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**PROGRAMMATIC ENVIRONMENTAL ASSESSMENT FOR
MISSISSIPPI DELTA CONSERVATION RESERVE ENHANCEMENT
PROGRAM**



Prepared for:
USDA Farm Service Agency
The Nature Conservancy, Mississippi Chapter

May 2013

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Cover Sheet

Proposed Action: The United States Department of Agriculture (USDA), Commodity Credit Corporation and the State of Mississippi have agreed to implement the Mississippi Delta Conservation Reserve Enhancement Program (CREP), a component of the Conservation Reserve Program. 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) 1410. The Farm Service Agency (FSA) proposes to implement the CREP Agreement with the State of Mississippi. CREP is a voluntary land conservation program for agricultural landowners.

Type of Document: Programmatic Environmental Assessment

Lead Agency: USDA, FSA

Sponsoring Agency: The Nature Conservancy, Mississippi Chapter

Cooperating Agency: None

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Comments: This Programmatic Environmental Assessment was prepared in accordance with USDA FSA National Environmental Policy Act (NEPA) implementation procedures found in 7 CFR 799, as well as the NEPA of 1969, Public Law 91-190, 42 United States Code 4321-4347, 1 January 1970, as amended. A public comment period for this project May 1 to May 31, 2013. Send Comments to:

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EXECUTIVE SUMMARY

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INTRODUCTION

The United States (U.S.) Department of Agriculture Farm Service Agency (FSA) proposes to implement a Conservation Reserve Enhancement Program (CREP) Agreement within the Lower Mississippi Alluvial Valley (Delta) in the State of Mississippi. This Programmatic Environmental Assessment (PEA) has been prepared to analyze the potential environmental consequences associated with implementation of the Proposed Action or No Action Alternative.

The proposed CREP Area is within the Lower Mississippi Alluvial Valley and includes 11 counties. There are approximately 2,495,817 eligible acres within the total CREP Area. Land to be enrolled must meet all applicable eligibility requirements as outlined within FSA Handbook: *Agricultural Resource Conservation Program for State and County Offices* (2-CRP, Revision 5) and must have at least 51 percent of the land area within the proposed CREP Area.

Prior to European settlement, the Mississippi Delta was dominated by bottomland hardwood forest (BHF) in the basins formed along the waterways and tributaries of the Mississippi River. These forested wetlands once encompassed over 21 million acres throughout the Mississippi Delta; however, agricultural conversion and flood control measures have drastically altered the hydrology and changed the landscape significantly. BHF now encompasses only 23 percent of its original extent in the Delta area, with only a scant 2 percent of the BHF in all of Mississippi remaining. Agriculture now comprises approximately 54 percent of the land area in the 11 counties addressed in the CREP Agreement. Top agricultural products in the region include soybeans, cotton, corn, wheat, and rice.

PROJECT PURPOSE AND NEED

The purpose of the Proposed Action is to implement the proposed Agreement for the State of Mississippi. The proposed Agreement is needed to aid in restoring BHF to the Mississippi Delta, providing critical habitat for the Louisiana black bear (*Ursus americanus luteolus*), as well as a number of other Federally listed species. Wetland restoration efforts will also provide increased habitat for waterfowl. Additionally, the CREP will improve water quality and maintain water quantity that would be beneficial to a number of aquatic species. The proposed CREP Agreement would also improve soil conditions by restoring native vegetation and reducing soil erosion.

PROPOSED ACTION AND NO ACTION ALTERNATIVE

Proposed Action

FSA and the State of Mississippi propose to implement the Mississippi Delta CREP Agreement. Specifically, the CREP Agreement seeks to retire up to 8,000 acres of cropland within portions of Washington, Sharkey, Issaquena, Bolivar, Humphreys, Holmes, Yazoo, Coahoma, Sunflower, Leflore, and Tallahatchie Counties and establish conservation practices (CPs) to improve water quality, reduce soil erosion, and enhance wildlife habitat. Eligible producers would receive financial and technical assistance in exchange for removing cropland from active agricultural production under a long term contract of 14 or 15 years.

1 Approved CPs for the Mississippi Delta CREP are CP 22, *Riparian Forest Buffer*, CP23, *Wetland*
2 *Restoration*, and CP31, *Bottomland Hardwood Timber Establishment on Wetlands*. Of the 8,000 acres,
3 the CPs would be split roughly in thirds, with CP22 having 2,660 acres enrolled, and CP23, and CP31 each
4 having 2,670 acres.

5 **No Action Alternative**

6 Under the No Action Alternative, the Agreement would not be implemented. The Conservation Reserve
7 Program and other conservation programs would continue to be available to producers; however, the
8 additional benefits of the proposed Agreement would not be realized.

9 **ENVIRONMENTAL CONSEQUENCES OF THE PROPOSED ACTION**

10 The PEA addresses the following resource areas: biological resources (wildlife, vegetation, and special
11 status species); water resources (ground water, surface water, water quality, and wetlands); earth
12 resources (geology, topography, and soils); cultural resources; recreation; socioeconomics; and
13 environmental justice. A summary of the potential environmental consequences to each of these
14 resources is provided below.

15 **Biological Resources**

16 Overall, implementation of the Proposed Action would have beneficial impacts to biological resources.
17 Restoring agricultural lands to more natural states under the three approved CPs would increase native
18 vegetation and restore and enhance wetland and riparian habitat, along with other habitat important to
19 local wildlife. Improving these habitats would increase wildlife diversity and assist in providing necessary
20 habitat for a number of threatened or endangered species. The reduction in chemical inputs and
21 nutrients to surface waters would improve water quality and have beneficial impacts to fisheries in the
22 immediate and downstream areas. Site-specific evaluation and the required conservation planning
23 process prior to enrolling land in CREP would identify special status species or critical habitat.
24 Consultation with U.S. Fish and Wildlife Service or Mississippi Department of Wildlife, Fisheries, and
25 Parks would occur as appropriate to establish conservation measures to protect special status species.

26 **Water Resources**

27 The Agreement would have long term beneficial impacts to water resources within the Mississippi Delta.
28 Enrolling land in CREP and installing CPs (restoring wetlands and riparian habitat) would decrease the
29 application of agricultural chemicals (pesticides and fertilizers) in the CREP Area and reduce erosion and
30 sedimentation, ultimately increasing groundwater storage and streamflows, improving surface water
31 quality, and improving wetland habitat. The Proposed Action would ultimately have beneficial impacts
32 to water quality within the Mississippi Delta Region.

33 **Earth Resources**

34 Long-term positive impacts to soils are expected to occur with the implementation of any of the three
35 proposed CPs outlined in the proposed Agreement. Removing marginal agricultural lands from
36 production would also benefit water quality by reducing soil erosion and sedimentation caused by
37 typical agricultural practices. During implementation of any of the CPs, there would be potential for

1 minor, increased erosion from any tillage, planting, or earthmoving activities required. However, once
2 the CPs are established, long-term beneficial impacts to soils would occur from establishment of
3 permanent cover (over the course of the 14 to 15 year contract) and removing the need to work the soil
4 for agricultural purposes. Decreases in wind erosion are also expected and would provide related air
5 quality benefits.

6 ***Cultural Resources***

7 The Proposed Action would occur on previously tilled cropland; therefore, the numerous properties and
8 sites listed on the National Register of Historic Places would not be impacted. It is unlikely that unknown
9 cultural resources would be impacted under the Proposed Action because areas that could be enrolled
10 in the CREP have been under cultivation. As part of the CREP enrollment process, a site-specific
11 evaluation would be done to determine land eligibility and the presence or potential for encountering a
12 cultural resource. Consultation with the State Historic Preservation Officer would occur as necessary
13 during the site-specific evaluation. In accordance with FSA policy, enrollment into CREP would be denied
14 if a cultural resource impact was expected.

15 ***Recreation***

16 During establishment of the CPs, there would be short-term negative impacts to local fish and game
17 species due to disturbance from implementation activity. However, once the CPs are established, there
18 would be higher quality hunting, fishing, and wildlife viewing opportunities in the Mississippi Delta over
19 the long-term because of the potential 8,000 acres of improved wildlife habitat.

20 ***Socioeconomics***

21 The Proposed Action could remove up to 8,000 acres of agricultural land from production within the
22 region of influence (ROI), approximately 0.17 percent of the total land within the ROI, and only 0.32
23 percent of the cultivated cropland in the ROI. While this represents a very small percentage of the total
24 agricultural land, removing it from agricultural practice would also remove all cost inputs to that land
25 such as labor, agricultural chemicals, seed, and energy. Removing the land could have an adverse effect
26 on the suppliers of those inputs. Given the small percentage of agricultural land targeted, these negative
27 impacts would likely be minor in nature.

28 Over the life of the proposed Agreement, up to \$17.8 million of Federal and state funds could be given
29 to producers that enrolled their lands. Annual rental payments and applicable incentive funds would
30 help to offset negative impacts from loss of farm income. There is also the potential to increase
31 recreational uses of enrolled lands for wildlife dependent recreation, such as hunting and wildlife
32 viewing. Improvement of wildlife habitat may lead to expenditures in recreation related goods and
33 hunting supplies, as well as gas and lodging expenditures.

34 ***Environmental Justice***

35 Implementation of the Proposed Action would incentivize agricultural producers to voluntarily remove
36 agricultural lands from production. Producers would be under no obligation to enroll any lands, and the
37 program would be undertaken on a completely voluntary basis. Nearby low-income and minority
38 communities may be adversely affected by the decisions of producers. Since producer's decisions would

1 have effects that spread beyond the boundaries of their farms into the economies of nearby
2 communities, the livelihoods of environmental justice populations could be affected. The potential for
3 impacts would be greater if there were large areas of CREP enrollment in lower income population
4 areas, specifically in Holmes, Humphreys, Issaquena, and Leflore Counties, where poverty rates are over
5 40 percent. The potential for minor positive and minor negative disproportionate impacts to low income
6 populations exists, but would depend on where enrolled producers are located in relation to the low
7 income populations. However, given the small percentage of agricultural land targeted, these negative
8 impacts would likely be minor in nature.

9 **CUMULATIVE IMPACTS**

10 Cumulative impacts from implementation of the Proposed Action would generally be positive, over the
11 life of the CREP contract (14 to 15 years). Biological resources, water resources, earth resources, and
12 recreation would all experience beneficial impacts from implementing the Agreement. Cumulative
13 beneficial impacts would occur in conjunction with other conservation programs available in the State of
14 Mississippi. There may be slight negative regional socioeconomic impacts from removing agricultural
15 lands from active production to enroll those lands in a conservation program. While the producer
16 enrolling the land may benefit financially, land enrolled in conservation programs would not have the
17 same positive economic impact to the local community since the indirect expenditures for the sale of
18 goods and services to support agricultural production (seed, chemical input, equipment, electricity, etc.)
19 would not occur.

20 **MITIGATION MEASURES**

21 There are no expected long-term significant negative impacts associated with implementation of the
22 Proposed Action. Prior to installation of CPs, producers must complete site-specific environmental
23 evaluations which would reveal any protected resources on the property. In those site-specific instances
24 where a wetland, threatened or endangered species, or a cultural resource may be present, consultation
25 with the appropriate lead agency would identify specific mitigation measures required to eliminate or
26 reduce the negative impacts to an acceptable level. In addition, each producer must prepare an
27 approved conservation plan to ensure protection of all valuable resources for the duration of the
28 contract (14 or 15 years).

