.
Tensas River National Wildlife Refuge	Madison, Tensas, Franklin	Established in 1980 to preserve one of the largest privately owned tracts of BLH remaining in the Mississippi Delta that contains a diversity of plant and animal species. Contains over 400 species of mammals, birds, reptiles, amphibians, and fish.
Handy Brake National Wildlife Refuge	Morehouse	Established in 1986 and provides habitat for wintering waterfowl, wading birds, and many other wetland dependent species.
Upper Ouachita National Wildlife Refuge	Morehouse, Union	Established in 1978 to manage the conservation, enhancement, and restoration of BLH forests and important, associated upland habitats as an integral component of the Lower Mississippi River Ecosystem.
Bayou Sauvage Urban National Wildlife Refuge (southern portion)	Orleans	Established in 1990 this refuge is one of the last remaining marsh areas adjacent to Lakes Pontchartrain and Borgne. The refuge contains a variety of wildlife habitats including patches of BLH forest, freshwater, brackish and estuarine tidal marshes, lagoons, canals, and natural bayous.
Black Bayou Lake National Wildlife Refuge (western portion)	Ouachita	Established in 1997, offering easily accessible hunting and recreation within the city limits of Monroe, Louisiana.
Delta National Wildlife Refuge	Plaquemines	Established in 1935 at the delta of the Mississippi River. Includes wetlands and marshes that provide habitat for migratory birds and serves as a nursery for crabs, shrimp, and fresh and saltwater fish. Large numbers of wading birds nest on the refuge, and thousands of shorebirds can be found on tidal mudflats and deltaic splays. Tens of thousands of waterfowl winter at Delta and spring and fall migrations bring many other bird species.
Cat Island National Wildlife Refuge	Pointe Coupee	Established in 2000 near the town of St. Francisville, 30 miles north of Baton Rouge. Conserves some of the region's last naturally functioning BLH forest habitat. The Mississippi River carved this unique landscape of ridges and swales, cypress-tupelo swamps, meandering drains and backwater sloughs. These features coupled with annual flooding provide highly productive habitat for diverse fish and wildlife including backwater fisheries, migratory songbirds, wintering waterfowl, Louisiana black bear, and other resident wildlife.
Bayou Teche National Wildlife Refuge (eastern portion)	Saint Mary	Located in the heart of the "Cajun Coast," established in 2001, sits along Bayou Teche, an ancient channel of the Mississippi River. The refuge consists of *seven, non-contiguous management units, ranging in size from 81 to 3,619 acres. The refuge's primary objective is to support the Louisiana black bear by restoring and managing BLH forests, cypress-tupelo swamps, bayous and marshes to ensure high quality, diverse habitat.

Table 3.8-2 National Wildlife Refuges Within the Project Area

National Wildlife Refuge[1]	County/Parish	Description
Mandalay National Wildlife Refuge	Terrebonne	Conserves and protects freshwater marshes in western Terrebonne Parish in south–central Louisiana. The refuge's freshwater marshes attract thousands of migratory waterfowl. Forested habitats provide critical spring and fall habitat for neotropical migratory birds. A unique habitat found at Mandalay is called flotant marsh - a floating marsh. The refuge is intersected with levees and man-made canals and bisected by the Gulf Intercoastal Waterway.
Mississippi		
St. Catherine Creek National Wildlife Refuge	Adams	Established in 1990. Provides an important wintering habitat for migratory waterfowl and seasonal habitat for other migratory birds
Dahomey National Wildlife Refuge	Bolivar	Established in 1990 to meet the needs of migratory birds. Includes the largest BLH habitat in northwest Mississippi.
Hillside National Wildlife Refuge	Holmes	Established in 1975 via the Fish and Wildlife Coordination Act for the conservation, maintenance and management of wildlife resources.
Morgan Brake National Wildlife Refuge		Established in 1977 to contribute to the perpetuation of the migratory waterfowl resource in the lower Mississippi River Delta and for the conservation, maintenance and management of the wildlife resource and its habitat.
Mathews Brake National Wildlife Refuge	Leflore, Holmes	Established in 1980 to provide habitat for wintering and resident waterfowl. The deep water and BLHs attract migratory bird species throughout the year. The refuge is also a valuable resting area for large numbers of migrating ducks during fall and winter.
Coldwater River National Wildlife Refuge	Quitman, Tallahatchie	Established in 1991 in northwest Mississippi as a critically important sanctuary for waterfowl and neotropical migratory birds.
Theodore Roosevelt National Wildlife Refuge	Sharkey	Established in 2004 and named in honor of President Theodore Roosevelt.
Tallahatchie National Wildlife Refuge	Tallahatchie, Grenada	Established in 1991 with the main purpose of providing habitat needs for migratory birds, especially waterfowl.
Holt Collier National Wildlife Refuge	Washington	Established in 2004. Named in honor of an African-American hunting guide who led President Theodore Roosevelt on famous Mississippi and Louisiana bear-hunting trips.
Yazoo National Wildlife Refuge	Washington	Established in 1936 in the heart of Mississippi's Delta Region 25 miles south of Greenville, and 5 miles east of the Mississippi River. It is the oldest national wildlife refuge in the state of Mississippi.
Panther Swamp National Wildlife Refuge (Theodore Roosevelt National Wildlife Refuge Complex Headquarters)	Yazoo	Established in 1978 as headquarters for one of nine refuges that make up the Theodore Roosevelt National Wildlife Refuge Complex. Includes recreation such as hunting and angling on over 40,000 acres.

Notes:
[1] Managed by USFWS.
Sources: USFWS, 2024f; USFWS, 2024g; USFWS, 2024h;

Generally, the restoration of historic floodplains in the LMAV through the reforestation of frequently flooded, low productivity agricultural lands in the project area, and corresponding improvements to water quality, wildlife, wildlife habitat, and aesthetics, would be expected to have beneficial long-term effects on other protected resources near or adjacent to lands where the Proposed Action would be implemented.

3.8.5 Environmental Consequences – No Action Alternative

Under the No Action Alternative, the proposed CREP would not be implemented and existing conditions would continue. Although opportunities to restore floodplains in the LMAV to historic conditions and achieve associated benefits on water quality, wildlife and habitat, and aesthetics would not be realized, it is anticipated that other protected resources would continue to be managed as they currently are. Therefore, the No Action Alternative would have no significant effects on other protected resources.

3.8.6 Reasonably Foreseeable Future Actions and Other Environmental Considerations

The Proposed Action would contribute to beneficial effects on other protected resources when considered with reasonably foreseeable future actions listed in **Appendix D**, particularly federal, state, and local conservation programs that are intended to improve floodplain functions and values, reduce financial burdens on agricultural producers, and improve wildlife habitat, distribution, abundance, and diversity. These beneficial effects would outweigh any potential adverse impacts associated with the installation and periodic maintenance of CPs included in the Proposed Action, which would be temporary, infrequent, and distributed across relatively small areas throughout the project area. Any potential adverse effects on other protected resources from the Proposed Action, which would be temporary and occur in relatively small areas throughout the project area, would not contribute to cumulatively significant adverse effects when considered with reasonably foreseeable future actions.

3.9 Socioeconomics and Recreation

3.9.1 Definition of Resource

Socioeconomic analysis addresses the potential effects of a proposed action on the social and economic characteristics of a particular geographic area. These characteristics include population, income, employment, and housing conditions. Socioeconomic conditions in a particular area could be affected by changes in the rate of population growth, changes in demographic characteristics, increases or decreases in employment, or changes in economic expenditures.

3.9.2 Affected Environment

3.9.2.1 Population and Economy

Ninety-three counties and parishes in Arkansas, Louisiana, and Mississippi are either fully or partially contained within the project area **(Figure 2.1-1, Appendix B)**[5]. In 2020, these counties

[5] Counties and parishes in Arkansas, Louisiana, and Mississippi that are fully or partially contained within the LMAV project area represent the project area for this socioeconomic analysis. Additional refinement of socioeconomic characteristics below the county level was not possible at the programmatic level of analysis used for this PEA.

and parishes had a population of approximately 5.2 million people, representing approximately 49 percent of the combined populations of Arkansas, Louisiana, and Mississippi (10.6 million people) **(Table 3.9-1)** (U.S. Census Bureau, 2020).

Table 3.9-1 Populations of Counties Fully or Partially Contained Within the Project Area

State	Population of Counties Fully Within the Project Area	Population of Counties Partially Within the Project Area	Total Population of Counties Fully or Partially Included Within the Project Area
Arkansas	148,950	1,203,608	1,352,558
Louisiana	189,115	3,014,711	3,203,826
Mississippi	170,706	443,695	614,401
Total	**508,771**	**4,662,014**	**5,170,785**

Source: U.S. Census Bureau, 2020

In 2023, the gross state product (GSP) for the state of Arkansas was $140.78 billion, which represented an increase of 2.5 percent from 2023 to 2024 (Bureau of Economic Analysis, 2024). Louisiana had a GSP of $244.4 billion in 2023, which represented a decrease of 0.2 percent from 2022. Mississippi, which is ranked the poorest state in the country, had a GSP of over $117 billion, with manufacturing accounting for the majority (IBISWorld, 2024).

Approximately 23 percent of the socioeconomic project area population is under the age of 18 and 18.7 percent of the population is 65 years of age or older. Fifty percent of the project area population identifies as female. Approximately 82 percent of the project area population holds a high school diploma and approximately 12.7 percent of the population has earned a bachelor's degree or higher (U.S. Census Bureau, 2020).

In 2022, more than 48 million people visited the state of Arkansas, an increase of 15.4 percent from 2021, and spent over $9.2 billion (ADPHT, 2022; ADPHT, 2023). In the same year, Louisiana attracted 42.6 million visitors, who spent around $17.1 billion (Louisiana Office of Tourism, 2024). Mississippi had 23.95 million visitors who spent a combined $7 billion in the year 2022 (Mississippi Development Authority, 2022).

Overall, the project area demonstrates a robust agricultural economy with a strong reliance on relatively small farms (less than 200 acres) and farms with annual sales of less than $2,500. As of 2022, there were nearly 32,000 farms in the project area covering more than 17.5 million acres **(Table 3.9-2)** (USDA NASS, 2022). Louisiana counties had the largest overall number of farms in the project area (13,435), while Arkansas counties contained the largest number of acres in farms (more than 7.8 million acres). The average farm size was 708 acres, with farms in Mississippi counties (834 acres) having the largest average size in the project area.

Combined, farms ranging from 10 to 49 acres (26.2 percent) and 50 to 179 acres (27.5 percent) represented more than half of the farms in the project area in 2022 **(Table 3.9-2)** with the majority of those farms being in Louisiana. Farms between 180 and 499 acres (15.5 percent) and 1,000 or more acres (15.1 percent) make up nearly 31 percent of all project area farms; with the majority of the farms being in Arkansas.

Table 3.9-2 Characteristics of Farms Within the Project Area (2022)

Farm Characteristic	States with Counties Fully or Partially Within the Project Area			Total for Project Area	
	Arkansas	Louisiana	Mississippi		
Number of Farms	11,783	13,435	6,586	**31,804**	
Land in Farms (acres)	7,759,312	5,059,351	4,724,766	**17,543,429**	
Farm Size (acres)					
1-9	596	1,755	238	**2,589**	**8.1%**
10-49	2,808	4,408	1,105	**8,321**	**26.2%**
50-179	3,388	3,498	1,870	**8,756**	**27.5%**
180-499	1,958	1,675	1,310	**4,943**	**15.5%**
500-999	906	739	736	**2,381**	**7.5%**
1000 or more	2,127	1,360	1,327	**4,814**	**15.1%**
Average Farm Size (acres)	804	487	834	**708**	

Source: USDA NASS, 2022

The total market value of agricultural products sold in the project area exceeded $12.2 billion in 2022 with an average value per farm of $490,351 **(Table 3.9-3)**. Farms in Arkansas counties had the highest total and average market values of agricultural products sold ($6.3 million and $646,114, respectively). Total farm production expenses in the project area exceeded $9.3 billion, with an average production expense per farm of $377,527. Again, farms in Arkansas had the highest total and average production expenditures ($4.6 million and $472,005, respectively).

The largest percentage of farms in the project area (40.3 percent) had sales of less than $2,500 in 2022 **(Table 3.9-3)**. Slightly less than one-quarter of farms in the project area (22.3 percent) had sales of $100,000 or more. Arkansas counties had the highest number of farms with sales of $100,000 or more, while Louisiana counties had the highest number of farms in all other sales categories.

Table 3.9-3 Market Value of Agricultural Products Sold and Farm Production Expenses (2022)

Farm Sales and Expenses	States with Counties Fully or Partially Within the Project Area			Total for Project Area	
	Arkansas	Louisiana	Mississippi		
Market Value of Agricultural Products Sold	$6,307,947,000	$3,153,606,000	$2,797,691,000	**$12,259,244,000**	
Average Market Value of Agricultural Products Sold per Farm	$646,114	$316,363	$508,577	**$490,351**	
Number of Farms with Sales:					
Less Than $2,500	4,147	5,717	2,947	**12,811**	**40.3%**
$2,500-$4,999	876	1,173	350	**2,399**	**7.5%**
$5,000-$9,999	1,100	1,341	411	**2,852**	**9.0%**

Table 3.9-3 Market Value of Agricultural Products Sold and Farm Production Expenses (2022)

Farm Sales and Expenses	States with Counties Fully or Partially Within the Project Area			Total for Project Area	
	Arkansas	Louisiana	Mississippi		
$10,000-$24,999	1,228	1,362	490	**3,080**	**9.7%**
$25,000-$49,999	719	893	368	**1,980**	**6.2%**
$50,000-$99,999	537	753	286	**1,576**	**5.0%**
$100,000 or more	3,176	2,196	1,734	**7,106**	**22.3%**
Total Farm Production Expenses	$4,585,634,000	$2,502,058,000	$2,286,910,000	**$9,374,602,000**	
Average Farm Production Expenses per Farm	$472,005	$245,381	$415,196	**$377,527**	

Source: USDA NASS, 2022

3.9.3 Environmental Consequences Evaluation Criteria

A significant effect on socioeconomic conditions would occur if a socioeconomic change from the Proposed Action would be outside the normal or anticipated range of those conditions and would adversely affect the economy and community. For small percentage changes in individual attributes, it would be unlikely that the changes would result in significant impacts at the highest level of analysis (i.e., statewide or regional). Changes to the statewide economy that are greater than agriculture's normal contribution could be considered significant, as this could affect the general economic climate of other industries on a much greater scale.

Additional changes in demographic trends (i.e., population movements) would be considered significant if a substantial percentage of the population were to enter or leave a particular area based on the changing economic conditions associated with the alternatives, rather than projected changes or changes generated by economic activities as a whole.

3.9.4 Environmental Consequences – Proposed Action Alternative

3.9.4.1 Population and Economy

The Proposed Action Alternative does not include the direct creation of new jobs or the modification or elimination of existing jobs. Therefore, the Proposed Action Alternative would have no direct effects on local employment, or on local populations, demography, or other socioeconomic conditions from the creation or elimination of jobs in areas where floodplain reforestation activities would be implemented. Some new jobs could result from the need to maintain vegetation installed under the Proposed Action Alternative, indirectly resulting in beneficial effects on local economic conditions, but the number of any such new jobs would likely be small in the context of local, state, and regional employment.

Federal and state incentives to landowners who enroll in the floodplain reforestation CREP under the Proposed Action Alternative would have beneficial effects on the local, state, and regional

economies if those incentives are reinvested into equipment, supplies, improvements, and other expenditures related to farm operations and periodic maintenance of vegetation planted as part of floodplain reforestation activities. However, it is unlikely that the enrollment of lands in the CREP and the planting of vegetation under the Proposed Action Alternative would result in substantial increases or decreases in overall property values. Therefore, no significantly beneficial effects on local tax revenues would be expected.

The Proposed Action Alternative would remove farmland from agricultural production. However, in the context of local, state, and regional agricultural production, the reforestation of up to 3,600 acres of frequently flooded, low-productivity farmland would be exceedingly small and would not be expected to have a noticeable effect on overall agricultural productivity in the project area. Land enrolled in the CREP under the Proposed Action Alternative could be converted back to farm or cropland following the expiration or cancellation of a CREP contract. Therefore, any adverse impacts from the Proposed Action Alternative on the agricultural sector of local, state, or regional economies would not be significant.

3.9.4.2 Outdoor Recreation

The Proposed Action Alternative would be implemented on privately owned lands and would not impede or restrict public access to publicly owned and maintained recreational areas or facilities. Therefore, the Proposed Action Alternative would have no adverse effects on outdoor recreation. Floodplain reforestation under the Proposed Action Alternative and the associated restoration of floodplain functions and values could help to prevent or minimize flooding in public recreation areas in the project area, which would represent a beneficial effect in the long term. However, given the relatively small area of land that would potentially be reforested under the Proposed Action Alternative (up to 3,600 acres), such beneficial effects would be small in the context of the LMAV. Landowners who enroll in the proposed CREP would retain the ability to lease enrolled lands for hunting, which could increase the availability of hunting lands in the region. While this would also represent a beneficial effect on outdoor recreation, it would be similarly small in the context of the overall LMAV. In the long term, the Proposed Action Alternative would also potentially result in additional indirect beneficial effects through the enhancement of biodiversity, game species habitat, and water quality improvement.

3.9.5 Environmental Consequences – No Action Alternative

Under the No Action Alternative, the proposed CREP would not be implemented and existing conditions in the LMAV would continue. Opportunities to provide financial benefits to farmers who voluntarily reforest frequently flooded, low-productivity farmland, and realize associated beneficial effects on outdoor recreation from the restoration of floodplain functions and values and the provision of additional leased hunting lands, would not be realized. However, while these conditions would represent an adverse effect, they would be relatively small in the context of the overall LMAV. Therefore, potential adverse effects from the No Action Alternative on socioeconomics and outdoor recreation would not be significant.

3.9.6 Reasonably Foreseeable Future Actions and Other Environmental Considerations

The Proposed Action would contribute to beneficial effects on socioeconomic and recreational resources when considered with other reasonably foreseeable future actions listed in **Appendix D**, particularly those intended to improve economics and tourism. These beneficial effects would outweigh any potential adverse impacts associated with the implementation of proposed reforestation practices included in the Proposed Action, which would be temporary, infrequent, and distributed across relatively small areas throughout the project area. Other reasonably foreseeable future actions, whether implemented by federal, state, or local agencies, or private landowners, would be required to comply with applicable permitting requirements to avoid, minimize, or mitigate potential adverse impacts on socioeconomics and outdoor recreational resources. Therefore, any potential adverse impacts on socioeconomic and recreational resources from the Proposed Action, when considered with adverse impacts from reasonably foreseeable future actions, would not contribute to cumulatively significant adverse impacts on socioeconomic and recreational resources.

3.10 Environmental Justice

3.10.1 Definition of Resource

USEPA defines environmental justice as the just treatment and meaningful involvement of all people, regardless of income, race, color, national origin, tribal affiliation, or disability, in agency decision-making and other federal activities that affect human health and the environment so that people:

- are fully protected from disproportionate and adverse human health and environmental effects (including risks) and hazards, including those related to climate change, the cumulative impacts of environmental and other burdens, and the legacy of racism or other structural or systemic barriers; and
- have equitable access to a healthy, sustainable, and resilient environment in which to live, play, work, learn, grow, worship, and engage in cultural and subsistence practices (USEPA, 2024k).

E.O. 12898 requires federal agencies to address disproportionate environmental and human health effects on minority and low-income communities potentially resulting from federally funded or authorized activities. For the environmental justice analysis presented in this PEA, minority populations are defined as persons identifying as Alaska Native and American Indian, Asian, Black or African American, Native Hawaiian, or Pacific Islander or persons of Hispanic origin (of any race). Low-income populations include persons living below the poverty threshold as determined by the U.S. Census Bureau. Collectively, these populations are referred to as “communities with environmental justice concerns” in accordance with the Phase 2 revisions to the NEPA implementing regulations issued by the Council on Environmental Quality on May 1, 2024, effective July 1, 2024 (Federal Register, Vol. 98, No. 85, May 1, 2024).

3.10.2 Affected Environment

The majority of the project area population identifies as White (55.9 percent) followed by Black or African American (40.9 percent) **(Table 3.10-1)**. Mississippi counties within the project area contain the largest concentration of persons identifying as Black or African American (63.6 percent) relative to counties and parishes in Arkansas and Louisiana, respectively. Persons identifying as Hispanic or Latino represent 4.3 percent of the project area population, while those identifying within the remaining racial and ethnic categories shown in **Table 3.10-1** represent an average of less than 1 percent of the project area population (U.S. Census Bureau, 2022).

Table 3.10-1 Racial and Ethnic Groups by Counties Within the Project Area

Race or Ethnicity	States with Counties Fully or Partially Within the Project Area			Total for Project Area (percent)
	Arkansas (percent)	Louisiana (percent)	Mississippi (percent)	
White Alone	70.9	62.6	34.3	**55.9**
Black or African American	25.5	33.5	63.6	**40.9**
American Indian and Alaska Native	0.7	0.9	0.3	**0.6**
Asian	0.8	1.2	0.6	**0.9**
Native Hawaiian and Pacific Islander	0.2	0.1	0	**0.1**
Hispanic or Latino	4.4	5.6	2.8	**4.3**

Source: U.S. Census Bureau, 2023

Nearly 24 percent of the population is in poverty within the project area **(Table 3.10-2)**. The percentage of persons in poverty in the project area ranges from 2.5 to more than 10 percentage points higher than the respective statewide poverty percentages (U.S. Census Bureau, 2023).

Table 3.10 2 Persons in Poverty Within the Project Area Compared to Statewide Poverty

Poverty Characteristic	States with Counties Fully or Partially Within the Project Area			Total for Project Area (percent
	Arkansas (percent)	Louisiana (percent	Mississippi (percent	
Average Percentage of Persons in Poverty in Project Area	21.0	21.1	29.3	**23.8**
Statewide Percentage of Persons in Poverty	16.8	18.6	19.1	**--**

Source: U.S. Census Bureau, 2023

Based on a query of the Climate and Economic Justice Screening Tool (CEJST), 503 of the 694 U.S. Census Tracts within the project area (approximately 73 percent) are identified as disadvantaged because they exceed indicators for one or more burdens in the following categories: climate change, energy, health, housing, legacy pollution, transportation, water and wastewater, and workforce development (CEJST, 2024). These tracts contain approximately 66 percent of the project area's total population **(Figure 3.10-1** through **Figure 3.10-3)**.

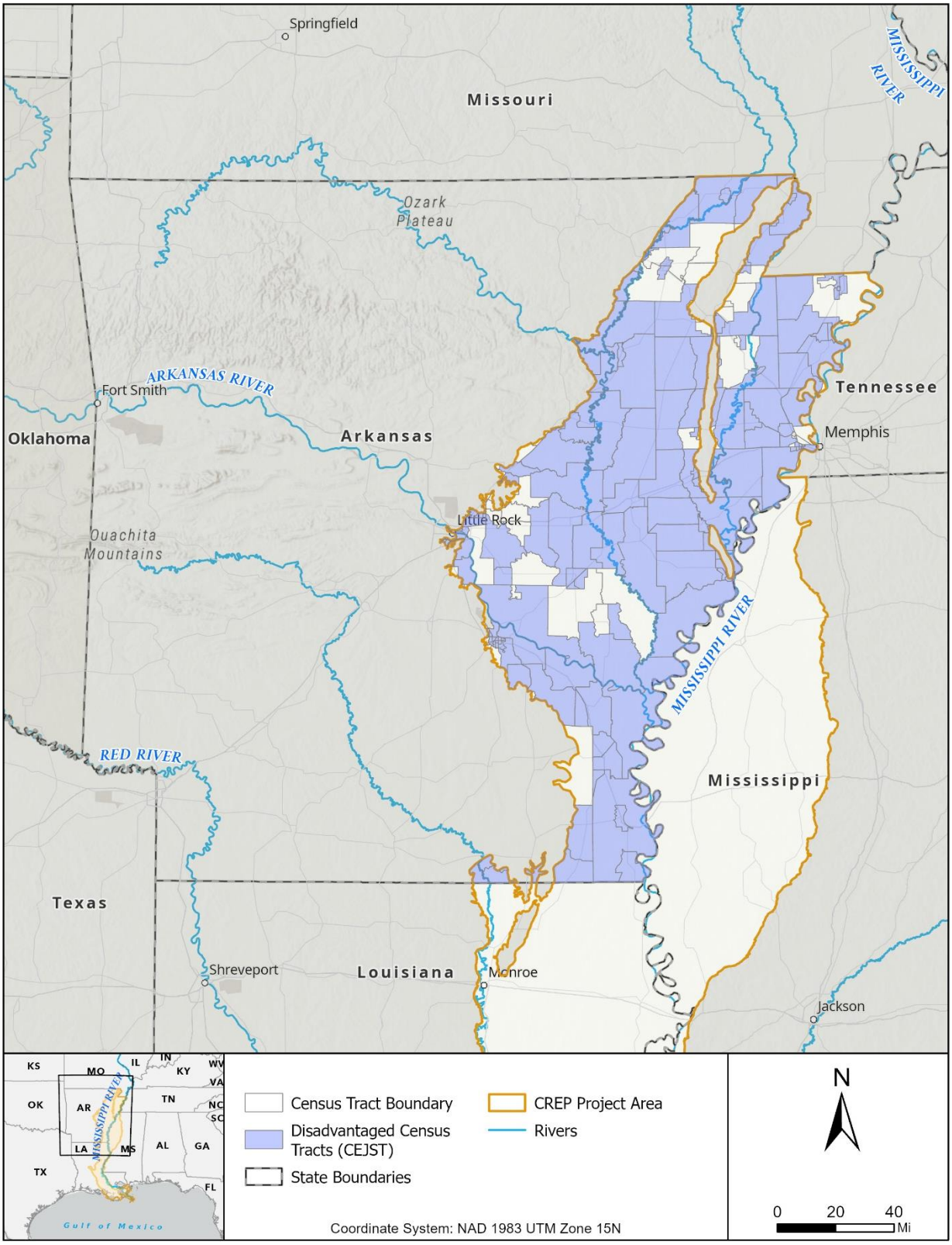

Figure 3.10-1 Disadvantaged U.S. Census Tracts in the Arkansas Portion of the Project Area

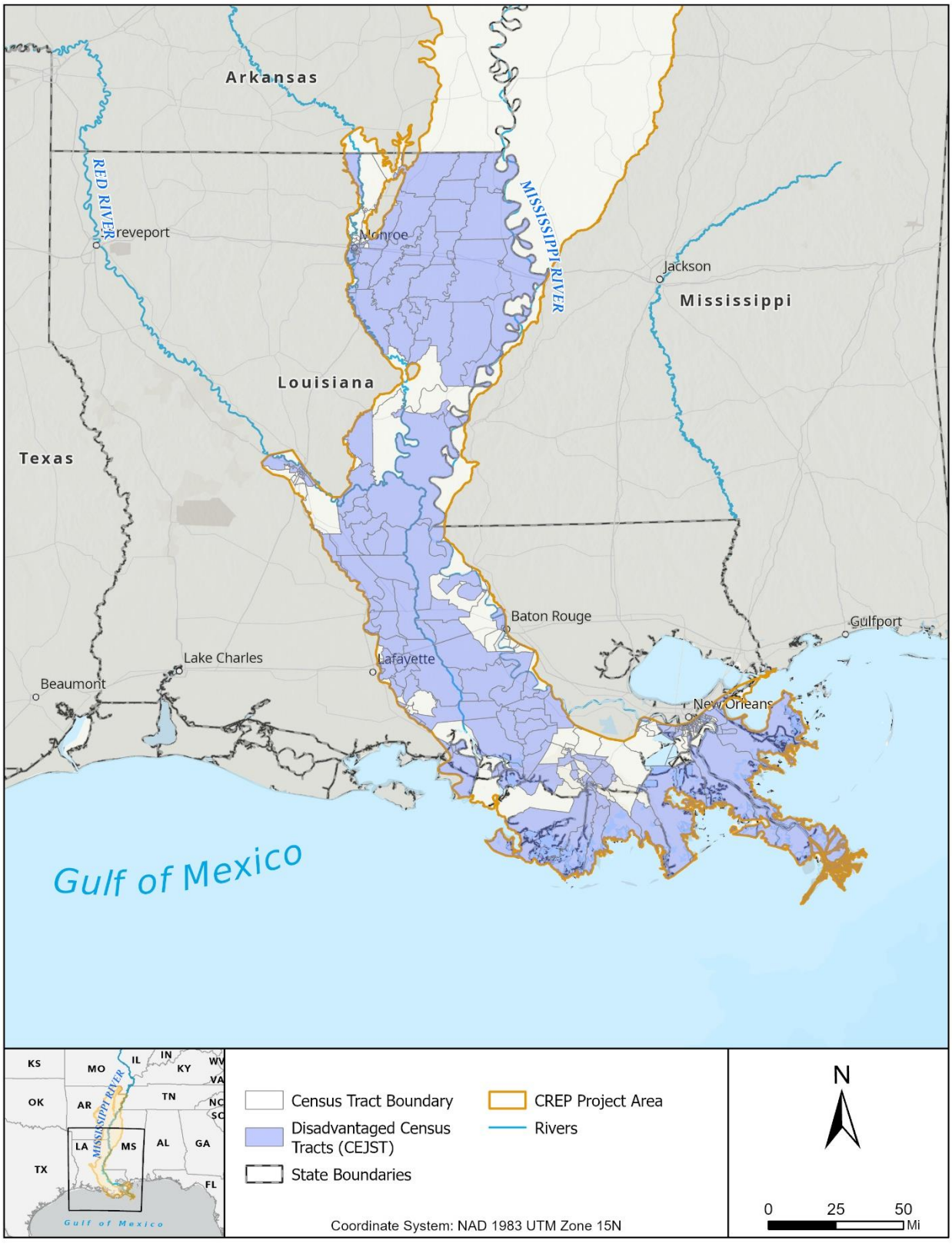

Figure 3.10-2 Disadvantaged U.S. Census Tracts in the Louisiana Portion of the Project Area