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ACRONYMS AND ABBREVIATIONS

2	AgChem	Agricultural Chemical Groundwater	19	MDWFP	Mississippi Department of Wildlife,
3		Monitoring	20		Fisheries, and Parks
4	BHF	Bottomland Hardwood Forest	21	MLRA	Major Land Resource Area
5	CEQ	Council on Environmental Quality	22	MSRAP	Mississippi River Alluvial Plain
6	CFR	Code of Federal Regulations	23	NASS	National Agricultural Statistical Service
7	CP	Conservation Practice	24	NEPA	National Environmental Policy Act
8	CREP	Conservation Reserve	25	NPS	National Park Service
9		Enhancement Program	26	NRCS	Natural Resources Conservation Service
10	CRP	Conservation Reserve Program	27	NRHP	National Register of Historic Places
11	CWA	Clean Water Act	28	PEA	Programmatic Environmental Assessment
12	EIS	Environmental Impact Statement	29	PIP	Practice Incentive Payment
13	EO	Executive Order	30	ROI	Region of Influence
14	EQIP	Environmental Quality Incentive Program	31	SIP	Signing Incentive Payment
15	ESA	Endangered Species Act	32	U.S.	United States
16	FSA	Farm Service Agency	33	USACE	U.S. Army Corps of Engineers
17	MDEQ	Mississippi Department of	34	USCB	U.S. Census Bureau
18		Environmental Quality	35	USDA	U.S. Department of Agriculture
			36	USEPA	U.S. Environmental Protection Agency
			37	USFWS	U.S. Fish and Wildlife Service
			38	WHIP	Wildlife Habitat Incentive Program
			39	WMA	Wildlife Management Area
			40	WRP	Wetland Reserve Program

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1 **CHAPTER 1 INTRODUCTION**

2 The United States (U.S.) Department of Agriculture (USDA) Farm Service Agency (FSA) proposes to
3 implement a Conservation Reserve Enhancement Program (CREP) Agreement within the Lower
4 Mississippi Alluvial Valley, from this point forward referred to as the “Mississippi Delta”, in the State of
5 Mississippi (Appendix A). This Programmatic Environmental Assessment (PEA) has been prepared to
6 analyze the potential environmental consequences associated with implementation of the Proposed
7 Action or No Action Alternative.

8 **1.1 BACKGROUND**

9 **1.1.1 Conservation Reserve Program**

10 The FSA administers the Conservation Reserve Program (CRP), the Federal government’s largest private
11 land environmental improvement program. CRP is a voluntary program that supports the
12 implementation of long-term conservation measures designed to improve the quality of ground and
13 surface waters, control soil erosion, and enhance wildlife habitat on environmentally sensitive
14 agricultural land. The environmental impact of CRP was originally studied in the 2003 Programmatic
15 Environmental Impact Statement (EIS) (USDA 2003). Changes to CRP as set forth by the Farm Security
16 and Rural Investment Act of 2008 (Farm Bill) were addressed in the 2010 Supplemental EIS (USDA 2010).
17 The Final Supplemental EIS was published on June 18, 2010 and provides FSA decision makers with
18 programmatic level analyses that provide a context for the state specific PEAs.

19 **1.1.2 Conservation Reserve Enhancement Program**

20 The CREP was established in 1997 under the authority of CRP to address agriculture related
21 environmental issues by establishing conservation practices (CPs) on agricultural lands using funding
22 from State, Tribal, and Federal governments as well as non-government sources. CREP addresses high
23 priority conservation issues in defined geographic areas such as watersheds. Producers who enroll their
24 eligible lands in CREP receive financial and technical assistance for establishing CPs on their land as well
25 as annual rental payments through a 14 or 15 year contract. Once eligible lands are identified, site-
26 specific environmental reviews and consultation with and permitting from other Federal agencies are
27 completed as appropriate (Appendix B). Eligible land criteria are set forth by the Farm Bill of 2008 and
28 detailed in the FSA Handbook: *Agricultural Resource Conservation Program for State and County Offices*
29 (2-CRP, Revision 5). In brief, eligible cropland is cropland that is both of the following:

- 30 • Planted or considered planted to agricultural commodity during four of the six crop years
31 from 2002 to 2007; and
- 32 • Physically and legally capable of being planted in a normal manner to an agricultural
33 commodity as determined by the county office.

34 Participants are required to prepare a conservation plan that details the establishment and maintenance
35 of CPs to ensure the goals of CREP are met throughout the life of the contract. For some CPs, a wildlife
36 conservation plan must also be developed to ensure the practices meet their intended goals.

1 **1.1.3 Lower Mississippi Alluvial Valley (Delta)**

2 Prior to European settlement, the Mississippi Delta was dominated by bottomland hardwood forest
 3 (BHF) in the basins formed along the waterways and tributaries of the Mississippi River. These forested
 4 wetlands once encompassed over 21 million acres throughout the Mississippi Delta; however,
 5 agricultural conversion and flood control measures have drastically altered the hydrology and changed
 6 the landscape significantly. BHF now encompasses only 23 percent of its original extent in the Delta
 7 area, with only a scant 2 percent of the BHF in all of Mississippi remaining.

8 The vast, fertile floodplains of the Mississippi River are what allowed the huge expanse of BHF to thrive.
 9 These same conditions are what made this area so attractive to European settlers that found refuge
 10 along the natural levees that offered fertile, well drained soils that were excellent for agricultural
 11 production. As populations increased, agricultural conversion continued to spread and farming intensity
 12 increased. In the late 1880's, use of the river system and railroads allowed for large scale timber
 13 harvesting, which further removed BHF from the Delta.

14 Following the Great Flood of 1927, The Mississippi River Tributaries project was authorized by Congress.
 15 This allowed the U.S. Army Corps of Engineers (USACE) to engineer and build over 3,700 miles of levees
 16 along the Mississippi River and its tributaries. Increased flood control and drainage, in conjunction with
 17 technological advances in agriculture, continued to increase acreage that was suitable for production.
 18 This led to a spike in land clearing during the 1960's and 1970's, coinciding with high soy bean prices at
 19 the time. This resulted in great losses of BHF and associated wetland habitats. The result is the current
 20 limited extent of BHF in the Mississippi Delta.

21 Cropland now comprises approximately 54 percent of the land area in the 11 counties addressed in the
 22 CREP Agreement. Top agricultural products in the region include soybeans, cotton, corn, wheat, and
 23 rice. Table 1.1-1 shows the breakdown of cropland within the CREP counties.

Table 1.1-1. Agricultural Statistics for CREP Area (2007)			
Area	Total Cropland (acres)¹	Crop Sales (average per farm)¹	Average Farm Size (acres)¹
Washington	310,190	459,035	964
Sharkey	156,240	647,533	1,576
Issaquena	79,130	291,593	1,165
Bolivar	389,487	425,263	996
Humphreys	145,415	474,475	914
Holmes	125,206	85,646	410
Yazoo	194,323	138,629	532
Coahoma	265,566	493,664	1,160
Sunflower	330,940	513,941	1,021
Leflore	262,986	547,508	1,064
Tallahatchie	236,334	166,987	647
Mississippi	5,530,825	116,227	273

Source: NASS 2007.

1 **1.2 THE PROPOSED ACTION**

2 The Proposed Action is to implement the Mississippi Delta CREP Agreement. Specifically, the CREP
3 Agreement seeks to retire cropland within Washington, Sharkey, Issaquena, Bolivar, Humphreys,
4 Holmes, Yazoo, Coahoma, Sunflower, Leflore, and Tallahatchie Counties and establish CPs to improve
5 water quality, reduce soil erosion, and enhance wildlife habitat. Eligible producers would receive
6 financial and technical assistance in exchange for removing cropland from active agricultural production
7 under a long term contract of 14 or 15 years. Though funding currently only exists for up to 4,000 acres,
8 analysis in this PEA will address a total enrollment of up to 8,000 acres within the aforementioned
9 counties. If funding for more than the 4,000 acres becomes available, the Mississippi Delta CREP
10 Agreement would have to be amended or modified with FSA before any additional acres over the 4,000
11 could be enrolled.

12 **1.3 PURPOSE AND NEED**

13 The purpose of the Proposed Action is to implement the proposed Agreement for the State of
14 Mississippi. The proposed Agreement is needed to aid in restoring BHF to the Mississippi Delta,
15 providing critical habitat for the Louisiana black bear, as well as a number of other Federally listed
16 species. Wetland restoration efforts would also provide increased habitat for waterfowl. Additionally,
17 the CREP would improve water quality and maintain water quantity that would be beneficial to a
18 number of aquatic species.

19 **1.4 REGULATORY COMPLIANCE**

20 This PEA has been prepared to satisfy the requirements of the National Environmental Policy Act (NEPA)
21 (Public Law 91-190, 42 U.S. Code 4321 et seq.); implementing regulations adopted by the Council on
22 Environmental Quality (CEQ) (40 Code of Federal Regulations [CFR] 1500-1508); and FSA implementing
23 regulations, Environmental Quality and Related Environmental Concerns – Compliance with NEPA (7 CFR
24 799). The intent of NEPA is to protect, restore, and enhance the human environment through well-
25 informed Federal decisions. A variety of laws, regulations, and Executive Orders (EOs) apply to actions
26 undertaken by Federal agencies and form the basis of the analysis presented in this PEA. Those
27 regulations include, but are not necessarily limited to:

- 28 • Endangered Species Act (ESA)
- 29 • Migratory Bird Treaty Act
- 30 • Clean Water Act (CWA)
- 31 • Clean Air Act
- 32 • National Historic Preservation Act
- 33 • Archaeological Resources Protection Act
- 34 • Pollution Prevention Act
- 35 • EO 11988, Protection of Floodplains
- 36 • EO 11990, Protection of Wetlands

37 **1.5 PUBLIC INVOLVEMENT**

38 In accordance with NEPA, a Federal agency must coordinate with other Federal and state agencies with
39 an interest in the Proposed Action or resources potentially affected by that action as well as concerned

1 public. The proposed Agreement was developed in coordination with several Federal and state agencies
2 and stakeholders to include:

- 3 • The Nature Conservancy
- 4 • Delta F.A.R.M.
- 5 • Delta Wildlife
- 6 • Mississippi Department of Environmental Quality (MDEQ)
- 7 • Natural Resources Conservation Service (NRCS)
- 8 • FSA
- 9 • Mississippi Department of Wildlife, Fisheries, and Parks (MDWFP)
- 10 • U.S. Fish and Wildlife Service (USFWS)

11 In accordance with NEPA, the Draft PEA was made available for public and agency review for a period of
12 30 days (May 1 through May 31). Paper copies of the document were available in the respective county
13 FSA offices as well as on the World Wide Web on USDA's website. A Notice of Availability was published
14 in the *Delta Democrat Times* newspaper on May 1 announcing the availability of the Draft PEA as well as
15 an invitation to a public meeting.

16 A public meeting will be held during the public comment period for the Draft PEA to solicit comments on
17 the potential impacts associated with the proposed Agreement as determined by the Draft PEA. The
18 meeting will be held on May 22 at the Capps Center at the Delta Research and Extension Center in
19 Stoneville, Mississippi. Input received at this public meeting and throughout the comment period was
20 considered to the extent practicable during the development of the Final PEA.

21 **1.6 ORGANIZATION OF PEA**

22 This PEA assesses the potential impacts of the Proposed Action and the No Action Alternative on
23 potentially affected environmental and economic resources.