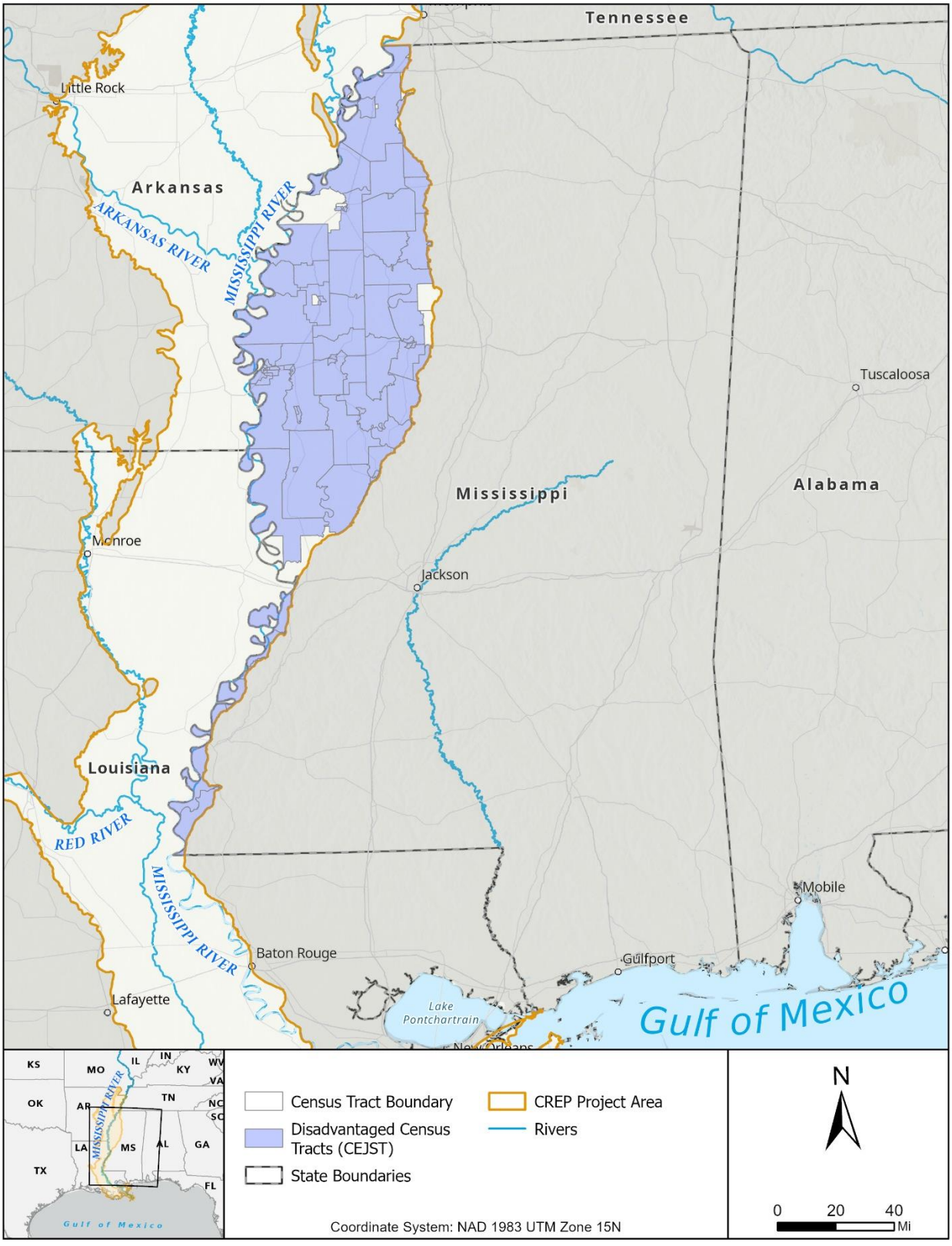

Figure 3.10-3 Disadvantaged U.S. Census Tracts in the Mississippi Portion of the Project Area

3.10.3 Environmental Consequences Evaluation Criteria

Disproportionately high and adverse impacts on communities with environmental justice concerns resulting from the Proposed Action would be considered significant. A disproportionately adverse impact is one that is experienced by a community with environmental justice concerns at a greater intensity, severity, or duration relative to a similar impact experienced by a community without environmental justice concerns.

3.10.4 Environmental Consequences – Proposed Action Alternative

The size and location of lands that would be enrolled in CREP under the Proposed Action Alternative, if implemented, is not currently known. Overall, however, it is anticipated that the Proposed Action Alternative would have beneficial long-term effects on communities with environmental justice concerns from the reforestation of up to 3,600 acres of frequently flooded, low-productivity farmland throughout the project area and corresponding beneficial effects on other resources such as air and water quality, and socioeconomics. Although communities with environmental justice concerns adjacent to or near lands enrolled in the CREP could experience increased levels of noise or air pollutant emissions during planting or periodic maintenance of reforested areas, resulting in an adverse effect, such effects would not be substantively worse than those that could be experienced by nearby communities without environmental justice concerns. These effects would be infrequent, would occur intermittently over a period of several years rather than occurring simultaneously, would be distributed throughout the project area, and would cease upon the completion of floodplain reforestation activities. Potential adverse effects from the Proposed Action Alternative would not be expected to further exceed indicators of burdens on disadvantaged communities identified in CEJST or cause non-disadvantaged communities to exceed those indicators and subsequently be considered disadvantaged.

Prior to enrolling lands in CREP under the Proposed Action Alternative, USDA NRCS conservation planners would complete Form NRCS-CPA-52, Environmental Evaluation Worksheet, on behalf of FSA as part of the site-specific environmental review process. Completion of this checklist would include identifying any potential environmental justice concerns, such as in Section G of Form NRCS-CPA-52. Any potential disproportionately high and adverse effects on communities with environmental justice concerns identified during the site-specific review process would be addressed and prevented prior to enrolling lands in the CREP.

For these reasons, any potential adverse effects on communities with environmental justice concerns would not be significant.

3.10.5 Environmental Consequences – No Action Alternative

Under the No Action Alternative, the proposed CREP would not be implemented and existing conditions in the LMAV would continue. Opportunities to achieve indirect beneficial effects on disadvantaged communities through the voluntary reforestation of up to 3,600 acres of frequently flooded, low-productivity farmland would not be realized. However, while this would represent an adverse effect, it would be small in the context of the overall project area and therefore, would not be significant.

3.10.6 Reasonably Foreseeable Future Actions and Other Environmental Considerations

Beneficial effects from the Proposed Action, when considered with beneficial effects from reasonably foreseeable future actions listed in **Appendix D**, would contribute to cumulatively beneficial effects on communities with environmental justice concerns in the vicinity of lands enrolled in the floodplain reforestation CREP under the Proposed Action. Any potential adverse effects on communities with environmental justice concerns, which would be infrequent, temporary, and limited to relatively small areas throughout the project area, would not contribute to cumulatively significant adverse effects when considered with reasonably foreseeable future actions.

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APPENDICES

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TABLE OF CONTENTS

LIST OF TABLES

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APPENDIX A

AGENCY, TRIBAL, AND PUBLIC COORDINATION

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Appendix A – Agency, Tribal, and Public Coordination

A.1 Introduction

In accordance with National Environmental Policy Act, the United States Department of Agriculture (USDA) Farm Service Agency (FSA) is providing opportunities for the public and other stakeholders to review and comment on the Proposed Action analyzed in the Programmatic Environmental Assessment (PEA). The Draft PEA is being made available for a 30-day public review and comment period from October 21 to November 20, 2024. A Notice of Availability (NOA) announcing the 30-day Draft PEA public comment period was published in the *Jonesboro Sun* (Arkansas), the *Baton Rouge Advocate* (Louisiana), and the *Jackson Clarion Ledger* (Mississippi). Letters announcing the availability of the Draft PEA for review and requesting comments were sent to multiple federal, state, and local agencies and officials, organizations, and Native American tribes with ancestral ties to lands in the project area. These agencies, officials, and tribes are listed in **Section A.2**.

An electronic version of the Draft PEA is available for review and download on FSA's website at https://www.fsa.usda.gov/programs-and-services/environmental-cultural-resource/nepa/current-nepa-documents/index. Printed copies of the Draft PEA are available for review upon request at local county USDA Service Centers. A point of contact for submitting comments during the 30-day public review period is provided in the Draft PEA.

In accordance with Section 7 of the Endangered Species Act (ESA), FSA conducted consultation with U.S. Fish and Wildlife Service offices in Arkansas, Louisiana, and Mississippi regarding federally listed threatened, endangered, and candidate species and federally designated critical habitat that could potentially be affected by the Proposed Action. A representative Section 7 consultation letter is provided in **Section A.3**. To date, no response from USFWS has been received.

In accordance with Section 106 of the National Historic Preservation Act, FSA will initiate consultation with respective State Historic Preservation Officers and Native American tribes having ancestral ties to the project area once lands are identified for enrollment under the Proposed Action, if implemented.

A.2 List of Stakeholders

A.2.1 Federal and State Agencies

U.S. Fish and Wildlife Service
Arkansas Ecological Services Field Office
Chris Davidson, Deputy Field Supervisor

U.S. Fish and Wildlife Service
Louisiana Ecological Services Field Office
Brigette Firmin, Field Supervisor

U.S. Fish and Wildlife Service
Mississippi Ecological Services Field Office
James Austin, Field Supervisor

Arkansas Historic Preservation Program
Scott Kaufman, SHPO

Louisiana Office of Cultural Development
Kristin Sanders, SHPO

Louisiana Office of Cultural Development
Division of Archaeology
Dr. Charles McGimsey, State Archaeologist and Director

U.S. Army Corps of Engineers
Memphis District Regulatory Division

U.S. Army Corps of Engineers
New Orleans District, CEMVN-RG

U.S. Army Corps of Engineers
Vicksburg District, Regulatory Division

Arkansas Game and Fish Commission
Austin Booth, Director

Louisiana Department of Wildlife and Fisheries
Tyler Bosworth, Chief of Staff

Mississippi Department of Wildlife Fisheries and Parks
Museum of Natural Science
Angel Rohnke, Museum Director

Arkansas Department of Agriculture
Natural Resources Division
Chris Colclasure, Director

Louisiana Department of Agricultural and Forestry
Office of Forestry

Louisiana Department of Energy and Natural Resources
Office of Mineral Resources
Andrew Young, Assistant Secretary

USDA NRCS
Arkansas State Office
Michael Sullivan, State Conservationist

USDA NRCS Louisiana State Office
Mitch Mouton, Acting State Conservationist

USDA NRCS Mississippi State Office
Kurt Readus, State Conservationist

USDA Forest Service
National Forests in Mississippi
Forest Supervisor's Office

USDA Forest Service
Kisatchie National Forest
Supervisor's Office

A.2.2 Native American Tribes Affiliated with the Project Area

The following Native American tribes were identified using the U.S. Department of Housing and Urban Development Tribal Directory Assessment Tool (https://egis.hud.gov/tdat/) as having an affiliation with the project area:

Alabama-Quassarte Tribal Town
Brina Williams, THPO

Alabama-Quassarte Tribal Town
Wilson Yargee, Chief

Apache Tribe of Oklahoma
Durell Cooper, Chairman

Muscogee (Creek) Nation
Turner Hunt, THPO

Osage Nation
Dr. Andrea A. Hunter, Director and THPO

Quapaw Nation
Billie Burtrum, THPO

Caddo Nation of Oklahoma
Kelly Factor, Vice Chairman

Caddo Nation of Oklahoma
Bobby Gonzalez, Chairman

Caddo Nation of Oklahoma
Jonathan Rohrer, THPO

Cherokee Nation
Elizabeth Toombs, THPO

Choctaw Nation of Oklahoma
Gary Batton, Chief

Choctaw Nation of Oklahoma
Ian Thompson, THPO

Coushatta Tribe of Louisiana
Jonathan Cernek, Chairman

Coushatta Tribe of Louisiana
Kristian Poncho, THPO

Delaware Nation, Oklahoma
Deborah Dotson, President

Delaware Nation, Oklahoma
Katelyn Lucas, THPO

Eastern Shawnee Tribe of Oklahoma
Lora Nuckolls, THPO/Director of Culture Preservation Programs/NAGPRA

Eastern Shawnee Tribe of Oklahoma
Glenna Wallace, Chief

Mississippi Band of Choctaw Indians
Cyrus Ben, Chief

Muscogee (Creek) Nation
David Hill, Principal Chief

Quapaw Nation
Wena Supernaw, Chair

Alabama-Coushatta Tribe of Texas
Bryant Celestine, THPO

Alabama-Coushatta Tribe of Texas
Ricky Sylestine, Chairman

Chitimacha Tribe of Louisiana
Melissa Darden, Chairman

Chitimacha Tribe of Louisiana
Kimberly Walden, THPO

Jena Band of Choctaw Indians
Johnna Flynn, Acting THPO

Jena Band of Choctaw Indians
Libby Rogers, Tribal Chief

Jena Band of Choctaw Indians
B. Cheryl Smith, Principal Chief

Seminole Tribe of Florida
Marcellus Osceola, Chairman

Seminole Tribe of Florida
Tina Marie Osceola, THPO

Tunica-Biloxi Indian Tribe
Early Barbry, Jr., Tribal Preservation Officer

Tunica-Biloxi Indian Tribe
Marshall Pierite, Chairman

Chickasaw Nation
Bill Anoatubby, Governor

Chickasaw Nation
Kirk Perry, Historic Preservation Executive Officer

A.3 Section 7 Consultation

A.3.1 Representative Letter to U.S. Fish and Wildlife Service

USDA Farm Service Agency
U.S. DEPARTMENT OF AGRICULTURE

U.S. Fish and Wildlife Service
Mississippi Ecological Services Field Office
James Austin, Field Supervisor
6578 Dogwood View Parkway
Jackson, MS 39213
Sent via email to: msfosection7consultation@fws.gov

August 27, 2024

Dear Mr. Austin,

The United States Department of Agriculture (USDA) Farm Service Agency (FSA), in coordination with The Nature Conservancy (TNC), proposes to implement a Floodplain Reforestation Conservation Reserve Enhancement Program (CREP) in the Lower Mississippi Alluvial Valley (Proposed Action). CREP is a voluntary program in which participants remove cropland from agricultural production and convert the land to native trees and other vegetation. CREP is authorized under provisions of the Food Security Act of 1985, as amended (16 United States Code [U.S.C.] § 3831 et. seq.) and regulations at 7 Code of Federal Regulations (CFR) Part 1410. The USDA FSA administers CREP on behalf of the USDA Commodity Credit Corporation.

Under the Proposed Action, FSA would implement floodplain reforestation practices on up to 3,600 acres of privately owned, low productivity, frequently flooded farmland in portions of Arkansas, Louisiana, and Mississippi within the Lower Mississippi Alluvial Valley. Site preparation, seedlings, and planting costs would be covered under the Proposed Action at no cost to the landowner. Technical guidance would be provided to landowners by local foresters through TNC. Eligible landowners would receive annual incentive payments for enrolled acreage in return for entering 30-year contracts with FSA. Generally, the Proposed Action is intended to provide environmental benefits such as the restoration of historic floodplain functions and values, improved water quality in the Mississippi River and Gulf of Mexico, increased wildlife habitat, and carbon sequestration while reducing financial impacts on farmers.

Primary components of the Proposed Action are summarized in **Attachment 1**. Areas in Arkansas, Louisiana, and Mississippi where the Proposed Action could be implemented are shown on **Attachment 2**. A list of counties and parishes that are fully or partially included within the extent of eligible land is provided as **Attachment 3**.

FSA is preparing a Draft Programmatic Environmental Assessment (PEA) to evaluate potential environmental impacts from the Proposed Action. The size and location of lands that would be enrolled under the Proposed Action, if implemented, is not currently known. Therefore, potential effects on federally listed threatened, endangered, and candidate species, and federally designated critical habitat, cannot be determined at this time. Prior to enrolling new lands under the Proposed Action, FSA would conduct site-specific reviews to evaluate

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potential effects on environmental resources. These reviews would include further consultation with USFWS in accordance with Section 7 of the Endangered Species Act (ESA) to identify potential effects on federally listed species and critical habitat, and appropriate measures to prevent or minimize any potential adverse effects. Overall, it is anticipated that the implementation of floodplain reforestation practices under the Proposed Action would have beneficial effects on all wildlife and vegetation, including federally listed species.

FSA has obtained an Official Species List for the extent of eligible land from the USFWS Information for Planning and Consultation website to support development of the PEA (**Attachment 4**). In accordance with Section 7 of the ESA, FSA also requests additional information or any comments that may be beneficial in the development of the PEA and determination of potential effects on federally listed species or federally designated critical habitat. When available, the Draft PEA will be provided to your office for review during the 30-day public comment period. Please send your comments or requests for additional information to Rose Vath via email at rose.vath@usda.gov. Your comments are requested within 60 days of receiving this letter to ensure that they are sufficiently addressed in the PEA. Thank you for your assistance.

Sincerely,

ROSE VATH Digitally signed by ROSE VATH
Date: 2024.08.27 09:33:17 -04'00'

Rose Vath
Lead Regional Environmental Coordinator
FPAC-BC Environmental Activities Division

Attachments:
Attachment 1 – Primary Components of the Proposed Action
Attachment 2 – Extent of Eligible Land for the Proposed Floodplain Reforestation CREP
Attachment 3 – Counties and Parishes Within the Extent of Eligible Land
Attachment 4 – USFWS Official Species List

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Attachment 1 – Primary Components of the Proposed Action

CREP Component	Proposed Action
Extent of Eligible Land	38,895.2 square miles (24,893,000 acres)
Targeted Total Land Area Enrollment (acres)	3,600
Anticipated Minimum / Maximum Size of Enrolled Parcels (acres)	10 / 500
Extent of Eligible Land in Each State	**Arkansas** – 14844.1 square miles (9,500,200 acres) **Louisiana** – 16,291.2 square miles (10,426,000 acres) **Mississippi** – 7,759.9 square miles (4,966,300 acres)
Number of Counties and Parishes In the Extent of Eligible Land [1]	**Arkansas** – 31 (8 counties fully included and 23 counties partially included) **Louisiana** – 39 (11 parishes fully included and 28 partially included) **Mississippi** – 23 (9 counties fully included and 14 partially included)
Contract Duration	30 years
Annual Incentive Payment	$100 per acre for lands enrolled in the proposed CREP over the duration of the 30-year contract term

[1] A complete list of counties and parishes within the extent of eligible land is provided in **Attachment 3**.

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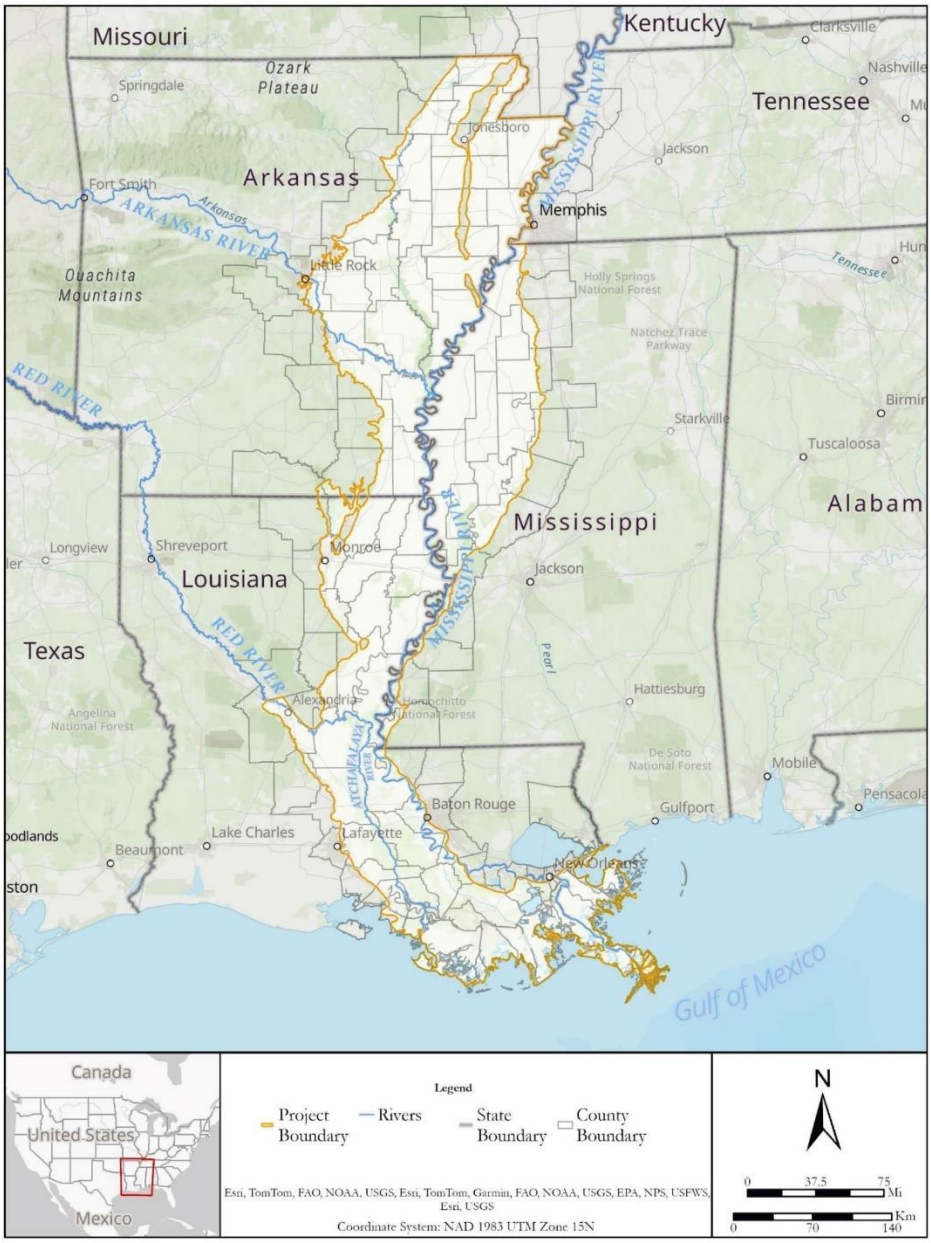
Attachment 2 – Extent of Eligible Land for the Proposed Floodplain Reforestation CREP



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Attachment 3 – Counties and Parishes Within the Extent of Eligible Land

Arkansas Counties	Louisiana Counties	Mississippi Counties
Fully Within Extent of Eligible Land		
Arkansas County	Assumption Parish	Bolivar County
Chicot County	Concordia Parish	Coahoma County
Crittenden County	East Carroll Parish	Humphreys County
Desha County	Franklin Parish	Issaquena County
Mississippi County	Iberville Parish	Leflore County
Monroe County	Madison Parish	Quitman County
Prairie County	Pointe Coupee Parish	Sharkey County
Woodruff County	Richland Parish	Sunflower County
	Tensas Parish	Washington County
	West Baton Rouge Parish	
	West Carroll Parish	
Partially Within Extent of Eligible Land		
Ashley County	Ascension Parish	Adams County
Clay County	Avoyelles Parish	Carroll County
Cleveland County	Caldwell Parish	Claiborne County
Craighead County	Catahoula Parish	DeSoto County
Cross County	East Baton Rouge Parish	Grenada County
Drew County	East Feliciana Parish	Holmes County
Grant County	Evangeline Parish	Jefferson County
Greene County	Grant Parish	Panola County
Independence County	Iberia Parish	Tallahatchie County
Jackson County	Jefferson Parish	Tate County
Jefferson County	La Salle Parish	Tunica County
Lawrence County	Lafayette Parish	Warren County
Lee County	Lafourche Parish	Wilkinson County
Lincoln County	Morehouse Parish	Yazoo County
Lonoke County	Orleans Parish	
Phillips County	Ouachita Parish	
Poinsett County	Plaquemines Parish	
Pulaski County	Rapides Parish	
Randolph County	Saint Bernard Parish	
Saint Francis County	Saint Charles Parish	
Saline County	Saint James Parish	
Union County	Saint Landry Parish	
White County	Saint Martin Parish	
	Saint Mary Parish	
	Saint Tammany Parish	
	Terrebonne Parish	
	Union Parish	
	West Feliciana Parish	

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Attachment 4: US Fish and Wildlife Service Official Species List

(presented in Appendix C)

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APPENDIX B

LIST OF COUNTIES / PARISHES FULLY OR PARTIALLY LOCATED WITHIN THE PROJECT AREA

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Appendix B – List of Counties/Parishes Fully or Partially Located Within the Project Area

Table B-1 Counties and Parishes Fully or Partially Located Within the Project Area

Arkansas Counties	Louisiana Counties	Mississippi Counties
Fully Within Project Area	**Fully Within Project Area**	**Fully Within Project Area**
Arkansas County	Assumption Parish	Bolivar County
Chicot County	Concordia Parish	Coahoma County
Crittenden County	East Carroll Parish	Humphreys County
Desha County	Franklin Parish	Issaquena County
Mississippi County	Iberville Parish	Leflore County
Monroe County	Madison Parish	Quitman County
Prairie County	Pointe Coupee Parish	Sharkey County
Woodruff County	Richland Parish	Sunflower County
	Tensas Parish	Washington County
	West Baton Rouge Parish	
	West Carroll Parish	
Partially Within Project Area	**Partially Within Project Area**	**Partially Within Project Area**
Ashley County	Ascension Parish	Adams County
Clay County	Avoyelles Parish	Carroll County
Cleveland County	Caldwell Parish	Claiborne County
Craighead County	Catahoula Parish	DeSoto County
Cross County	East Baton Rouge Parish	Grenada County
Drew County	East Feliciana Parish	Holmes County
Grant County	Evangeline Parish	Jefferson County
Greene County	Grant Parish	Panola County
Independence County	Iberia Parish	Tallahatchie County
Jackson County	Jefferson Parish	Tate County
Jefferson County	La Salle Parish	Tunica County
Lawrence County	Lafayette Parish	Warren County
Lee County	Lafourche Parish	Wilkinson County
Lincoln County	Morehouse Parish	Yazoo County
Lonoke County	Orleans Parish	
Phillips County	Ouachita Parish	
Poinsett County	Plaquemines Parish	
Pulaski County	Rapides Parish	
Randolph County	Saint Bernard Parish	
Saint Francis County	Saint Charles Parish	
Saline County	Saint James Parish	
Union County	Saint Landry Parish	
White County	Saint Martin Parish	
	Saint Mary Parish	
	Saint Tammany Parish	
	Terrebonne Parish	
	Union Parish	
	West Feliciana Parish	

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APPENDIX C

USFWS OFFICIAL SPECIES LIST

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Louisiana Ecological Services Field Office
200 Dulles Drive
Lafayette, LA 70506
Phone: (337) 291-3100 Fax: (337) 291-3139

In Reply Refer To: 10/07/2024 21:09:12 UTC
Project Code: 2024-0111814
Project Name: TNC CREP

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

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, and candidate species, as well as designated and proposed critical habitat that may occur within the boundary of your proposed project and may be affected by your proposed project. The Fish and Wildlife Service (Service) is providing this list under section 7 (c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). Changes in this species list may occur due to new information from updated surveys, changes in species habitat, new listed species and other factors. Because of these possible changes, feel free to contact our office (337-291-3109) for more information or assistance regarding impacts to federally listed species. The Service recommends visiting the IPaC site or the Louisiana Ecological Services Field Office website (https://www.fws.gov/southeast/lafayette) at regular intervals during project planning and implementation for updated species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the habitats 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 Federal trust resources and to determine whether projects may affect Federally listed species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)).