- 24 • **Chapter 1** provides background information relevant to the Proposed Action, and discusses
25 its purpose and need.
- 26 • **Chapter 2** describes the Proposed Action, alternatives considered, and the No Action
27 Alternative.
- 28 • **Chapter 3** describes the baseline conditions (i.e., the conditions against which potential
29 impacts of the Proposed Action and alternatives are measured) for each of the potentially
30 affected resources.
- 31 • **Chapter 4** describes the potential environmental consequences to the resources described
32 in Chapter 3.
- 33 • **Chapter 5** describes cumulative impacts.
- 34 • **Chapter 6** describes mitigation measures.
- 35 • **Chapter 7** list the preparers of this document
- 36 • **Chapter 8** lists the persons and agencies consulted.
- 37 • **Chapter 9** contains references.

CHAPTER 2 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 PROPOSED ACTION

FSA proposes to implement a CREP Agreement in the Mississippi Delta (Appendix A). Under the Proposed Action, up to 8,000 acres of eligible cropland within Washington, Sharkey, Issaquena, Bolivar, Humphreys, Holmes, Yazoo, Coahoma, Sunflower, Leflore, and Tallahatchie Counties would be removed from agricultural production. The Proposed Action would include establishing contracts with producers of eligible lands in order to implement approved CPs. Producers would receive support for the costs of installing and maintaining the practices as well as annual rental payments for lands enrolled in the program. The primary objectives of the Mississippi Delta CREP are to:

- Improve water quality, erosion control, and wildlife habitat related to agricultural use.
- Utilize Federal and non-Federal resources in a coordinated manner to address and fulfill the priority conservation actions of Mississippi’s Comprehensive Wildlife Conservation Strategy. Specifically, those priority actions are:
 - Encourage restoration and improved management of altered/degraded habitat when possible.
 - Encourage and improve agricultural/watershed land use planning to address non-point pollution, erosion, and water quality issues.
 - Promote and develop landowner incentive and assistance programs for conservation of species of greatest concern and their habitats.
 - Enhance viability of species of greatest concern by providing habitat corridors between disjointed populations or subpopulations.
 - Monitor/limit point source erosion and sedimentation or pollution into streams.
- Reduce sediment loading of streams and lakes in the CREP Area through installation of conservation measures which reduce erosion rates and reduce off-field transportation rates of herbicides, pesticides, and nutrients.
- Increase the BHF acreage to provide habitat for several migratory waterfowl and shorebird species.
- Commence initial wetland restoration in a coordinated effort by Federal and state agencies and non-governmental organizations.
- Provide increased protection of sub-surface water sources from contamination by agricultural chemicals, nutrients, and pathogens by assisting with the installation of conservation measures that reduce point and non-point pollution.

2.1.1 Acreage and Geographic Area

The proposed CREP Area is within the Mississippi Delta and includes 11 counties. The three major watersheds within the CREP Area include: Big Sunflower River Watershed, Deer Creek-Steele Bayou Watershed, and Upper Yazoo Watershed (**Figure 2.1-1**).

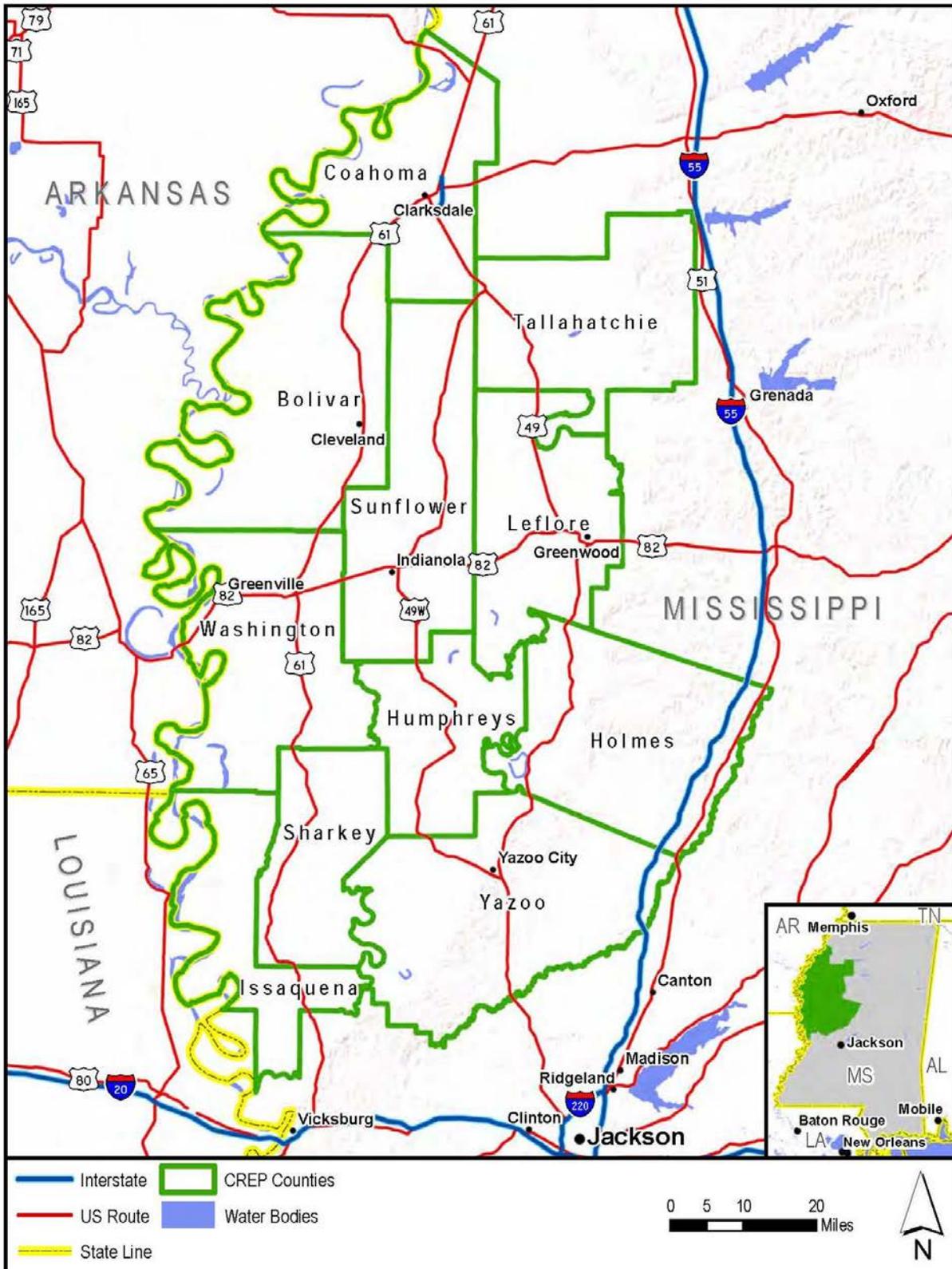


Figure 2.1-1. Proposed Mississippi CREP Area

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1 Under the Agreement, up to 4,000 acres of cropland would be enrolled in the program. There are
 2 approximately 2,495,817 eligible acres within the total CREP Area. Land to be enrolled must meet all
 3 applicable eligibility requirements as outlined within FSA Handbook: *Agricultural Resource Conservation*
 4 *Program for State and County Offices (2-CRP, Revision 5)* and must have at least 51 percent of the land
 5 area within the proposed CREP Area.

6 Due to the vast acreage of eligible lands, this PEA will analyze impacts on the assumption that 8,000
 7 acres of total land would be enrolled within the counties outlined by the Agreement. The 4,000 acres
 8 outlined by the Agreement were determined due to available funding sources. If the Mississippi Delta
 9 CREP reaches its enrollment goal of 4,000 acres and new funds become available, a supplemental
 10 agreement, or a modification of the original agreement with FSA would have to occur before any
 11 additional lands could be enrolled. However, by analyzing impacts for 8,000 acres, additional NEPA
 12 documentation would not be required, as long as no more than 8,000 acres of enrollment occurred in
 13 the counties outlined by the original agreement.

14 **2.1.2 Conservation Practices**

15 The approved CPs for the Mississippi CREP Proposal are provided in Table 2.1-1. Also provided in
 16 Table 2.1-1 are the estimated acreages to be enrolled by practice. The actual acres enrolled and the CPs
 17 established would be determined by FSA and NRCS technical staff through an assessment of the best
 18 practice for a particular enrollment area. A full description of each practice can be found in FSA
 19 Handbook: *Agricultural Resource Conservation Program for State and County Offices (2-CRP, Revision 5)*.

Table 2.1-1. Approved CPs for Mississippi CREP			
Practice	Brief Description/Purpose	Estimated Acreage to Be Enrolled	Acres Analyzed in PEA
CP22, Riparian Forest Buffer	Remove nutrients, sediment, organic matter, pesticides, and other pollutants from surface runoff and subsurface flow by deposition, absorption, plant uptake, denitrification, and other process, and thereby reduce pollution and protect surface water and subsurface water quality while enhancing the ecosystem of the waterbody. Additional purposes are to create shade to lower water temperature to improve habitat for aquatic organisms and provide a source of detritus and large woody debris for aquatic organisms and habitat for wildlife.	1,330	2,660
CP23, Wetland Restoration	Restore the functions and values of wetland ecosystems that have been devoted to agricultural use. This practice is applicable for eligible cropland within the 100-year floodplain of a permanent river or stream and includes a minimum of 51 percent hydric soils for the acreage offered.	1,335	2,670
CP31, Bottomland Hardwood Timber Establishment on Wetlands	Establish and provide for the long-term viability of a bottomland hardwood stand of trees that will: control sheet, rill, scour, and other erosion; reduce water, air, or land pollution; restore and enhance the natural and beneficial functions of wetlands; promote carbon sequestration; and restore and connect wildlife habitat. This practice is applicable for eligible cropland within the 100-year floodplain of a permanent river or stream.	1,335	2,670
Total		4,000	8,000

1 Preparation of lands for the installation of CPs may include the following approved actions as
2 determined by FSA or NRCS technical staff:

- 3 • Planting of temporary vegetative cover;
- 4 • Application of nutrients, minerals, and seed;
- 5 • Application of approved herbicides and pesticides;
- 6 • Grading, leveling, and filling;
- 7 • Planting of tree and shrub seedlings, and tree thinning;
- 8 • Installation of temporary supplemental irrigation systems or plastic mulch;
- 9 • Installation of rock-filled infiltration trenches to induce subsurface flow;
- 10 • Installation of permanent fencing;
- 11 • Installation of water gaps, bridges, or other livestock crossing facilities on small streams;
- 12 • Installation of animal damage control devices such as tree shelters, netting, and plastic
13 tubes;
- 14 • Breaking tile (or thin layers of clay) to restore natural water flows;
- 15 • Seeding firebreaks, fuel breaks, or fire lanes;
- 16 • Installation of dams, levees, dugouts, or dikes, if needed to develop or restore hydrology;
17 and
- 18 • Installation of structures designed to regulate flow such as pipe, chutes, and outlets.

19 In accordance with FSA National policy, maintenance of the CPs would be required for the duration of
20 the contract, as well as periodic management of the CPs as described in the Conservation Plan. The
21 maintenance and management practices would be done to ensure the goals and benefits of the CP are
22 being met. Managed haying and grazing would be limited to 1 out of every 3 years in accordance with
23 national policy.

24 **2.1.3 Funding**

25 The estimated cost for implementing the Mississippi CREP is approximately \$8,899,775, assuming 4,000
26 acres are enrolled (funding would increase to approximately \$17.8 million to enroll 8,000 acres).
27 Proposed funding sources would be 80 percent Federal funds and 20 percent non-Federal funds.
28 Enrolled producers would enter into 14 or 15 year contracts that stipulate implementation of approved
29 CPs to receive financial assistance in the form of one-time cost-share payments for the installation of
30 CPs, cost-share payment for practice management, annual per acre rental payments, and incentive
31 payments where applicable. For CP22, CP23, and CP31, producers would be eligible for Practice
32 Incentive Payments (PIPs) and Signing Incentive Payments (SIPs) in accordance with National policy. In
33 addition to the Federal incentive payments (PIPs and SIPs), an additional one-time incentive payment of
34 \$200 (for CP22 and CP31) and \$150 (for CP23) per acre would be paid by state partners.

35 **2.2 No ACTION**

36 Under the No Action Alternative, the Agreement would not be implemented. CRP and other
37 conservation programs would continue to be available for producers; however, the additional benefits
38 of the proposed Agreement would not be realized.

1 **2.3 RESOURCES ELIMINATED FROM ANALYSIS**

2 CEQ regulations (40 CFR 1501.7) state that the lead agency shall identify and eliminate from detailed
3 study the issues which are not important or which have been covered by prior environmental review,
4 narrowing the discussion of these issues in the document to a brief presentation of why they would not
5 have a dramatic effect on the human or natural environment. In accordance with this regulation, the
6 following resources have been eliminated from further analysis in this PEA:

7 *Traffic and Transportation.* Implementing the Agreement would not increase or decrease the demand
8 for state-wide or local transportation, nor would it have any effect on current traffic conditions.

9 *Noise.* Implementing the Agreement would not permanently increase ambient noise levels at or
10 adjacent to the CREP Area. Increased noise levels associated with implementing or maintaining CPs
11 would be minor, temporary, and similar to existing noise on active farms.

12 *Human Health and Safety.* Implementing the Agreement would not appreciably affect human health and
13 safety. While installation of CPs would pose a safety risk, this risk would be the same if the land
14 remained in active agricultural production.

15 *Air Quality.* The Proposed Action would have little impact to air quality in Mississippi. Preparation of
16 lands for the installation of CPs may include several approved actions (e.g., grading, leveling, and filling,
17 and installation of structures designed to regulate water flow or restore shallow water areas), that
18 would cause localized and temporary impacts to air quality. Potential air quality impacts from
19 construction activities would occur from: 1) clearance combustion emissions due to the use of fossil
20 fuel-powered equipment and vehicles, and 2) particulate matter emissions during earth-moving
21 activities. Air quality impacts would be expected to be short-term and very minor due to the limited
22 acreage that would be enrolled. No areas within the proposed CREP area are designated as *non-*
23 *attainment* for USEPA criteria pollutants (USEPA 2013). Impacts would also be offset by the benefits to
24 air quality with implementation of Proposed Action (reduced need for tilling of agricultural fields, less
25 use of farm equipment, etc.). In addition, best management practices would be used during
26 construction activities to reduce air quality impacts. Therefore, air quality is dismissed from further
27 analysis.

28 *Coastal Zones/Coastal Barriers.* None of the proposed CREP counties are within the Mississippi coastal
29 zone. Potential indirect impacts to the coastal zone or coastal resources would be minor and beneficial.

30 *Other Formally Classified Lands.* The proposed CREP Area does not include any Wild and Scenic Rivers,
31 National Natural Landmarks, Wilderness Areas, National Forests, National Parks, National Monuments,
32 or National Grasslands. In addition, these areas would not be eligible for enrollment in CREP; therefore,
33 the action does not have any potential to impact these types of areas.

1 **2.4 EVALUATION OF ALTERNATIVES**

2 A brief summary of the potential impacts for the Proposed Action and the No Action Alternative are
 3 provided in Table 2.4-1. Section 4.0 provides the full analysis for each of these resource areas.

4

Table 2.4-1. Evaluation of Alternatives		
Resource Section	Alternative 1 (Preferred)	No Action Alternative
Biological Resources	<ul style="list-style-type: none"> • Short-term impacts to wildlife (in the form or disturbance or displacement) from implementation activities associated with installing CPs are expected. • Long-term benefits to wildlife, including protected species, are expected from the increase and enhancement of wildlife habitat. • Improved water quality from the decrease in agricultural run-off would have a long-term positive impact to local fisheries as well as downstream. • Protected species would not be impacted. The site-specific evaluation would identify the presence of a protected species or critical habitat; consultation would occur with USFWS or MDWFP as appropriate to ensure their protection. 	<ul style="list-style-type: none"> • The additional long-term benefits to biological resources would not occur under the No Action Alternative. Producers would still be able to enroll lands in other conservation programs.
Water Resources	<ul style="list-style-type: none"> • Reducing chemical inputs and nutrients in runoff would improve local surface water conditions. • CPs 22, 23, and 31 would directly improve or enhance wetlands and riparian areas. • Reduced need for groundwater for irrigation 	<ul style="list-style-type: none"> • While producers would still be able to enroll lands in other conservation programs, the additional benefits to water resources from the Mississippi Delta CREP would not be realized.
Earth Resources	<ul style="list-style-type: none"> • Establishing permanent cover would stabilize soils on enrolled acres and reduce erosion potential. Reducing erosion would also reduce sedimentation in nearby surface waters and improve water quality. • Temporary impacts to earth resources would occur during establishment of CPs from tilling and grading activities; however, this disturbance would be similar in nature to the existing agricultural disturbance. • No impacts to topography or geology are expected. 	<ul style="list-style-type: none"> • Continuing active agricultural production would continue to routinely disturb soils and make the land susceptible to erosion. Producers would still be able to enroll lands in other conservation programs.
Cultural Resources	<ul style="list-style-type: none"> • No impact to cultural resources is expected to occur. • Site-specific evaluation would determine if an area has a higher potential to encounter an unknown cultural resource. Consultation with the State Historic Preservation Officer would occur as appropriate during the evaluation. • In accordance with FSA policy as found in 1-EQ, enrollment would not be approved if a cultural resource impact would occur. 	<ul style="list-style-type: none"> • Continuing active agricultural production would not affect cultural resources.
Recreation	<ul style="list-style-type: none"> • Long-term benefits to water quality and improving wildlife habitats would have long-term beneficial impacts to recreation in the CREP Area. 	<ul style="list-style-type: none"> • Continuing active agricultural production would not affect recreation in the CREP Area.
Socioeconomics	<ul style="list-style-type: none"> • Implementing the Mississippi Delta CREP would potentially provide up to \$17.8 million to the local area in the form of annual rental payments, cost 	<ul style="list-style-type: none"> • The No Action Alternative would not change the existing socioeconomic conditions.

Table 2.4-1. Evaluation of Alternatives		
Resource Section	Alternative 1 (Preferred)	No Action Alternative
	<p>share, and incentives where applicable.</p> <ul style="list-style-type: none"> • While a producer may likely incur a positive financial impact, those same positive impacts would not likely flow down to the local economy. Removing agricultural land from active production would have corresponding decreases in farm expenditures (seed, chemicals, equipment, etc.). • Conversely, it has been noted that decreasing the agricultural supply in an area could have corresponding increases in commodity prices. 	
Environmental Justice	<ul style="list-style-type: none"> • All counties within the proposed CREP Area are considered low-income populations. Removing such a small area of active agricultural production for CREP in these counties is unlikely to drastically impact low-income populations. 	<ul style="list-style-type: none"> • Continuing active agricultural production would not represent an environmental justice concern.

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1 **CHAPTER 3** **AFFECTED ENVIRONMENT**

2 This chapter provides a description of the existing environment that could be affected by the Proposed
3 Action. Resource areas potentially affected and included in this analysis include:

- 4 • Biological Resources (Wildlife, Vegetation, and Special Status Species)
- 5 • Water Resources (Ground Water, Surface Water, Water Quality, and Wetlands)
- 6 • Earth Resources (Geology, Topography, and Soils)
- 7 • Cultural Resources
- 8 • Socioeconomics
- 9 • Environmental Justice

10 Please note that the PEA assumes 8,000 total acres of enrollment in the Mississippi Delta CREP, and not
11 the 4,000 for which the proposed CREP Agreement as it is currently written (See Table 2.2-1 for CP
12 breakdown) . If additional funding becomes available and the MS Delta CREP has met its enrollment
13 goals, the CREP Agreement would have to be amended before any additional acres could be enrolled.

14 **3.1** **BIOLOGICAL RESOURCES**

15 Biological resources include plant and animal species and the habitats within which they occur. For this
16 analysis, these resources are divided into three categories: wildlife, vegetation, and special-status
17 species. Vegetation and wildlife refer to the plant and animal species, respectively, both native and
18 introduced, which characterize a region. Special status species are those species that are protected
19 under Federal or state laws.

20 The affected environment for biological resources is the area encompassed by the proposed CREP Area.,
21 The CREP Area includes the following counties: Washington, Sharkey, Issaquena, Bolivar, Humphreys,
22 Holmes, Yazoo, Coahoma, Sunflower, Leflore, and Tallahatchie.

23 **3.1.1** **Wildlife**

24 Wildlife and fisheries refer to the animals and fish that inhabit the CREP Area and the habitats in which
25 they live. Fisheries include areas directly downstream from the CREP Area. MDWFP has legal authority
26 over Mississippi's fish and wildlife. Numerous species are pursued recreationally through activities such
27 as hunting and fishing, and are classified as game species. Non-game species are also of interest for uses
28 such as nature study, photography, and bird watching. Mississippi manages wildlife at the species,
29 subspecies, and population level, as well as managing the various habitats important to them.

30 Over 240 fish species, 45 species of reptiles and amphibians, and 37 species of mussels depend on the
31 river and floodplain system of Mississippi Delta. In addition, 50 species of mammals and approximately
32 60 percent of all bird species in the contiguous U.S. currently utilize the Mississippi River and its
33 tributaries and/or their associated floodplains.

34 Many of the species within the CREP Area have responded to the changes brought on by settlement and
35 agricultural development. Conversion of natural habitats to agriculture have had significant impacts on
36 the wildlife population in the area. Some changes have enhanced habitat as a staging or stop-over area

1 for migrating birds by creating a readily available food supply. However, agriculture has significantly
2 reduced or eliminated many significant wetland complexes and other forest habitats necessary for
3 native wildlife.

4 **3.1.2 Vegetation**

5 Ecoregions are defined as areas of relatively homogenous ecological systems that contain similar soils,
6 vegetation, climate, and geology. North America is divided into four levels of ecoregions and these
7 ecoregions are further divided into divisions and provinces. The proposed CREP Area is within the Humid
8 Temperate Domain Ecoregion, Subtropical Division, and Lower Mississippi Riverine Forest and
9 Southeastern Mixed Forest Provinces (Bailey 1995). The Humid Temperate Domain contains forests of
10 broadleaf deciduous and needleleaf evergreen trees. The variable importance of winter frost
11 determines six divisions: warm continental, hot continental, subtropical, marine, prairie, and
12 Mediterranean. Within the subtropical division, forest provides the typical vegetation throughout most
13 of the division. Much of the sandy coastal region of the Southeastern U.S. is covered by second-growth
14 forests of longleaf, loblolly, and slash pines. Inland areas have deciduous forest. Before cultivation, the
15 Lower Mississippi Riverine Forest Province area was covered by bottom-land deciduous forest with an
16 abundance of green and Carolina ash, elm, cottonwood, sugarberry, sweetgum, and water tupelo, as
17 well as oak and bald cypress. Pecan is also present, associated with eastern sycamore, American elm,
18 and roughleaf dogwood.