Bald eagles have recovered and were removed from the List of Endangered and Threatened Species as of August 8, 2007. Although no longer listed, please be aware that bald eagles are protected under the Bald and Golden Eagle Protection Act (BGEPA) (16 U.S.C. 668 et seq.).

The Service developed the National Bald Eagle Management (NBEM) Guidelines to provide landowners, land managers, and others with information and recommendations to minimize potential project impacts to bald eagles, particularly where such impacts may constitute "disturbance", which is prohibited by the BGEPA. A copy of the NBEM Guidelines is available at: https://www.fws.gov/migratorybirds/pdf/management/nationalbaldeaglenanagementguidelines.pdf

Those guidelines recommend: (1) maintaining a specified distance between the activity and the nest (buffer area); (2) maintaining natural areas (preferably forested) between the activity and nest trees (landscape buffers); and (3) avoiding certain activities during the breeding season. Onsite personnel should be informed of the possible presence of nesting bald eagles within the project boundary, and should identify, avoid, and immediately report any such nests to this office. If a bald eagle nest occurs or is discovered within or adjacent to the proposed project area, then an evaluation must be performed to determine whether the project is likely to disturb nesting bald eagles. That evaluation may be conducted on-line at: https://www.fws.gov/southeast/our-services/eagle-technical-assistance/. Following completion of the evaluation, that website will provide a determination of whether additional consultation is necessary. The Division of Migratory Birds for the Southeast Region of the Service (phone: 404/679-7051, e-mail: SEmigratorybirds@fws.gov) has the lead role in conducting any necessary consultation.

Activities that involve State-designated scenic streams and/or wetlands are regulated by the Louisiana Department of Wildlife and Fisheries and the U.S. Army Corps of Engineers, respectively. We, therefore, recommend that you contact those agencies to determine their interest in proposed projects in these areas.

Activities that would be located within a National Wildlife Refuge are regulated by the refuge staff. We, therefore, recommend that you contact them to determine their interest in proposed projects in these areas.

Additional information on Federal trust species in Louisiana can be obtained from the Louisiana Ecological Services website at: https://www.fws.gov/southeast/lafayette

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.

Note: IPaC has provided all available attachments because this project is in multiple field office jurisdictions.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Bald & Golden Eagles

- Migratory Birds
- Marine Mammals
- Coastal Barriers
- Wetlands

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:

Louisiana Ecological Services Field Office
200 Dulles Drive
Lafayette, LA 70506
(337) 291-3100

This project's location is within the jurisdiction of multiple offices. However, only one species list document will be provided for all offices. The species and critical habitats in this document reflect the aggregation of those that fall in each of the affiliated office's jurisdiction. Other offices affiliated with the project:

Arkansas Ecological Services Field Office
110 South Amity Suite 300
Conway, AR 72032-8975
(501) 513-4470

Mississippi Ecological Services Field Office
6578 Dogwood View Parkway, Suite A
Jackson, MS 39213-7856
(601) 965-4900

Missouri Ecological Services Field Office
101 Park Deville Drive
Suite A
Columbia, MO 65203-0057
(573) 234-2132

Tennessee Ecological Services Field Office
446 Neal Street
Cookeville, TN 38501-4027
(931) 528-6481

PROJECT SUMMARY

Project Code: 2024-0111814
Project Name: TNC CREP
Project Type: Restoration / Enhancement - Agricultural
Project Description: The Proposed Action Alternative would implement a floodplain reforestation program on up to 3,600 acres of privately owned land in portions of Arkansas, Louisiana, and Mississippi within the Lower Mississippi River Alluvial Valley.

The proposed CREP activities would consist of planting site-appropriate hardwood trees on low-productivity agricultural land subject to frequent flooding. Trees would be selected for planting based on soil type and appropriate range. Existing FSA practices will be used as guidance; proposed activities would be similar to USDA FSA Conservation Practice (CPs) 22, Riparian Buffers; CP 23, Wetland Restoration on Floodplains; and CP 31, Bottomland Timber Establishment on Wetlands.

Lands enrolled in the proposed program would vary in size from a minimum of 10 acres to a maximum of 500 acres. No reforestation activities would occur on publicly owned lands under the Proposed Action.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@32.7926524,-91.14667270078414,14z

Counties: Arkansas, Louisiana, Mississippi, Missouri, and Tennessee

ENDANGERED SPECIES ACT SPECIES

There is a total of 37 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 Fisheries[1], 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 *Myotis grisescens*	Endangered
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6329 General project design guidelines: https://ipac.ecosphere.fws.gov/project/YD7ZUUPJGZHIVOE6L2U3AXQPLE/documents/generated/7127.pdf	
Indiana Bat *Myotis sodalis*	Endangered
There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949 General project design guidelines: https://ipac.ecosphere.fws.gov/project/YD7ZUUPJGZHIVOE6L2U3AXQPLE/documents/generated/7127,7280.pdf	
Northern Long-eared Bat *Myotis septentrionalis*	Endangered
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045 General project design guidelines: https://ipac.ecosphere.fws.gov/project/YD7ZUUPJGZHIVOE6L2U3AXQPLE/documents/generated/7127,7280.pdf	
Tricolored Bat *Perimyotis subflavus*	Proposed Endangered
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515 General project design guidelines: https://ipac.ecosphere.fws.gov/project/YD7ZUUPJGZHIVOE6L2U3AXQPLE/documents/generated/7127.pdf	
West Indian Manatee *Trichechus manatus*	Threatened
There is **final** critical habitat for this species. Your location does not overlap the critical habitat. ***This species is also protected by the Marine Mammal Protection Act, and may have additional consultation requirements.*** Species profile: https://ecos.fws.gov/ecp/species/4469 General project design guidelines: https://ipac.ecosphere.fws.gov/project/YD7ZUUPJGZHIVOE6L2U3AXQPLE/documents/generated/7127.pdf	

BIRDS

NAME	STATUS
Eastern Black Rail *Laterallus jamaicensis ssp. jamaicensis*	Threatened
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10477 General project design guidelines: https://ipac.ecosphere.fws.gov/project/YD7ZUUPJGZHIVOE6L2U3AXQPLE/documents/generated/7127.pdf	
Ivory-billed Woodpecker *Campephilus principalis*	Endangered

NAME	STATUS
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8230 General project design guidelines: https://ipac.ecosphere.fws.gov/project/YD7ZUUPJGZHIVOE6L2U3AXQPLE/documents/generated/7127.pdf	
Piping Plover *Charadrius melodus* 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 overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6039 General project design guidelines: https://ipac.ecosphere.fws.gov/project/YD7ZUUPJGZHIVOE6L2U3AXQPLE/documents/generated/7127.pdf	Threatened
Red-cockaded Woodpecker *Picoides borealis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7614 General project design guidelines: https://ipac.ecosphere.fws.gov/project/YD7ZUUPJGZHIVOE6L2U3AXQPLE/documents/generated/7127.pdf	Endangered
Rufa Red Knot *Calidris canutus rufa* There is **proposed** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1864 General project design guidelines: https://ipac.ecosphere.fws.gov/project/YD7ZUUPJGZHIVOE6L2U3AXQPLE/documents/generated/7127.pdf	Threatened
Whooping Crane *Grus americana* Population: U.S.A (Southwestern Louisiana) No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/758	Experimental Population, Non-Essential

REPTILES

NAME	STATUS
Alligator Snapping Turtle *Macrochelys temminckii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4658 General project design guidelines: https://ipac.ecosphere.fws.gov/project/YD7ZUUPJGZHIVOE6L2U3AXQPLE/documents/generated/7127.pdf	Proposed Threatened
Gopher Tortoise *Gopherus polyphemus* Population: Western DPS No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6994 General project design guidelines:	Threatened

NAME STATUS

https://ipac.ecosphere.fws.gov/project/YD7ZUUPJGZHIVOE6L2U3AXQPLE/documents/generated/7127.pdf

Hawksbill Sea Turtle *Eretmochelys imbricata* Endangered

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/3656
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/YD7ZUUPJGZHIVOE6L2U3AXQPLE/documents/generated/7127.pdf

Kemp's Ridley Sea Turtle *Lepidochelys kempii* Endangered

There is **proposed** critical habitat for this species.
Species profile: https://ecos.fws.gov/ecp/species/5523
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/YD7ZUUPJGZHIVOE6L2U3AXQPLE/documents/generated/7127.pdf

Leatherback Sea Turtle *Dermochelys coriacea* Endangered

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/1493
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/YD7ZUUPJGZHIVOE6L2U3AXQPLE/documents/generated/7127.pdf

Loggerhead Sea Turtle *Caretta caretta* Threatened

Population: Northwest Atlantic Ocean DPS
There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/1110

Ringed Map Turtle *Graptemys oculifera* Threatened

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/2664
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/YD7ZUUPJGZHIVOE6L2U3AXQPLE/documents/generated/7127.pdf

AMPHIBIANS

NAME STATUS

Ozark Hellbender *Cryptobranchus alleganiensis bishopi* Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/647

FISHES

NAME STATUS

Bayou Darter *Etheostoma rubrum* Threatened

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/5864
General project design guidelines:

NAME	STATUS
https://ipac.ecosphere.fws.gov/project/YD7ZUUPJGZHIVOE6L2U3AXQPLE/documents/generated/7127.pdf	
Gulf Sturgeon *Acipenser oxyrinchus (=oxyrhynchus) desotoi* There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/651 General project design guidelines: https://ipac.ecosphere.fws.gov/project/YD7ZUUPJGZHIVOE6L2U3AXQPLE/documents/generated/7127.pdf	Threatened
Pallid Sturgeon *Scaphirhynchus albus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7162 General project design guidelines: https://ipac.ecosphere.fws.gov/project/YD7ZUUPJGZHIVOE6L2U3AXQPLE/documents/generated/7127.pdf	Endangered

CLAMS

NAME	STATUS
Curtis Pearlymussel *Epioblasma florentina curtisii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5628	Endangered
Fat Pocketbook *Potamilus capax* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2780 General project design guidelines: https://ipac.ecosphere.fws.gov/project/YD7ZUUPJGZHIVOE6L2U3AXQPLE/documents/generated/7127.pdf	Endangered
Louisiana Pearlshell *Margaritifera hembeli* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8468	Threatened
Pink Mucket (pearlymussel) *Lampsilis abrupta* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7829 General project design guidelines: https://ipac.ecosphere.fws.gov/project/YD7ZUUPJGZHIVOE6L2U3AXQPLE/documents/generated/7127.pdf	Endangered
Rabbitsfoot *Quadrula cylindrica cylindrica* There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5165 General project design guidelines: https://ipac.ecosphere.fws.gov/project/YD7ZUUPJGZHIVOE6L2U3AXQPLE/documents/generated/7127.pdf	Threatened
Salamander Mussel *Simpsonaias ambigua*	Proposed Endangered

NAME STATUS

There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/6208

Scaleshell Mussel *Leptodea leptodon* Endangered
No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/5881

Sheepnose Mussel *Plethobasus cyphyus* Endangered
No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/6903
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/YD7ZUUPJGZHIVOE6L2U3AXQPLE/documents/generated/7127.pdf

Snuffbox Mussel *Epioblasma triquetra* Endangered
No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/4135
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/YD7ZUUPJGZHIVOE6L2U3AXQPLE/documents/generated/7127.pdf

Western Fanshell *Cyprogenia aberti* Threatened
There is **final** critical habitat for this species. Your location overlaps the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/6895

INSECTS

NAME STATUS

Hine's Emerald Dragonfly *Somatochlora hineana* Endangered
There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/7877

Monarch Butterfly *Danaus plexippus* Candidate
No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9743
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/YD7ZUUPJGZHIVOE6L2U3AXQPLE/documents/generated/7127.pdf

FLOWERING PLANTS

NAME STATUS

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

Pondberry *Lindera melissifolia* Endangered
No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/1279

NAME	STATUS
General project design guidelines: https://ipac.ecosphere.fws.gov/project/YD7ZUUPJGZHIVOE6L2U3AXQPLE/documents/generated/7127.pdf	
Whorled Sunflower *Helianthus verticillatus*	Endangered
Population:	
There is **final** critical habitat for this species. Your location does not overlap the critical habitat.	
Species profile: https://ecos.fws.gov/ecp/species/3375	
General project design guidelines: https://ipac.ecosphere.fws.gov/project/YD7ZUUPJGZHIVOE6L2U3AXQPLE/documents/generated/7127.pdf	

CRITICAL HABITATS

There are 5 critical habitats wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Gulf Sturgeon *Acipenser oxyrinchus (=oxyrhynchus) desotoi* https://ecos.fws.gov/ecp/species/651#crithab	Final
Piping Plover *Charadrius melodus* https://ecos.fws.gov/ecp/species/6039#crithab	Final
Rabbitsfoot *Quadrula cylindrica cylindrica* https://ecos.fws.gov/ecp/species/5165#crithab	Final
Rufa Red Knot *Calidris canutus rufa* https://ecos.fws.gov/ecp/species/1864#crithab	Proposed
Western Fanshell *Cyprogenia aberti* https://ecos.fws.gov/ecp/species/6895#crithab	Final

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

The following FWS National Wildlife Refuge Lands and Fish Hatcheries lie fully or partially within your project area:

FACILITY NAME	ACRES
ATCHAFALAYA NATIONAL WILDLIFE REFUGE https://www.fws.gov/our-facilities?$keywords="%5C%22ATCHAFALAYA+NATIONAL+WILDLIFE+REFUGE%5C%22"	15,810.405