19 BHF is by far the dominant natural plant component of Mississippi Delta. It is maintained by regular
20 back- and headwater flood events and localized ponding on poorly drained soils. Headwater or
21 mainstem flooding results from rainstorms over the watersheds of the Mississippi's tributaries, and
22 produces the great spring floods characteristic of Mississippi Delta. Conditions within Mississippi Delta
23 range from permanently flooded areas supporting only emergent or floating aquatic vegetation to high
24 elevation sites that support climax hardwood forests. The distribution of bottomland hardwood
25 communities within the floodplains of the Mississippi River and its tributaries is determined by timing,
26 frequency, and duration of flooding. Elevation differences of only a few inches result in great differences
27 in soil saturation characteristics and the species of plants that grow there. As a result, much variability
28 exists within a bottomland hardwood ecosystem, ranging from the bald cypress/tupelo swamp
29 community that develops on frequently inundated sites with permanently saturated soils, to the
30 cherrybark oak/pecan community found on the sites subjected to temporary flooding. Between these
31 rather distinct community types are the more transitional, less distinguishable overcup oak/water
32 hickory, elm/ash/hackberry, and sweetgum/red oak communities (Mississippi Museum of Natural
33 Science 2005).

34 Seasonal inundations deposited rich alluvial soil, contributing to the formation of the vegetation that
35 noticeably distinguished the BHF of the Mississippi Delta from the upland forest of the hills to the east.
36 The soils were derived from the deposits of sand, silt, clay, and calcareous sediments left behind by the
37 meandering rivers in the basin. The Mississippi Delta BHF was dominated by deciduous trees such as
38 oaks, gums, and bald cypress which could tolerate frequent periods of inundation due to the
39 hydrological fluctuations of the floodplain.

1 **3.1.3 Special Status Species**

2 Special status species refer to those species that are protected under the ESA or similar state laws. If
 3 associated with a Federally protected species, habitat is designated by the USFWS as critical habitat
 4 since it is essential for the recovery of the species. Like those species, critical habitat is also protected by
 5 the ESA.

6 Mississippi has 40 threatened and endangered plant and animal species. Within the 11 county CREP
 7 Area, the USFWS has identified five threatened or endangered species that may occur in the area.
 8 Additionally, there is one species that is listed as a candidate species. The threatened, endangered, and
 9 candidate species are presented in Table 3.1-2 below (USFWS 2012).

Table 3.1-1. Federally Listed Species Potentially Occurring in the CREP Area		
Common Name	Scientific Name	Status
Least Tern	<i>Sterna antillarum</i>	Endangered
Fat pocketbook	<i>Potamilus capax</i>	Endangered
Rabbitsfoot mussell	<i>Quadrula cylindrica ssp. cylindrica</i>	Proposed Threatened
Pallid sturgeon	<i>Scaphirhynchus albus</i>	Endangered
Pondberry	<i>Lindera melissifolia</i>	Endangered
Louisiana Black bear	<i>Ursus americanus luteolus</i>	Threatened

Source: USFWS 2013a

10 The Least Tern is one of the smallest terns, measuring 7.8-8.6 inches in length and a wingspread of 20
 11 inches. It occurs from Maine to Venezuela, along rivers of the Mississippi River drainage in the interior of
 12 the U.S. and in southern California. The species winters from the Gulf Coast southward. The interior
 13 populations nest (or formerly nested) on sandbars in the Mississippi River from Vicksburg north to the
 14 Cape Girardeau, Missouri. The interior population has declined throughout the central part of the U.S.
 15 because of the elimination of sandbar nesting habitat due to construction of reservoirs and
 16 channelization of rivers (Mississippi Museum of Natural Science 2001).

17 The Fat Pocketbook mussel is a small freshwater mussel that can be found in sand, mud, and fine gravel
 18 bottoms of large rivers. The species is endangered due to flood control structures, river impoundments
 19 for irrigation, and dredging activities that remove the substrate necessary for the species to survive
 20 (USFWS 2013b).

21 Like the Fat Pocketbook mussel, the Rabbitsfoot mussel is a relatively small freshwater mussel found in
 22 rivers and streams throughout the Mississippi River drainage. Its biology is similar to that of the Fat
 23 Pocketbook mussel and threats to habitat are chiefly from flood control structures, impoundments for
 24 agriculture, and dredging activities. It is estimated that the species has been lost from 64 percent of its
 25 historic range (USFWS 2013c).

26 The Pallid Sturgeon is a large freshwater sturgeon that is nearly restricted to the main channels of the
 27 Lower Yellowstone River, the Missouri River, and the lower Mississippi River. It has been collected in the
 28 Mississippi River and the Big Sunflower River in Sharkey County. The species prefers turbid water with
 29 strong current over sandy or rocky bottoms. The species is in decline due to river channelization,
 30 impoundment creation, and alteration of flow regimes. These alterations have blocked the movement of

1 the fish, modified or destroyed spawning habitat, and destroyed forage habitat (Mississippi Museum of
2 Natural Science 2001).

3 Pondberry is a deciduous shrub that grows approximately 6 feet tall and spreads underground by root-
4 like structures. It is known to occur in six states in the southeast, including Mississippi. Four populations
5 are known to occur in the Yazoo Delta region in Bolivar, Sharkey, and Sunflower Counties. Major threats
6 to this species is loss of habitat through drainage and conversion to other uses (Mississippi Museum of
7 Natural Science 2001).

8 The Louisiana black bear is a subspecies of black bear that occurs in southern half of Mississippi, as well
9 as in Louisiana and Texas. Black bears are thought to have inhabited all of Mississippi in the past, but are
10 now confined to the bottomlands along the Mississippi, Lower Pear, and Pascagoula Rivers. Black bears
11 were hunted in the past, and were almost completely eliminated from the State of Mississippi. It is
12 estimated that only 25 to 50 bears remain in the state. Major threats are habitat destruction and over
13 hunting (Mississippi Museum of Natural Science 2001).

14 The State of Mississippi also lists and protects rare species in Mississippi. Seventy-six animals have been
15 designated as state endangered through the Mississippi State Law, the *Nongame and Endangered*
16 *Species Conservation Act of 1974*. Plants receive no formal legal protection by state law in Mississippi
17 other than that provided for in the trespass laws (Mississippi Museum of Natural Science 2005).

18 **3.2 WATER RESOURCES**

19 For this analysis, water resources include groundwater, surface water, water quality, and wetlands. The
20 CWA, the Safe Drinking Water Act, and the Water Quality Act are the primary Federal laws that protect
21 the nation's waters including lakes, rivers, aquifers, and wetlands.

22 **3.2.1 Ground Water**

23 The predominant source of groundwater supply within the Mississippi Delta CREP Area is the Mississippi
24 River alluvial aquifer. Within that major aquifer falls the Cockfield formation, Sparta sand, and Winona-
25 Tallahatta sub-aquifers (MDEQ 2011). Groundwater quality, overall, is good throughout the state. In
26 1987, Mississippi passed legislation requiring the state to monitor for the potential effects of agricultural
27 chemicals and other pollutants on groundwater. The state established the Agricultural Chemical
28 Groundwater Monitoring (AgChem) Program to monitor shallow groundwater wells specifically for the
29 effects of agriculture. The AgChem Program results largely indicate that the overall quality of
30 groundwater is unaffected by agricultural activities (MDEQ 2011). No sole source aquifers are located
31 within the CREP Area (USEPA 2008)

32 **3.2.2 Surface Water**

33 The surface waters of the CREP Area include three major Mississippi River tributary basins (See Figure
34 3.2-1): Big Sunflower River (1,247 square miles), Deer Creek-Steele Bayou (823 square miles), and Upper
35 Yazoo River (535 square miles). The principal tributaries of the Big Sunflower are Quiver River,
36 Hushpuckena River, Little Sunflower River, and Snake Creek. The principal tributaries of the Yazoo River
37 are the Tallahatchie, Coldwater, Yocona, and Yalobusha Rivers all rising in the upper section, and the

1 Sunflower River which flows through the lower Yazoo delta section. Numerous other smaller tributaries
2 are also included in the 11 county CREP Area.

3 Agriculture is the largest land use in the study area. Surface waters can be affected by sediment
4 generated from agriculture. Sediment is the term used to describe soil particles that can be transported
5 by stormwater runoff, wind, or water currents. Exposed soils are vulnerable to wind and water erosion,
6 thereby increasing the sediment load in nearby surface waters. Transported sediments may also
7 contribute to degraded water quality if those sediments are contaminated or carry chemicals. Increased
8 sediments in surface water also remain suspended in water, creating turbidity which affects plants and
9 organisms living in lakes, rivers, and streams.

10 **3.2.3 Water Quality**

11 Under the CWA passed in 1972 by Congress, every state must develop and adopt water quality
12 standards to protect, maintain, and improve the quality of the nation's surface waters. The goal of the
13 CWA is to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters".
14 The interim goal is to have "water quality which provides for the protection and propagation of fish,
15 shellfish, and wildlife, and provides for recreation in and on the water", wherever attainable. The
16 standards represent a level of water quality that will support the goal of "swimmable fishable" waters.

17 MDEQ monitors the quality of surface water throughout the state. Monitoring data and information are
18 used to make water quality assessments. Assessments are general characterizations of water body
19 health. The state's most comprehensive assessment report is the Federal CWA Section 305(b) Water
20 Quality Inventory Report.

21 Based on a recommendation from the U.S. Environmental Protection Agency (USEPA), MDEQ is
22 developing a Nutrient Criteria Development Plan which includes the following objectives: 1) establish a
23 Nutrient Work Group or Groups comprised of Federal and state experts to review historical nutrient
24 data, identify data gaps, help develop MDEQ's approach, recommend additional monitoring and data
25 collection, recommend water body classification systems, review data, and analyze data; 2) periodically
26 prepare reports which present MDEQ's progress of developing nutrient criteria; and 3) MDEQ's
27 submittal of scientifically defensible numeric nutrient criteria to USEPA for review and approval in
28 accordance with agreed-upon timelines. MDEQ plans to develop numeric nutrient criteria using a
29 system-wide approach (MDEQ 2010).