FACILITY NAME	ACRES
BALD KNOB NATIONAL WILDLIFE REFUGE https://www.fws.gov/our-facilities?$keywords="%5C%22BALD+KNOB+NATIONAL+WILDLIFE+REFUGE%5C%22"	15,439.345
BAYOU COCODRIE NATIONAL WILDLIFE REFUGE https://www.fws.gov/our-facilities?$keywords="%5C%22BAYOU+COCODRIE+NATIONAL+WILDLIFE+REFUGE%5C%22"	15,188.814
BAYOU SAUVAGE URBAN NATIONAL WILDLIFE REFUGE https://www.fws.gov/our-facilities?$keywords="%5C%22BAYOU+SAUVAGE+URBAN+NATIONAL+WILDLIFE+REFUGE%5C%22"	28,169.328
BAYOU TECHE NATIONAL WILDLIFE REFUGE https://www.fws.gov/our-facilities?$keywords="%5C%22BAYOU+TECHE+NATIONAL+WILDLIFE+REFUGE%5C%22"	11,805.557
BLACK BAYOU LAKE NATIONAL WILDLIFE REFUGE https://www.fws.gov/our-facilities?$keywords="%5C%22BLACK+BAYOU+LAKE+NATIONAL+WILDLIFE+REFUGE%5C%22"	5,268.335
CACHE RIVER NATIONAL WILDLIFE REFUGE https://www.fws.gov/our-facilities?$keywords="%5C%22CACHE+RIVER+NATIONAL+WILDLIFE+REFUGE%5C%22"	75,017.904
CAT ISLAND NATIONAL WILDLIFE REFUGE https://www.fws.gov/our-facilities?$keywords="%5C%22CAT+ISLAND+NATIONAL+WILDLIFE+REFUGE%5C%22"	11,373.143
CATAHOULA NATIONAL WILDLIFE REFUGE https://www.fws.gov/our-facilities?$keywords="%5C%22CATAHOULA+NATIONAL+WILDLIFE+REFUGE%5C%22"	25,261.649
COLDWATER RIVER NATIONAL WILDLIFE REFUGE https://www.fws.gov/our-facilities?$keywords="%5C%22COLDWATER+RIVER+NATIONAL+WILDLIFE+REFUGE%5C%22"	4,967.813
D'ARBONNE NATIONAL WILDLIFE REFUGE https://www.fws.gov/our-facilities?$keywords="%5C%22D%27ARBONNE+NATIONAL+WILDLIFE+REFUGE%5C%22"	17,637.505
DALE BUMPERS WHITE RIVER NATIONAL WILDLIFE REFUGE https://www.fws.gov/our-facilities?$keywords="%5C%22DALE+BUMPERS+WHITE+RIVER+NATIONAL+WILDLIFE+REFUGE%5C%22"	157,670.155
DELTA NATIONAL WILDLIFE REFUGE https://www.fws.gov/our-facilities?$keywords="%5C%22DELTA+NATIONAL+WILDLIFE+REFUGE%5C%22"	50,481.261
FARM SERVICE AGENCY INTEREST OF AR https://www.fws.gov/our-facilities?$keywords="%5C%22FARM+SERVICE+AGENCY+INTEREST+OF+AR%5C%22"	6,248.247

FACILITY NAME	ACRES
FARM SERVICE AGENCY INTEREST OF AR https://www.fws.gov/our-facilities?$keywords="%5C%22FARM+SERVICE+AGENCY+INTEREST+OF+AR%5C%22"	11,256.775
FARM SERVICE AGENCY INTEREST OF LA https://www.fws.gov/our-facilities?$keywords="%5C%22FARM+SERVICE+AGENCY+INTEREST+OF+LA%5C%22"	1,025.076
FARM SERVICE AGENCY INTEREST OF LA https://www.fws.gov/our-facilities?$keywords="%5C%22FARM+SERVICE+AGENCY+INTEREST+OF+LA%5C%22"	1,277.881
FARM SERVICE AGENCY INTEREST OF MS https://www.fws.gov/our-facilities?$keywords="%5C%22FARM+SERVICE+AGENCY+INTEREST+OF+MS%5C%22"	13,363.97
FARM SERVICE AGENCY INTEREST OF MS https://www.fws.gov/our-facilities?$keywords="%5C%22FARM+SERVICE+AGENCY+INTEREST+OF+MS%5C%22"	9,409.661
FARM SERVICE AGENCY INTEREST OF MS https://www.fws.gov/our-facilities?$keywords="%5C%22FARM+SERVICE+AGENCY+INTEREST+OF+MS%5C%22"	8,696.953
FARM SERVICE AGENCY INTEREST OF MS https://www.fws.gov/our-facilities?$keywords="%5C%22FARM+SERVICE+AGENCY+INTEREST+OF+MS%5C%22"	13,996.321
FELSENTHAL NATIONAL WILDLIFE REFUGE https://www.fws.gov/our-facilities?$keywords="%5C%22FELSENTHAL+NATIONAL+WILDLIFE+REFUGE%5C%22"	77,590.614
GRAND COTE NATIONAL WILDLIFE REFUGE https://www.fws.gov/our-facilities?$keywords="%5C%22GRAND+COTE+NATIONAL+WILDLIFE+REFUGE%5C%22"	5,936.213
HANDY BRAKE NATIONAL WILDLIFE REFUGE https://www.fws.gov/our-facilities?$keywords="%5C%22HANDY+BRAKE+NATIONAL+WILDLIFE+REFUGE%5C%22"	597.837
HILLSIDE NATIONAL WILDLIFE REFUGE https://www.fws.gov/our-facilities?$keywords="%5C%22HILLSIDE+NATIONAL+WILDLIFE+REFUGE%5C%22"	15,506.372
HOLT COLLIER NATIONAL WILDLIFE REFUGE https://www.fws.gov/our-facilities?$keywords="%5C%22HOLT+COLLIER+NATIONAL+WILDLIFE+REFUGE%5C%22"	2,998.625
LAKE OPHELIA NATIONAL WILDLIFE REFUGE https://www.fws.gov/our-facilities?$keywords="%5C%22LAKE+OPHELIA+NATIONAL+WILDLIFE+REFUGE%5C%22"	18,662.608

FACILITY NAME	ACRES
MANDALAY NATIONAL WILDLIFE REFUGE https://www.fws.gov/our-facilities?$keywords="%5C%22MANDALAY+NATIONAL+WILDLIFE+REFUGE%5C%22"	4,633.302
MATHEWS BRAKE NATIONAL WILDLIFE REFUGE https://www.fws.gov/our-facilities?$keywords="%5C%22MATHEWS+BRAKE+NATIONAL+WILDLIFE+REFUGE%5C%22"	2,361.957
OVERFLOW NATIONAL WILDLIFE REFUGE https://www.fws.gov/our-facilities?$keywords="%5C%22OVERFLOW+NATIONAL+WILDLIFE+REFUGE%5C%22"	13,645.885
PANTHER SWAMP NATIONAL WILDLIFE REFUGE https://www.fws.gov/our-facilities?$keywords="%5C%22PANTHER+SWAMP+NATIONAL+WILDLIFE+REFUGE%5C%22"	40,839.74
ST. CATHERINE CREEK NATIONAL WILDLIFE REFUGE https://www.fws.gov/our-facilities?$keywords="%5C%22ST.+CATHERINE+CREEK+NATIONAL+WILDLIFE+REFUGE%5C%22"	24,796.045
TENSAS RIVER NATIONAL WILDLIFE REFUGE https://www.fws.gov/our-facilities?$keywords="%5C%22TENSAS+RIVER+NATIONAL+WILDLIFE+REFUGE%5C%22"	79,869.192
THEODORE ROOSEVELT NATIONAL WILDLIFE REFUGE https://www.fws.gov/our-facilities?$keywords="%5C%22THEODORE+ROOSEVELT+NATIONAL+WILDLIFE+REFUGE%5C%22"	6,289.294
UPPER OUACHITA NATIONAL WILDLIFE REFUGE https://www.fws.gov/our-facilities?$keywords="%5C%22UPPER+OUACHITA+NATIONAL+WILDLIFE+REFUGE%5C%22"	54,553.504

BALD & GOLDEN EAGLES

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act[1] and the Migratory Bird Treaty Act[2].

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats[3], should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

1. The Bald and Golden Eagle Protection Act of 1940.
2. The Migratory Birds Treaty Act of 1918.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

There are likely bald eagles present in your project area. For additional information on bald eagles, refer to Bald Eagle Nesting and Sensitivity to Human Activity

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31
Golden Eagle *Aquila chrysaetos* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds elsewhere

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

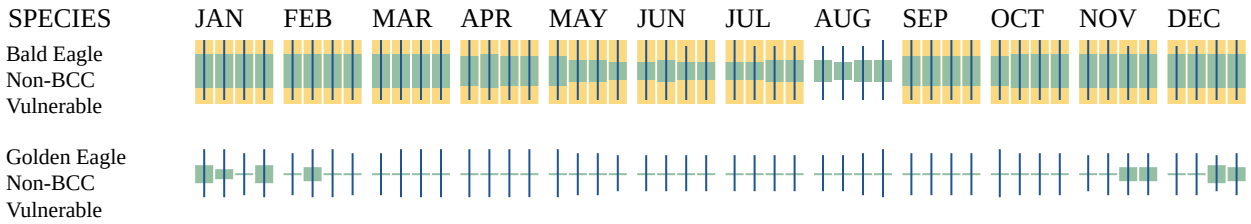
Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

■ probability of presence ■ breeding season | survey effort – no data



Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
American Golden-plover *Pluvialis dominica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10561	Breeds elsewhere
American Kestrel *Falco sparverius paulus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9587	Breeds Apr 1 to Aug 31
American Oystercatcher *Haematopus palliatus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8935	Breeds Apr 15 to Aug 31
Bachman's Sparrow *Peucaea aestivalis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/6177	Breeds May 1 to Sep 30
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31
Band-rumped Storm-petrel *Hydrobates castro* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/11999	Breeds elsewhere
Black Scoter *Melanitta nigra* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/10413	Breeds elsewhere
Black Skimmer *Rynchops niger* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/5234	Breeds May 20 to Sep 15
Black-billed Cuckoo *Coccyzus erythropthalmus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10

NAME	BREEDING SEASON
Black-legged Kittiwake *Rissa tridactyla* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/10459	Breeds elsewhere
Bobolink *Dolichonyx oryzivorus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9454	Breeds May 20 to Jul 31
Brown Pelican *Pelecanus occidentalis* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/6034	Breeds Jan 15 to Sep 30
Brown-headed Nuthatch *Sitta pusilla* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9427	Breeds Mar 1 to Jul 15
Cerulean Warbler *Setophaga cerulea* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/2974	Breeds Apr 23 to Jul 20
Chimney Swift *Chaetura pelagica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9406	Breeds Mar 15 to Aug 25
Chuck-will's-widow *Antrostomus carolinensis* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9604	Breeds May 10 to Jul 10
Coastal (waynes) Black-throated Green Warbler *Setophaga virens waynei* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/11879	Breeds May 1 to Aug 15
Common Loon *gavia immer* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/4464	Breeds Apr 15 to Oct 31

NAME	BREEDING SEASON
Dickcissel *Spiza americana* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9453	Breeds May 5 to Aug 31
Double-crested Cormorant *phalacrocorax auritus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/3478	Breeds Apr 20 to Aug 31
Eastern Whip-poor-will *Antrostomus vociferus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10678	Breeds May 1 to Aug 20
Field Sparrow *Spizella pusilla* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9446	Breeds Mar 1 to Aug 15
Forster's Tern *Sterna forsteri* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/11953	Breeds Mar 1 to Aug 15
Golden Eagle *Aquila chrysaetos* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds elsewhere
Grasshopper Sparrow *Ammodramus savannarum perpallidus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8329	Breeds Jun 1 to Aug 20
Great Shearwater *Puffinus gravis* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/9634	Breeds elsewhere
Gull-billed Tern *Gelochelidon nilotica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9501	Breeds May 1 to Jul 31

NAME	BREEDING SEASON
Henslow's Sparrow *Centronyx henslowii* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3941	Breeds May 1 to Aug 31
Hudsonian Godwit *Limosa haemastica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9482	Breeds elsewhere
Kentucky Warbler *Geothlypis formosa* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9443	Breeds Apr 20 to Aug 20
King Rail *Rallus elegans* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8936	Breeds May 1 to Sep 5
Le Conte's Sparrow *Ammospiza leconteii* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9469	Breeds elsewhere
Least Tern *Sternula antillarum antillarum* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/11919	Breeds Apr 25 to Sep 5
Lesser Yellowlegs *Tringa flavipes* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Little Blue Heron *Egretta caerulea* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9477	Breeds Mar 10 to Oct 15
Long-billed Curlew *Numenius americanus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/5511	Breeds elsewhere
Long-tailed Duck *Clangula hyemalis* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/7238	Breeds elsewhere

NAME	BREEDING SEASON
Magnificent Frigatebird *Fregata magnificens* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9588	Breeds elsewhere
Marbled Godwit *Limosa fedoa* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9481	Breeds elsewhere
Painted Bunting *Passerina ciris* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9511	Breeds Apr 25 to Aug 15
Pectoral Sandpiper *Calidris melanotos* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9561	Breeds elsewhere
Pomarine Jaeger *Stercorarius pomarinus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/10458	Breeds elsewhere
Prairie Loggerhead Shrike *Lanius ludovicianus excubitorides* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8833	Breeds Feb 1 to Jul 31
Prairie Warbler *Setophaga discolor* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9513	Breeds May 1 to Jul 31
Prothonotary Warbler *Protonotaria citrea* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9439	Breeds Apr 1 to Jul 31
Red Knot *Calidris canutus roselaari* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8880	Breeds elsewhere
Red Phalarope *Phalaropus fulicarius* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/10469	Breeds elsewhere

NAME	BREEDING SEASON
Red-breasted Merganser *Mergus serrator* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/10693	Breeds elsewhere
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9398	Breeds May 10 to Sep 10
Red-necked Phalarope *Phalaropus lobatus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/10467	Breeds elsewhere
Red-throated Loon *Gavia stellata* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/9589	Breeds elsewhere
Reddish Egret *Egretta rufescens* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/7617	Breeds Mar 1 to Sep 15
Ring-billed Gull *Larus delawarensis* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/10468	Breeds elsewhere
Royal Tern *Thalasseus maximus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/10471	Breeds Apr 15 to Aug 31
Ruddy Turnstone *Arenaria interpres morinella* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/10633	Breeds elsewhere
Rusty Blackbird *Euphagus carolinus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9478	Breeds elsewhere