30

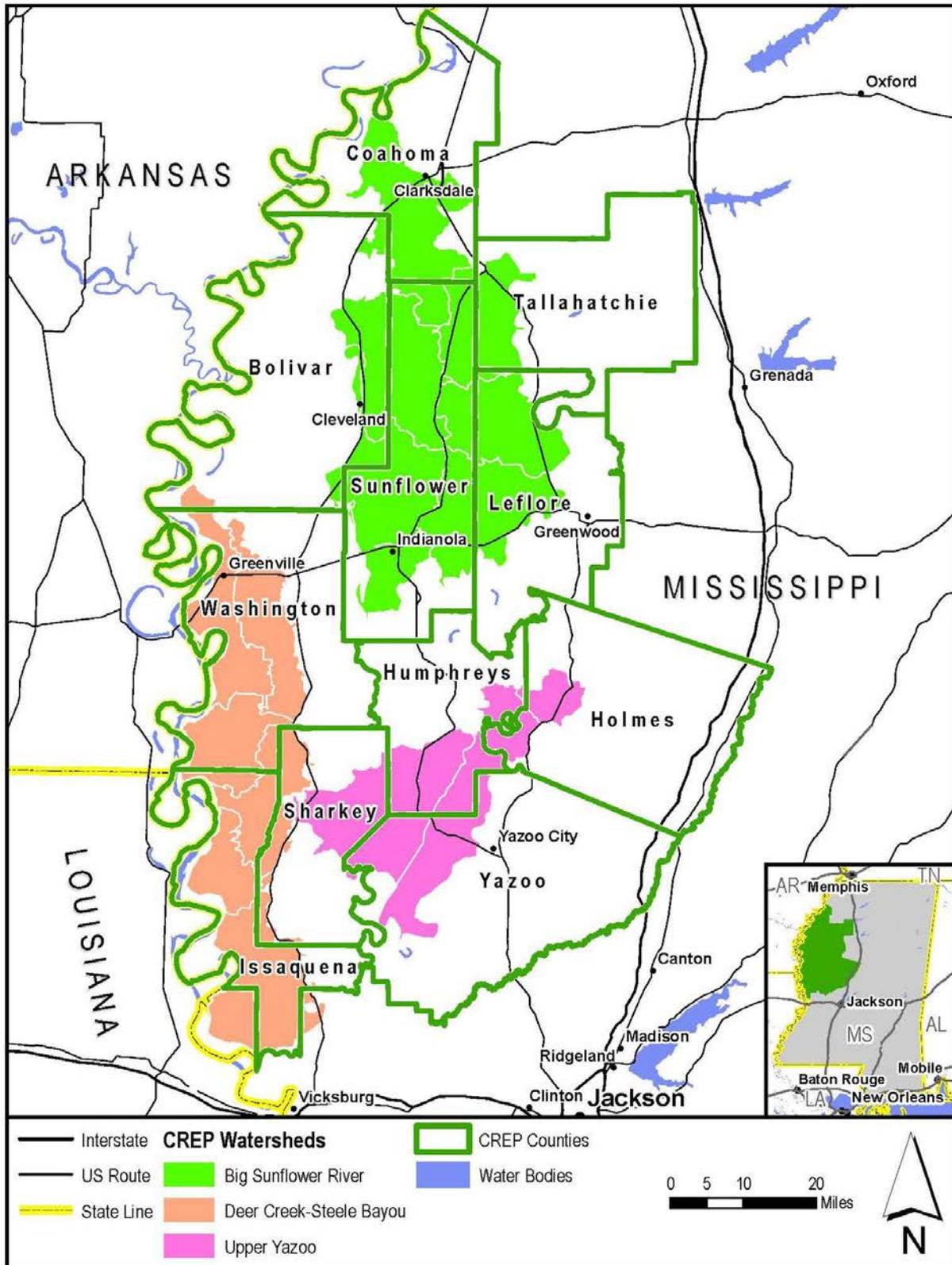


Figure 3.2-1. CREP Watershed

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1 **3.2.4 Wetlands**

2 Wetlands are broadly considered “waters of the U.S.” and are defined by USACE as areas that are
3 inundated and saturated by surface or groundwater at a frequency and duration sufficient to support,
4 and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in
5 saturated soil conditions (USACE 1987).

6 Generally, wetlands in Eastern Mississippi consist of BHF and riparian wetlands. BHF is a type of
7 deciduous hardwood forest found in broad lowland floodplains. These ecosystems are commonly found
8 wherever streams or rivers at least occasionally cause flooding beyond their channel confines. They are
9 deciduous forested wetlands, made up of different species of gum, oak, and bald cypress, which have
10 the ability to survive in areas that are either seasonally flooded or covered with water much of the year.
11 Identifying features of these wetland systems are the fluted or flaring trunks that develop in several
12 species, and the presence of knees, or aerial roots.

13 **3.3 EARTH RESOURCES**

14 For the purposes of this PEA, earth resources are defined as underlying geology, topography, and soils.
15 Topography describes the elevation and slope of the terrain, as well as other visible land features. Soils
16 are defined as the unconsolidated mineral and organic material on the immediate surface of the earth
17 that serves as a natural medium for the growth of plants. Soils are included in this PEA because
18 implementation of the CPs associated with the Proposed Action could impact soil resources within the
19 Mississippi Delta.

20 **3.3.1 Geology and Topography**

21 The 11 counties that are included in the Mississippi Delta CREP Agreement occur within two major land
22 resource areas (MLRAs). The majority of the land within the 11 counties is located in the Southern
23 Mississippi River Alluvium MLRA; however, the eastern most portion of the area occurs within the
24 Southern Mississippi Valley Loess MLRA. The specific geology and topography of each MLRA is described
25 below.

26 The Southern Mississippi River Alluvium MLRA stretches from southern Missouri and Kentucky south
27 along the Mississippi River through Tennessee, Arkansas, Mississippi, and Louisiana. The bedrock of the
28 Southern Mississippi River Alluvium is composed of Tertiary and Cretaceous sands formed as beach
29 deposits when the Cretaceous ocean retreated from the U.S. midsection. Deposits above the bedrock
30 were laid during flooding and lateral migration of the Mississippi River. Most of the sediments in the
31 area are sandy to clayey fluvial deposits from the Quaternary Period; however, some areas in the MLRA
32 contain deposits from the Holocene or Pleistocene Periods. Landforms in the area range from level or
33 depressional to very gently undulating alluvial plains, backswamps, oxbows, natural levees, and terraces.
34 Average elevations range from even with mean sea level (msl) in the southern portion of the MLRA to
35 330 feet above msl in the northwest. The maximum local relief is 15 feet, but is usually considerably
36 lower (NRCS 2006).

37 The Southern Mississippi Valley Loess MLRA stretches down the eastern side of the Mississippi River
38 through southern Illinois, Kentucky, Tennessee, and Mississippi, and in patches along the western side of

1 the River in Missouri, Arkansas, and Louisiana. This MLRA is underlain by unconsolidated sand, silt, and
 2 clay of mostly marine origin from the Tertiary Period. The area is mantled with loess from the
 3 Quaternary Period which was deposited during Mississippi River flooding, then picked up by wind and
 4 deposited in the higher areas on each side of the river valley. Valley sides in the MLRA are hilly to steep,
 5 and the intervening ridges are generally narrow and rolling, but in the upper reaches of the valley are
 6 broad and flat. Elevation ranges from 80 to 600 feet above msl. Local relief in the MLRA is mainly 10 to
 7 20 feet, but can be up to 80 to 165 feet (NRCS 2006).

8 **3.3.2 Soils**

9 The dominant soil orders in the Southern Mississippi River Alluvium are Alfisols, Vertisols, Inceptisols,
 10 and Entisols. The dominant soil orders in the Southern Mississippi Valley Loess are Alfisols, Entisols,
 11 Inceptisols, and Ultisols (NRCS 2006). A brief description of these soil orders is provided in Table 3.3-1.

Table 3.3-1 Soil Orders of the Mississippi Delta MLRAs	
Soil Order	Description
Alfisols	These soils occur in semiarid to moist areas. They result from weathering processes that leach clay minerals and other constituents out of the surface layer and into the subsoil, where they can hold and supply moisture and nutrients to plants. They form primarily under forest or mixed vegetative cover and are productive for most crops.
Vertisols	These soils have a high content of expanding clay minerals, and 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 profile. Vertisols transmit water very slowly and undergo little leaching. They tend to be fairly high in natural fertility.
Inceptisols	These soils occur in semiarid to humid environments that generally exhibit only moderate degrees of soil weathering and development. They have a wide range in characteristics and occur in a wide variety of climates.
Entisols	These soils show little or no evidence of pedogenic horizon development. They 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 flood plains.
Ultisols	These soils occur in humid areas. They formed from fairly intense weathering and leaching processes that result in a clay-enriched subsoil dominated by minerals such as quartz, kaolinite, and iron oxides. They are typically acid soils in which most nutrients are concentrated in the upper few inches, and these soils have a moderately low capacity to retain additions of lime and fertilizer.

12 *Source: NRCS 2013.*

13 **3.4 CULTURAL RESOURCES**

14 Cultural resources are prehistoric or historic sites, buildings, structures, objects, or other physical
 15 evidence of human activity or natural landscapes that are considered important to a culture or
 16 community for scientific, traditional, religious, or other reasons.

17 Section 106 of the National Historic Preservation Act of 1966, as amended, and as implemented by 36
 18 CFR Part 800, requires Federal agencies to consider the effects of their action on historic properties
 19 before undertaking a project. A historic property is defined as any cultural resource that is included in,
 20 or eligible for inclusion in, the National Register of Historic Places (NRHP). The NRHP, administered by
 21 the National Park Service, is the official inventory of cultural resources that are significant in American
 22 history, prehistory, architecture, archaeology, engineering, and culture.

1 All 11 counties within the Mississippi Delta CREP Area contain cultural resources that are included in or
 2 eligible for inclusion in the NRHP. Table 3.4-1 outlines these cultural resources for each county.

Table 3.4-1. Cultural Resources within the Mississippi Delta CREP Area				
County	Historic Districts	Historic Building or Structures	Historic Landmarks or Sites	Prehistoric Sites
Washington	4	13	1	2
Sharkey	0	1	0	4
Issaquena	0	1	0	3
Bolivar	3	9	1	0
Humphreys	0	0	0	5
Holmes	4	6	0	6
Yazoo	2	7	1	4
Coahoma	2	7	0	12
Sunflower	2	2	0	0
Leflore	8	13	3	14
Tallahatchie	0	4	0	5

3 *Source: NPS 2013.*

4 **3.5 RECREATION**

5 Recreation includes those outdoor activities that take place away from the residence of the participant.
 6 Mississippi offers a wide variety of recreational opportunities to its residents. Recreational activities that
 7 are common in Mississippi include hunting, fishing, wildlife viewing, camping, golfing, canoeing,
 8 horseback riding, boating, hiking, and biking (MDWFP 2013a). For this PEA, recreation focuses on
 9 hunting, fishing, and wildlife viewing opportunities available to the public in the Mississippi Delta
 10 portion of Mississippi.

11 Hunting and fishing in Mississippi are regulated by MDWFP. MDWFP establishes hunting seasons and
 12 bag limits for game species and catch limits for fish species. MDWFP also controls the distribution of
 13 hunting and fishing licenses throughout the state.

14 Game that can be hunted in Mississippi include deer, turkey, and various small game and migratory
 15 birds. Small game that can be hunted in the state include squirrel, rabbit, quail, frog, raccoon, opossum,
 16 and bobcat. Migratory game birds in Mississippi include Canada, snow, blue, white-fronted, and Ross
 17 geese; white-winged and mourning doves; teals; sora, Virginia, clapper, and king rails; moorhens;
 18 gallinules; crows; snipe; brant; ducks; mergansers; coots; and woodcock (MDWFG 2013b). Wildlife
 19 Management Areas (WMAs) in Mississippi provide the public with opportunities to hunt on lands with
 20 high quality habitats throughout the state. Overall, there are 50 WMAs in Mississippi that occupy over
 21 665,000 acres. Twelve of these WMAs occur within the 11 counties that are eligible for the Mississippi
 22 Delta CREP (MDWFG 2013b).

23 Fishable freshwater species in Mississippi include redear; bluegill; longear; warmouth; green sunfish;
 24 white and black crappie; largemouth, smallmouth, and spotted black bass; shadow bass; walleye;
 25 sauger; yellow perch; hybrid striped, striped, white, and yellow bass; and redfin, grass, and chain
 26 pickerel. The Mississippi Public Waters Program contains 119 lakes and 123,000 stream miles that are
 27 available to the public for fishing throughout the state (MDWFG 2013c).