NAME	BREEDING SEASON
Sandwich Tern *Thalasseus sandvicensis* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9731	Breeds Apr 25 to Aug 31
Semipalmated Sandpiper *Calidris pusilla* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9603	Breeds elsewhere
Short-billed Dowitcher *Limnodromus griseus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere
Sooty Tern *Onychoprion fuscatus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/10695	Breeds Mar 10 to Jul 31
Sprague's Pipit *Anthus spragueii* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8964	Breeds elsewhere
Surf Scoter *Melanitta perspicillata* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/10463	Breeds elsewhere
Swallow-tailed Kite *Elanoides forficatus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8938	Breeds Mar 10 to Jun 30
Whimbrel *Numenius phaeopus hudsonicus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/11991	Breeds elsewhere
White-winged Scoter *Melanitta fusca* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/10462	Breeds elsewhere

NAME	BREEDING SEASON
Willet *Tringa semipalmata* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10669	Breeds Apr 20 to Aug 5
Wilson's Plover *Charadrius wilsonia* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9722	Breeds Apr 1 to Aug 20
Wilson's Storm-petrel *Oceanites oceanicus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/10416	Breeds elsewhere
Wood Thrush *Hylocichla mustelina* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9431	Breeds May 10 to Aug 31
Yellow Rail *Coturnicops noveboracensis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9476	Breeds elsewhere

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (▪)

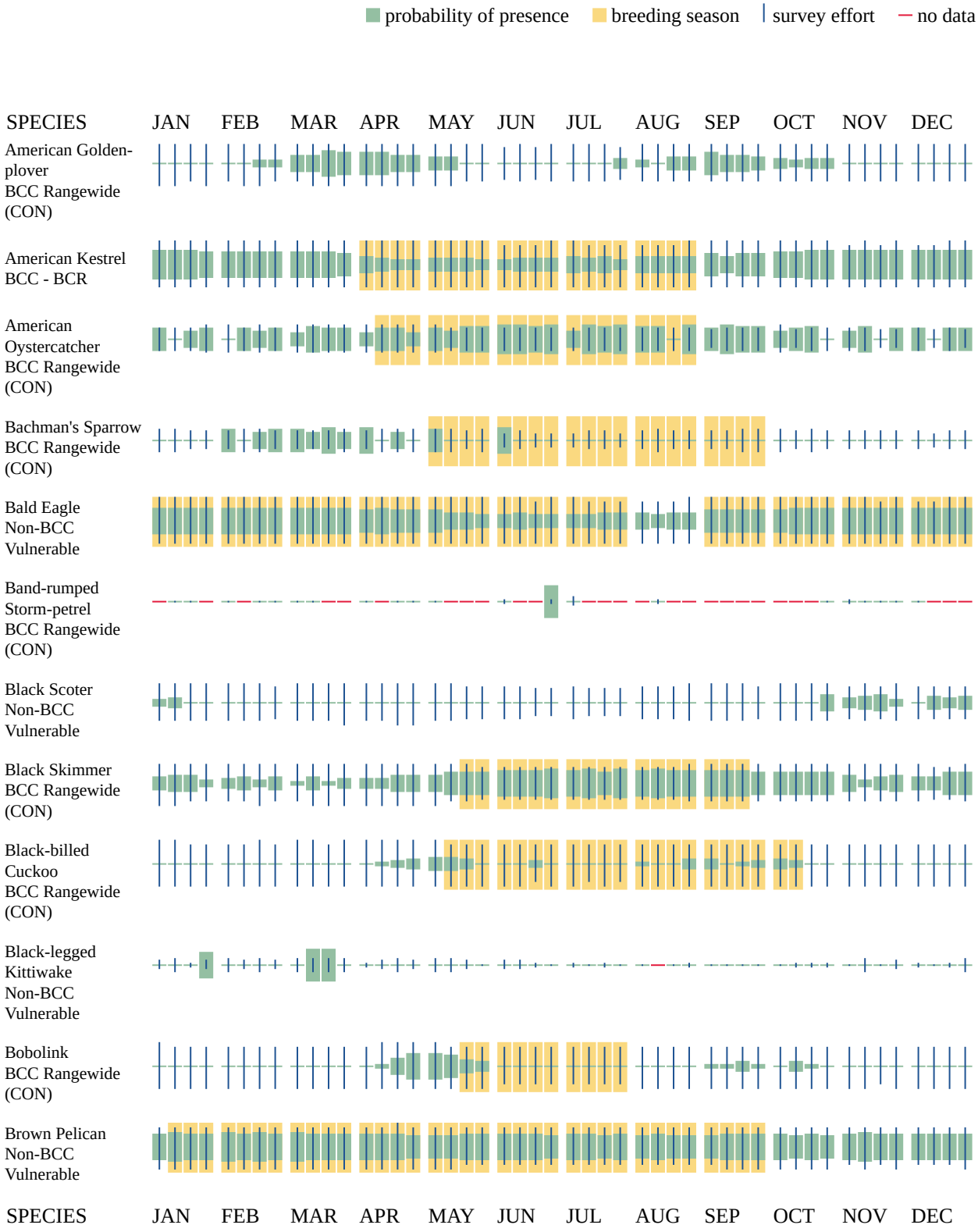
Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

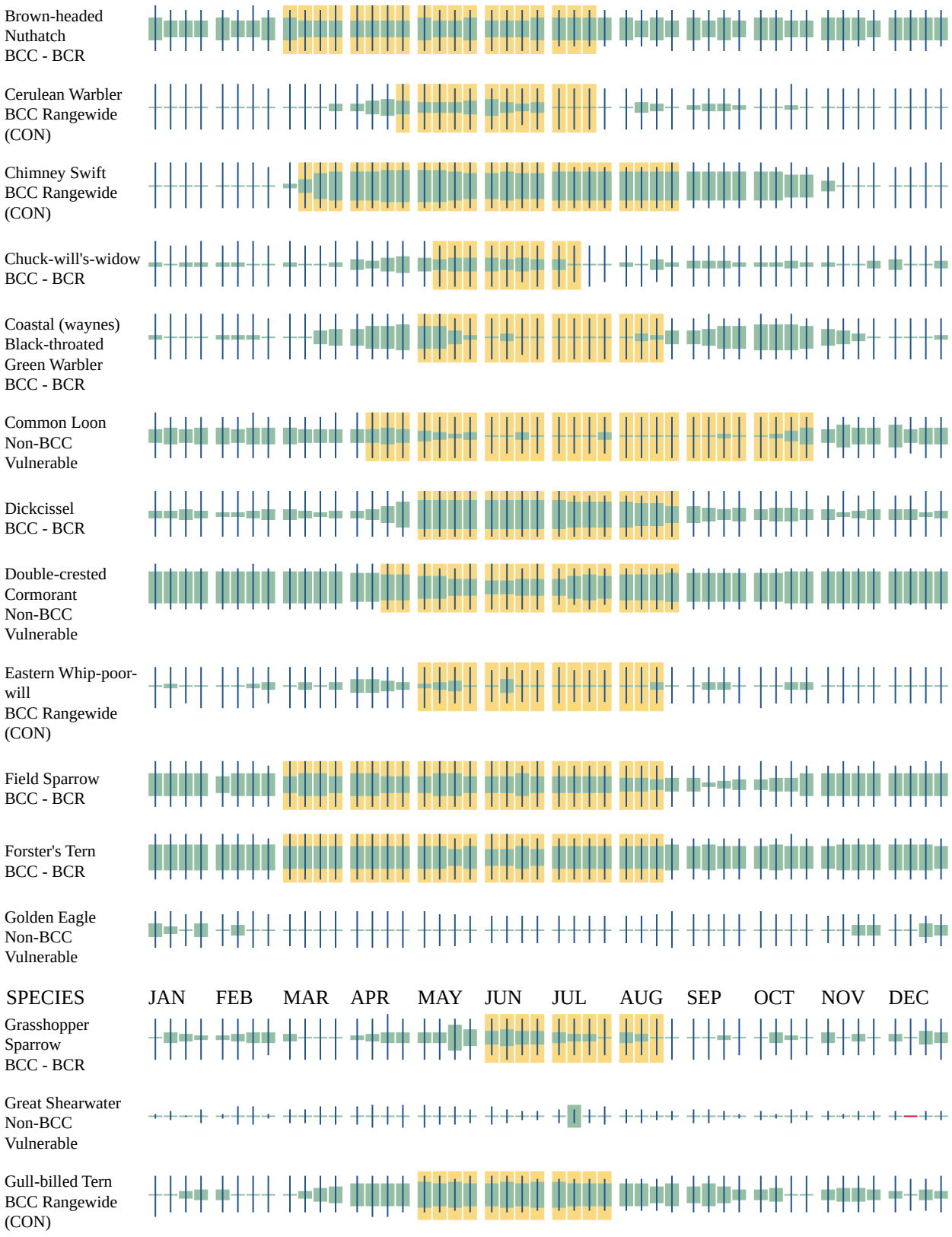
Breeding Season (▪)
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

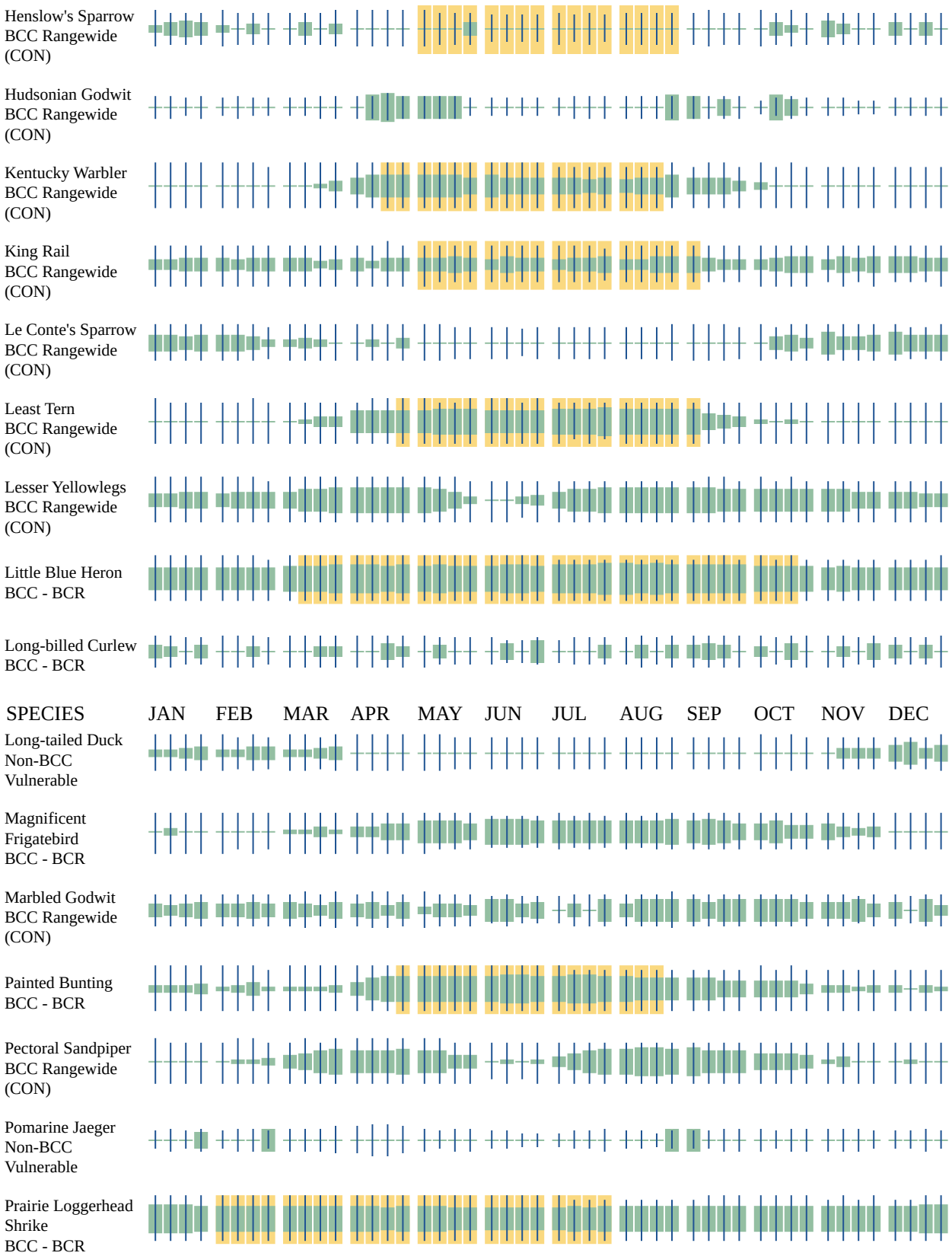
Survey Effort (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (–)

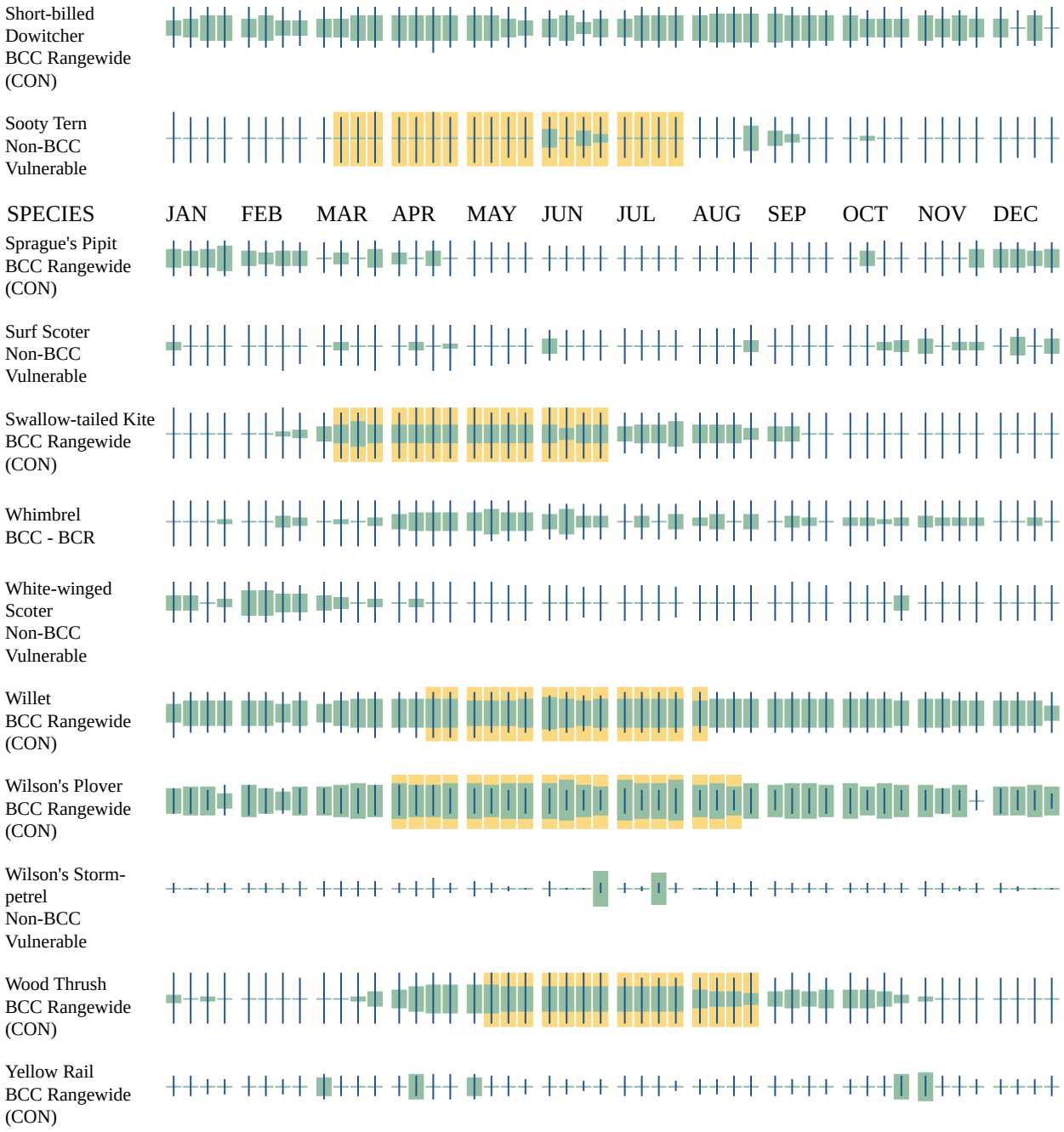
A week is marked as having no data if there were no survey events for that week.