1 3.6 SOCIOECONOMICS

2 For the purposes of this PEA, socioeconomics includes investigations of farm and non-farm employment,
 3 income, and farm production expenses and returns. Data that is presented in this section is for the 11
 4 counties listed in the Mississippi Delta CREP Agreement. These 11 counties are considered the region of
 5 influence (ROI) for this socioeconomics analysis. Most of the data used for the socioeconomic analysis is
 6 derived from the U.S. Census Bureau (USCB) and the National Agricultural Statistical Service (NASS).
 7 These datasets are collected every ten and five years, respectively. The data used in this section
 8 represents the most current, publically-available data. Of note is that the 2012 Census of Agriculture is
 9 currently being conducted and 2012 data was not available at the time of this writing.

10 3.6.1 Non-Farm Employment and Income

11 Table 3.6-1 shows data for the non-farm, civilian labor force within the ROI. The civilian labor force
 12 within the ROI comprises 102,029 individuals. Non-farm employment provided an estimated 96,626 jobs
 13 in the ROI in 2011 (USCB 2013). Unemployment rates within the ROI vary by county, but are all higher
 14 than Mississippi as a whole. Median household income within the ROI was substantially lower than that
 15 of Mississippi (\$38,718), and ranged from a low of \$22,259 in Holmes County to a maximum of \$29,451
 16 in Sharkey County (USCB 2013).

Area	Civilian Labor Force	Non-Farm Employment	Unemployment Rate (%)	Median Household Income (\$)
Bolivar	15,567	14,782	16.3	27,173
Coahoma	10,671	10,182	15.7	26,050
Holmes	7,365	7,077	20.1	22,259
Humphreys	3,873	3,315	19.7	25,730
Issaquena	620	510	21.8	22,396
Leflore	12,142	11,670	19.1	22,353
Sharkey	1,990	1,799	17.3	29,451
Sunflower	10,654	9,803	19.9	27,042
Tallahatchie	5,624	5,155	16.8	27,092
Washington	22,376	21,682	20.5	28,591
Yazoo	11,147	10,651	20.0	27,979
Mississippi	1,345,129	1,309,958	10.0	38,718

17 *Source: USCB 2013.*

18 3.6.2 Farm Employment and Income

19 In 2007, there were 7,543 farm workers on 3,846 farms within the ROI. In 2007, 2,886 farms within the
 20 ROI had sales of less than \$250,000, classifying them as small farms, while 960 farms had sales over
 21 \$250,000, classifying them as large farms. Realized net farm income was \$256 million in 2007 within the
 22 ROI. Total government payments to farms within the ROI totaled approximately \$117 million in 2007.

1 Government payments showed an approximate 45 percent increase from 2002 when farms in the ROI
 2 received \$80.7 million in government payments (NASS 2013).

3 **3.6.3 Farm Production Expenses and Returns**

4 Table 3.6-2 displays labor expenses, total production expenses, and labor as a percent of total
 5 production expenses for farms in the ROI for 2002 and 2007. In 2007, total farm production expenses
 6 were approximately \$1.16 billion within the ROI, which was an increase of 43.3 percent from 2002 (\$812
 7 million). Based on 2007 acreage in active farm production (5.5 million acres), the average cost per acre
 8 within the ROI was \$210.54. Using 2007 cropland, the cost per acre of agricultural chemical inputs was
 9 \$27.80 (NASS 2013).

Table 3.6-2. Farm Labor as a Percentage of Total Production Expenses								
Area	2002				2007			
	Hired Farm Labor Expenses (\$000)	Contract Labor Expenses (\$000)	Total Production Expenses (\$000)	Labor as a Percent of Total Production Expenses (\$000)	Hired Farm Labor Expenses (\$000)	Contract Labor Expenses (\$000)	Total Production Expenses (\$000)	Labor as a Percent of Total Production Expenses (\$000)
Bolivar	10,452	548	102,745	10.7%	12,739	635	164,933	8.1%
Coahoma	8,855	311	83,460	11.0%	10,334	366	117,220	9.1%
Holmes	3,500	198	40,164	9.2%	3,261	135	52,131	6.5%
Humphreys	10,004	985	79,904	13.8%	8,205	720	97,807	9.1%
Issaquena	2,530	309	22,333	12.7%	1,667	205	28,588	6.5%
Leflore	12,867	317	102,151	12.9%	14,682	(D)	155,733	9.4%*
Sharkey	4,337	425	42,847	11.1%	6,575	210	69,093	9.8%
Sunflower	15,646	1,988	112,772	15.6%	14,296	2,364	166,196	10.0%
Tallahatchie	4,209	229	50,175	8.8%	5,883	267	78,003	7.9%
Washington	10,272	879	93,120	12.0%	11,378	649	139,517	8.6%
Yazoo	6,816	449	82,890	8.8%	7,224	559	95,245	8.2%
Total	89,488	6,638	812,561	12%	96,244	6,110	1,164,466	9%

10 Source: NASS 2013.

11 Note: * Percentage calculated only from Hired Farm Labor.

12 (D) = Data withheld to avoid disclosing data for individual farms.

13 Table 3.6-3 shows information on 2007 per farm expenses and profits by county. On average, farms in
 14 the ROI were profitable in 2007; per farm average net income (profit) was \$78,943. Returns on
 15 investment averaged 22 cents of profit per dollar of expense.

Area	Per Farm Production Expense (\$)	Per Farm Net Income (\$)	Net Income Per \$ of Expenditure
Bolivar	383,565	91,790	0.24
Coahoma	449,118	118,044	0.26
Holmes	93,761	12,184	0.13
Humphreys	459,178	65,624	0.14
Issaquena	274,883	70,063	0.25
Leflore	526,126	85,631	0.16
Sharkey	606,079	132,461	0.22
Sunflower	449,178	116,325	0.26
Tallahatchie	159,842	35,033	0.22
Washington	403,229	115,424	0.29
Yazoo	142,582	25,797	0.18
ROI Average	358,868	78,943	0.22

Source: NASS 2007.

1
2 Table 3.6-4 shows the average value of land and buildings and the average value of machinery and
3 equipment per farm within each of the counties in the ROI. The largest farms are in Issaquena County,
4 but the most valuable farms in the ROI are located in Bolivar County. Though Issaquena County farms
5 are the largest in the ROI, they have the lowest land and building value in the ROI. Bolivar County also
6 has much higher values in machinery than the other counties in the ROI.

Area	Average Farm Size (Acres)	Average Value of Land and Buildings (\$ per Farm)	Average Value of Machinery and Equipment (\$ per Farm)
Bolivar	996	854,328,000	138,833,000
Coahoma	1,160	545,743,000	80,924,000
Holmes	410	382,281,000	45,403,000
Humphreys	914	329,261,000	60,521,000
Issaquena	1,165	209,312,000	26,465,000
Leflore	1,064	538,887,000	95,270,000
Sharkey	1,676	280,659,000	44,853,000
Sunflower	1,021	657,466,000	100,953,000
Tallahatchie	647	482,791,000	75,886,000
Washington	964	596,398,000	110,316,000
Yazoo	532	601,061,000	76,610,000

Source: NASS 2013.

3.7 ENVIRONMENTAL JUSTICE

EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, requires a Federal agency to “make achieving environmental justice part of its mission by identifying and addressing as appropriate, disproportionately high human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.” A minority population can be defined by race, by ethnicity, or by a combination of the two classifications.

1 According to CEQ, a minority population can be described as being composed of the following groups:
2 American Indian or Alaska Native, Asian or Pacific Islander, Black, not of Hispanic origin, or Hispanic and
3 exceeding 50 percent of the population in an area or the minority population percentage of the affected
4 area is meaningfully greater than the minority population percentage in the general population (CEQ
5 1997). The USCB defines ethnicity as either being of Hispanic origin or not being of Hispanic origin.
6 Hispanic origin is further defined as “a person of Cuban, Mexican, Puerto Rican, South or Central
7 America, or other Spanish culture or origin regardless of race” (USCB 2001).

8 Each year the USCB defines the national poverty thresholds, which are measured in terms of household
9 income and are dependent upon the number of persons within the household. Individuals falling below
10 the poverty threshold are considered low-income individuals. USCB census tracts where at least 20
11 percent of the residents are considered poor are known as poverty areas (USCB 1995). When the
12 percentage of residents considered poor is greater than 40 percent, the census tract is considered an
13 extreme poverty area.

14 The ROI includes the 11 counties within the Mississippi Delta CREP Agreement.

15

1 **3.7.1 Demographic Profile**

2 Table 3.7-1 shows the demographic breakdown for each county eligible for the Mississippi Delta CREP
 3 and for Mississippi as a whole. The population within the Mississippi Delta CREP ROI is predominately
 4 Black or African American (175,841), followed by White (73,493). Within the ROI, the largest minority is
 5 Black or African American persons (175,841), followed by Hispanic perons (4,656), and Asian persons
 6 (1,128).

Table 3.7-1. Demographic Profile of CREP Area

Geographic Area	Demographic Category							Total Population
	White Count (Percent)	Black or African American Count (Percent)	American Indian or Alaska Native Count (Percent)	Asian Count (Percent)	Native Hawaiian or Pacific Islander Count (Percent)	Two or More Races Count (Percent)	Hispanic Count (Percent)	
Bolivar	11,342 (32.8)	22,737 (65.7)	50 (0.1)	182 (0.5)	0 (0)	209 (0.6)	84 (0.2)	34,592
Coahoma	6,092 (23.1)	19,839 (75.2)	46 (0.2)	134 (0.5)	0 (0)	180 (0.7)	107 (0.4)	26,376
Holmes	3,163 (16.3)	16,050 (82.9)	30 (0.2)	10 (0.1)	0 (0)	71 (0.4)	14 (0.1)	19,372
Humphreys	2,317 (24.4)	7,138 (75.1)	9 (0.1)	0 (0)	0 (0)	32 (0.3)	170 (1.8)	9,504
Issaquena	638 (35.0)	1,187 (65.0)	0 (0)	0 (0)	0 (0)	0 (0)	4 (0.2)	1,825
Leflore	8,678 (26.5)	23,364 (71.4)	199 (0.6)	215 (0.7)	12 (0)	132 (0.4)	751 (2.3)	32,706
Sharkey	1,347 (28.7)	3,331 (71.0)	2 (0.0)	5 (0.1)	0 (0)	7 (0.1)	27 (0.6)	4,692
Sunflower	7,845 (26.1)	21,891 (72.8)	27 (0.1)	116 (0.4)	17 (0.1)	25 (0.1)	407 (1.4)	30,074
Tallahatchie	6,723 (44.0)	8,338 (54.6)	31 (0.2)	119 (0.8)	8 (0.1)	35 (0.2)	1,207 (7.9)	15,279
Washington	14,271 (27.6)	36,186 (70.0)	125 (0.2)	271 (0.5)	0 (0)	456 (0.9)	575 (1.1)	51,665
Yazoo	11,077 (39.2)	15,770 (55.8)	98 (0.3)	76 (0.3)	0 (0)	537 (1.9)	1,310 (4.6)	28,238
Mississippi	1,767,875 (59.8)	1,094,596 (37.0)	13,775 (0.5)	25,807 (0.9)	579 (0)	31,426 (1.1)	75,626 (2.6)	2,956,700

7 Source: USCB 2013.

8 Note: The sum of all races does not equal the total population in the Census Tract since people can claim more than one race.