Brown-headed Nuthatch BCC - BCR
Cerulean Warbler BCC Rangewide (CON)
Chimney Swift BCC Rangewide (CON)
Chuck-will's-widow BCC - BCR
Coastal (waynes) Black-throated Green Warbler BCC - BCR
Common Loon Non-BCC Vulnerable
Dickcissel BCC - BCR
Double-crested Cormorant Non-BCC Vulnerable
Eastern Whip-poor-will BCC Rangewide (CON)
Field Sparrow BCC - BCR
Forster's Tern BCC - BCR
Golden Eagle Non-BCC Vulnerable
SPECIES
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
Grasshopper Sparrow BCC - BCR
Great Shearwater Non-BCC Vulnerable
Gull-billed Tern BCC Rangewide (CON)


Henslow's Sparrow
BCC Rangewide
(CON)
Hudsonian Godwit
BCC Rangewide
(CON)
Kentucky Warbler
BCC Rangewide
(CON)
King Rail
BCC Rangewide
(CON)
Le Conte's Sparrow
BCC Rangewide
(CON)
Least Tern
BCC Rangewide
(CON)
Lesser Yellowlegs
BCC Rangewide
(CON)
Little Blue Heron
BCC - BCR
Long-billed Curlew
BCC - BCR
SPECIES
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
Long-tailed Duck
Non-BCC
Vulnerable
Magnificent
Frigatebird
BCC - BCR
Marbled Godwit
BCC Rangewide
(CON)
Painted Bunting
BCC - BCR
Pectoral Sandpiper
BCC Rangewide
(CON)
Pomarine Jaeger
Non-BCC
Vulnerable
Prairie Loggerhead
Shrike
BCC - BCR


Prairie Warbler BCC Rangewide (CON)
Prothonotary Warbler BCC Rangewide (CON)
Red Knot BCC Rangewide (CON)
Red Phalarope Non-BCC Vulnerable
Red-breasted Merganser Non-BCC Vulnerable
SPECIES
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
Red-headed Woodpecker BCC Rangewide (CON)
Red-necked Phalarope Non-BCC Vulnerable
Red-throated Loon Non-BCC Vulnerable
Reddish Egret BCC Rangewide (CON)
Ring-billed Gull Non-BCC Vulnerable
Royal Tern Non-BCC Vulnerable
Ruddy Turnstone BCC - BCR
Rusty Blackbird BCC - BCR
Sandwich Tern BCC - BCR
Semipalmated Sandpiper BCC - BCR



Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

COASTAL BARRIERS

Projects within the John H. Chafee Coastal Barrier Resources System (CBRS) may be subject to the restrictions on Federal expenditures and financial assistance and the consultation requirements of the Coastal Barrier Resources Act (CBRA) (16 U.S.C. 3501 et seq.). For more information, please contact the local Ecological Services Field Office or visit the CBRA Consultations website. The CBRA website provides tools such as a flow chart to help determine whether consultation is required and a template to facilitate the consultation process.

SYSTEM UNIT (SU)

Most new Federal expenditures and financial assistance, including Federal flood insurance, are prohibited within System Units. ***Federally-funded projects within System Units require consultation with the Service.*** *Consultation is not required for projects using private, state, or local funds.*

UNIT	NAME	TYPE	SYSTEM UNIT ESTABLISHMENT DATE	FLOOD INSURANCE PROHIBITION DATE
S01	Bastian Bay Complex	SU	10/18/1982	10/1/1983
S01	Bastian Bay Complex	SU	11/16/1990	11/16/1990
S01A	Bay Joe Wise Complex	SU	10/18/1982	10/1/1983
S01A	Bay Joe Wise Complex	SU	4/22/1983	10/1/1983
S01A	Bay Joe Wise Complex	SU	11/16/1990	11/16/1990
S03	Caminada	SU	10/18/1982	10/1/1983
S03	Caminada	SU	11/16/1990	11/16/1990
S04	Timbalier Bay	SU	10/18/1982	10/1/1983
S04	Timbalier Bay	SU	11/16/1990	11/16/1990
S06	Isles Dernieres	SU	11/16/1990	11/16/1990
S07	Point au Fer	SU	10/18/1982	10/1/1983
S07	Point au Fer	SU	11/16/1990	11/16/1990

MARINE MAMMALS

Marine mammals are protected under the Marine Mammal Protection Act. Some are also protected under the Endangered Species Act[1] and the Convention on International Trade in Endangered Species of Wild Fauna and Flora[2].

The responsibilities for the protection, conservation, and management of marine mammals are shared by the U.S. Fish and Wildlife Service [responsible for otters, walruses, polar bears, manatees, and dugongs] and NOAA Fisheries[3] [responsible for seals, sea lions, whales, dolphins, and porpoises]. Marine mammals under the responsibility of NOAA Fisheries are **not** shown on this list; for additional information on those species please visit the Marine Mammals page of the NOAA Fisheries website.

The Marine Mammal Protection Act prohibits the take of marine mammals and further coordination may be necessary for project evaluation. Please contact the U.S. Fish and Wildlife Service Field Office shown.

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1. The Endangered Species Act (ESA) of 1973.
2. The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is a treaty to ensure that international trade in plants and animals does not threaten their survival in the wild.
3. 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.

NAME

West Indian Manatee *Trichechus manatus*
Species profile: https://ecos.fws.gov/ecp/species/4469

WETLANDS

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

Due to your project's size, the list below may be incomplete, or the acreages reported may be inaccurate. For a full list, please contact the local U.S. Fish and Wildlife office or visit https://www.fws.gov/wetlands/data/mapper.HTML

LAKE

- L2AB3Hx
- L2UBGh
- L2AB3Hh
- L1UBH
- L1ABHx
- L1UBK
- L2AB3H
- L2UBGr
- L2AB3F
- L1UBGx
- L
- L2AB4H
- L2ABFx
- L1ABH
- L1UBKx
- L2AB3Gh
- L2AB3Fx
- L2UBFx
- L2UBFh
- L2EM2Fx
- L1UBHx
- L2AB4Hh
- L1UBHh
- L2AB3Fh
- L2UBF
- L2UBG
- L2UBHh
- L2USC
- L2UBH
- L2UBHx
- L2USAh
- L2USCx
- L2USAx
- L2USCh
- L2UBK

- Lh
- L2UBKx
- L2UBGx

FRESHWATER FORESTED/SHRUB WETLAND

- PFO2/1F
- PFO1A
- PSS1F
- PSS1C
- PFO1C
- PFO1F

RIVERINE

- R5UBFx
- R5UBH
- R4SBC
- R2USA

FRESHWATER POND

- PUBH
- PABF
- PAB/FO1F
- PABHh
- PAB3Hx
- PABHx
- PAB4Hx
- PAB3H
- PAB/SS1F
- PAB/EM1F
- PAB4Fh
- PAB4F
- PAB3F
- PAB3G
- PABH
- PABFx
- PAB4Hh
- PAB3Hh
- PAB4H
- PAB/FO2F

- PAB3Fh
- PABFh

FRESHWATER EMERGENT WETLAND

- PEM1/SS1Ad
- PEM1/SS1Cd
- PEM1/ABFx
- PEM1/USC
- PEM1/SS1Fx
- PEM1/AB4F
- PEM1/FO1C
- PEM1/SS1C
- PEM1/FO1Ad
- PEM1/SS1A
- PEM1/SS1Fh
- PEM1F
- PEM1/ABFh
- PEM1/ABF
- PEM1/SS1F
- PEM1A
- PEM1/SS1Ch
- PEM1/FO1F
- PEM1/FO1Cd
- PEM1/FO2F
- PEM1/FO1Fh
- PEM1/SS4C

IPAC USER CONTACT INFORMATION

Agency:	Private Entity
Name:	Kenneth Erwin
Address:	1025 Vermont Ave. NW
Address Line 2:	Suite 500
City:	Washington
State:	DC
Zip:	20005
Email	kerwin@versar.com
Phone:	7036426915

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APPENDIX D

REASONABLY FORESEEABLE FUTURE ACTIONS

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Appendix D – Reasonably Foreseeable Future Actions

Table D-1 Reasonably Foreseeable Future Actions

Project and Proponent	Project Summary	Implementation Date	Relevance to Proposed Action
Arkansas			
Transportation Construction and Improvement Projects (ARDOT)	In counties within the project area, ARDOT has planned road repairs including resurfacing and patching of existing roadways, minor and major widening, bridge replacement, interchange improvements, and safety improvements.	Current - 2025	Actions could occur within the same timeframe. Construction and maintenance of roadways could impact biological, cultural, and water resources; soils; air quality; and socioeconomics.
Grand Prairie Irrigation Project (NRCS, USACE, White River Irrigation District, Arkansas Department of Agriculture)	The White River Irrigation District's multi-phase irrigation project aims to bring agricultural water to the farmers in Arkansas's Grand Prairie region and preserve the area's groundwater resources.	September 2024 - 2026	Actions could occur within the same timeframe. Construction and operation could impact biological, cultural, and water resources; and socioeconomics.
Mississippi River Basin Healthy Watersheds Initiative (NRCS); Arkansas, Louisiana, Mississippi	NRCS is working with farmers and conservation partners to implement conservation practices to address water quality concerns and agricultural sources of nutrients and sediment that result in elevated nutrient levels in the Mississippi River flow downstream and are contributing to the Gulf of Mexico hypoxic (low oxygen) zone.	Ongoing	Actions could occur within the same timeframe. Implementation could impact biological and water resources.
Louisiana			
Transportation Construction and Improvement Projects (LADOTD)	In multiple parishes within the project area, LADOTD has planned road extensions, repairs including patching, milling, and asphalt overlay; widening and raising roadways, drainage work, road reconstruction, bridge replacement, and shoulder repair.	Current	Actions could occur within the same timeframe. Construction and maintenance of roadways could impact biological, cultural, and water resources; soils; air quality; and socioeconomics.

Table D-1 Reasonably Foreseeable Future Actions

Project and Proponent	Project Summary	Implementation Date	Relevance to Proposed Action
Ascension Clean Energy Project (Clean Hydrogen Works)	In Ascension Parish, partially within the project area, Clean Hydrogen Works have been approved for construction and operation of a new hydrogen-ammonia production plant along the west bank of the Mississippi River.	2024 - 2027	Actions could occur within the same timeframe. Construction and operation of this facility could impact biological and water resources; soils; air quality; and socioeconomics.
Natural gas liquefaction and export facility construction (Venture Global)	In Plaquemines Parish, partially within the project areas, Venture Global is beginning production and second-phase construction at a new LNG facility.	Current Production to begin in mid-2024	Actions could occur within the same timeframe. Operation of this facility could impact biological and water resources; soils; air quality; and socioeconomics.
Carbon-capture ammonia facility (CF Industries and Mitsui & Co., Ltd.)	In Ascension Parish, partially within the project area, CF Industries has received approval for construction and operation of a new blue ammonia production and export facility.	2024-Ongoing	Actions could occur within the same timeframe. Construction and operation of this facility could impact biological and water resources; soils; air quality; and socioeconomics.
Conservation Stewardship Program and other federal programs	The Conservation Stewardship Program and other federal conservation programs aim to enhance water quality, wildlife habitat, agricultural resilience, and other environmental parameters through registration and conversion of active farmland.	Ongoing	Continued or enhanced implementation of federal conservation programs is likely to have beneficial effects on socioeconomics/recreation; soils; biological, cultural, and water resources.
Mississippi			
Various infrastructure and private development projects	In counties within the project area, numerous infrastructure improvement and private development projects such as water management, flood control, and telecommunications are scheduled and ongoing.	Ongoing	Actions could occur within the same timeframe. Construction could impact biological, water, and cultural resources; soils; air quality; and socioeconomics.
Mississippi River and Tributaries Project (USACE, Mississippi River Commission)	Various improvements such as levee repairs and enlargements, flood control measures, and reforesting borrow areas.	Ongoing	Actions could occur within the same timeframe. Construction and repairs of dams and flood control measures could impact biological, water, and cultural resources; soils; air quality; and socioeconomics.

Table D-1 Reasonably Foreseeable Future Actions

Project and Proponent	Project Summary	Implementation Date	Relevance to Proposed Action
Transportation Construction and Improvement Projects (MDOT)	Various road improvement projects including sealing and overlays; bridge repairs and replacements; and installation of safety barriers and traffic signals.	2024-Ongoing	Actions could occur within the same timeframe. Construction and repairs of bridges, roadways, and safety features could impact biological, water, and cultural resources; soils; air quality; and socioeconomics.

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APPENDIX E

LIST OF PREPARERS AND CONTRIBUTORS

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Appendix E – List of Preparers and Contributors

Table E-1 List of Preparers and Contributors

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