1 In 2007, there were 60,331 farm operators running 41,959 farms in Mississippi. Within the Mississippi
 2 Delta CREP ROI there were 3,486 farms run by 5,492 farm operators of which: 4,465 were White; 821
 3 were Black or African American; and 26 were American Indian or Alaska Native (NASS 2007). Minority
 4 operators accounted for 15 percent of all the farm operators within the ROI.

5 **3.7.2 Income and Poverty**

6 Table 3.7-2 shows median household income, population, and poverty rates for the ROI and for
 7 Mississippi. All counties in the ROI have significantly higher poverty rates than Mississippi as a whole. By
 8 virtue of having a poverty rate greater than 20 percent, the entire ROI meets the Census definition of a
 9 low-income area.

Table 3.7-2. Median Income, Population, and Poverty Levels within the Mississippi Delta CREP ROI				
Area	Median Income	Population	Population Below Poverty	% Below Poverty
Bolivar	27,173	32,475	11,319	34.6
Coahoma	26,050	25,806	9,601	37.2
Holmes	22,259	18,650	8,040	43.2
Humphreys	25,730	9,340	3,923	42.0
Issaquena	22,396	1,484	594	40.0
Leflore	22,353	30,500	12,316	40.4
Sharkey	29,451	4,565	1,651	36.2
Sunflower	27,042	25,318	8,039	31.8
Tallahatchie	27,092	12,968	4,251	32.8
Washington	28,591	50,742	18,245	36.0
Yazoo	27,979	24,721	7,958	32.2
Mississippi	38,718	2,860,440	617,805	21.6

10 Source: USCB 2013.

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1 **CHAPTER 4 ENVIRONMENTAL CONSEQUENCES**

2 This chapter describes the potential environmental consequences to the resources described in Chapter
3 3. As discussed in Section 2.3, six resource areas (traffic and transportation, noise, human health and
4 safety, air quality, coastal zones, and other formally classified lands) have been eliminated from
5 consideration in this PEA because impacts would be negligible. Therefore, environmental consequences
6 analyses include biological resources, water resources, earth resources, cultural resources,
7 socioeconomics, and environmental justice.

8 **4.1 BIOLOGICAL RESOURCES**

9 Impacts to biological resources would be considered significant if implementation of the proposed
10 Agreement resulted in the reduction of wildlife or fisheries populations to a level of concern, removal of
11 land with unique vegetation characteristics, or incidental take of protected species or habitat.

12 **4.1.1 Proposed Action**

13 ***Wildlife***

14 Associated with improved habitat conditions, wildlife diversity in the proposed CREP Area would
15 increase from implementation of the CPs. In comparison to the existing conditions on most of the
16 eligible cropland, wildlife habitats and wildlife diversity would benefit after establishment of each CP.

17 The proposed CREP Area would provide critical habitat for the Louisiana black bear, which has been
18 listed as Federally threatened under ESA, and the endangered Least tern. Habitat would also be created
19 for migratory waterfowl, shorebirds, and wading birds during the winter and spring months. The CREP
20 would improve water quality, which would be beneficial for the alligator gar, the paddlefish, and several
21 Federally endangered species: sheepsnose mussel, snuffbox mussel, fat pocketbook mussel, rabbitsfoot
22 mussel, and the pallid sturgeon.

23 Wildlife would benefit primarily from establishment of permanent wildlife habitat (CP22-Riparian Buffer
24 and CP31-Bottomland Timber Establishment on Wetlands) and wetland restoration (CP23). Overall, up
25 to 8,000 acres of habitat would be created or improved from the implementation of the Proposed
26 Action.

27 Increased wildlife populations, especially passerine and water birds and deer, would potentially enhance
28 the socioeconomic value of agricultural lands for hunting, wildlife watching, and other outdoor
29 recreational activities. However, the benefits would not be realized until a period after implementation
30 of the proposed CREP because of the time required for development of vegetation and travel corridors.
31 Restricting ground and vegetative disturbing CP implementation and maintenance to the periods
32 recommended by NRCS or other technical service providers in accordance with the site specific
33 conservation plan would ensure minimal impacts on native species.

34 Fisheries in the proposed CREP Area would benefit from reduced levels of nutrient and sediment loading
35 to surface waters from common agricultural activities. Lower nutrient concentrations in the streams
36 would improve fish and invertebrate community health, as well as stream quality. All CPs under the

1 Proposed Action would directly and indirectly enhance terrestrial or aquatic habitats in the CREP Area
2 and downstream. Wetland restoration would create habitats that are critical for amphibian
3 reproduction and provide habitat for other species dependent on these systems (USEPA 2001). The
4 proposed CPs would remove, sequester, or transform nutrients, sediments, and other pollutants from
5 agricultural runoff by intercepting pollutants before they reach surface waters, increasing infiltration,
6 increasing nutrient uptake by vegetation, and maintaining microbial processes that reduce pollution in
7 water bodies through denitrification (Welsch 1991).

8 ***Vegetation***

9 The goals of Mississippi Delta CREP would be accomplished by implementing established CRP practices
10 in the target geography. These practices include Riparian Forest Buffer (CP22), Wetland Restoration
11 (CP23), and Bottomland Hardwood Timber Establishment on Wetlands (CP31).

12 The CPs proposed for implementation under the Mississippi Delta CREP Proposal would contribute to
13 vegetation diversity in the CREP Area. In particular, establishment of riparian forest buffer and
14 bottomland hardwood timber (CP22 and CP31) and wetland restoration (CP23) would benefit vegetation
15 resources in the CREP Area. These efforts would stimulate the development of natural vegetative
16 communities in the wetland areas and adjacent uplands.

17 Additionally, establishment of native plant communities would help to reduce occurrences of invasive
18 and exotic plant species. Invasive and exotic plants generally thrive in disturbed areas. Intact natural
19 environments, such as those that would be created under the CREP, are least vulnerable to
20 establishment of non-native species. The contract maintenance would include management measures
21 to prevent invasive and exotic plants from reducing the success of planting efforts. Elimination of
22 invasive and exotic plants from the CREP Area would help to ensure that the Mississippi CREP Proposal
23 goals are being cost-effectively accomplished. Vegetation restoration would increase biodiversity and
24 improve water quality throughout the eligible lands proposed for enrollment.

25 ***Special Status Species***

26 Implementation of the Mississippi CREP Proposal would have positive impacts on protected species and
27 their habitats. Benefits to special status terrestrial species would be less in the short-term, but would be
28 realized over time as the vegetative communities develop.

29 Implementation of the Mississippi CREP Proposal would potentially have positive impacts on the
30 protected species from the establishment of permanent native vegetation through the implementation
31 of CPs to establish riparian forest buffer (CP22), bottomland hardwood timber establishment (CP31),
32 and restore wetlands (CP23). Additional forest (up to 5,340 acres) and wetlands (up to 2,660 acres)
33 habitat would benefit numerous wildlife species, by replacing agricultural lands with natural habitats. As
34 stated, BHF habitat is critical to the success of the Louisiana black bear, and re-establishment of native
35 vegetation communities would benefit the other special-status species as well, both directly and
36 indirectly.

37 There is the potential for negative impacts to special status species from the implementation of the
38 Proposed Action. Establishment of CPs would include a level of surface disturbance that includes

1 grading, leveling, filling, and construction of some infrastructure. These actions would be temporary in
2 nature and would have short-term negative impacts in the form of disturbance to any special status
3 species in the vicinity of the action. Informal consultation with Mississippi’s USFWS Ecological Field
4 Office would occur as necessary as part of the site-specific environmental evaluation prior to program
5 enrollment.

6 **4.1.2 No Action Alternative**

7 Under the No Action Alternative, the Mississippi Delta CREP would not be implemented. Lands that
8 would have been eligible for enrollment in CREP would remain in agricultural production or would be
9 enrolled in CRP or another conservation program. The continued use of land for agriculture or the
10 conversion of land to another type of agricultural production would increase susceptibility for additional
11 loss of wildlife habitat, habitat for special status species, and invasion by exotic species. Runoff of
12 agricultural chemicals, animal wastes, and sediment would continue to degrade water quality and
13 habitat for native plants and animals. Additionally, agricultural lands that have been farmed for long
14 periods lack the critical components required for regeneration of native plant communities (seed banks,
15 microorganisms, and nutrients).

16 **4.2 WATER RESOURCES**

17 Impacts to water resources would be considered significant if implementation of the Proposed Action
18 resulted in degraded surface or ground water quality, or filling of wetlands without appropriate
19 mitigation.

20 **4.2.1 Proposed Action**

21 Enrolling land in CREP and installing CPs (wetland restoration, riparian buffer restoration, bottomland
22 timber restoration and filter strips) would reduce the application of agricultural chemicals (pesticides
23 and fertilizers) in the CREP Area, and reduce erosion and sedimentation, ultimately improving surface
24 water quality, and improving wetland habitat. The Agreement would have long-term beneficial impacts
25 to wetlands and water resources within the Mississippi River tributary basin and areas downstream. The
26 Agreement would not result in the violation of laws or regulations established to protect wetlands and
27 water resources.

28 ***Groundwater***

29 Enrollment in the CREP would provide increased protection of ground water resources from
30 contamination by agricultural chemicals, nutrients, and pathogens by installing conservation measures
31 that reduce point and non-point source pollution. Restoring natural vegetation would typically allow for
32 an increase in groundwater recharge.

33 ***Surface Water***

34 Surface water volumes may slightly decrease as restored areas and wetlands typically “store” water.
35 There would be no significant change in surface water volume.

36

1 **Water Quality**

2 The Agreement would improve overall water quality. The decrease in active agricultural production
3 would result in a decreased input of agricultural chemicals to nearby surface waters and groundwater
4 sources. In addition, establishing long-term forests and native vegetation would stabilize soils,
5 decreasing erosion and sedimentation which improves local and downstream water quality.

6 **Wetlands**

7 Implementation of CPs such as wetland restoration and increasing riparian buffers is expected to restore
8 or enhance wetlands and riparian habitat. The positive impacts of restoring wetlands and riparian areas
9 would have corresponding positive impacts on biological resources including increasing vegetation
10 diversity and habitat for protected species, which use and live in these areas (see Section 3.1 for
11 additional discussion on impacts to Biological Resources). Activities associated with installing CPs such as
12 vegetation clearing and soil disturbance could result in temporary and minor localized negative impacts
13 to water quality and increased sedimentation from runoff. As with the current FSA procedures, a site
14 specific environmental evaluation would be performed and a conservation plan developed prior to
15 enrollment in the program. The evaluation would identify jurisdictional wetlands and establish any
16 necessary mitigation measures to ensure their protection.

17 **4.2.2 No Action Alternative**

18 Under the No Action Alternative, the Mississippi Delta CREP would not be implemented. Lands that
19 would have been eligible for enrollment in CREP would remain in agricultural production or would be
20 enrolled in CRP or another conservation program. The continued use of land for agriculture or the
21 conversion of land to another type of agricultural production would continue demand for groundwater
22 and surface water for agricultural needs. Runoff of agricultural chemicals, animal wastes, and sediment
23 would continue to degrade water quality and habitat for native plants and animals. Any of the beneficial
24 impacts from the implementation of CPs, such as reduced erosion, need for chemical inputs, or
25 restoration of wetlands and BHF would not be realized.

26 **4.3 EARTH RESOURCES**

27 Impacts to earth resources would be considered significant if implementation of the Proposed Action
28 resulted in increased erosion and sedimentation, or greatly affected topographical or unique soil
29 conditions.

30 **4.3.1 Proposed Action**

31 Under the Proposed Action, long-term positive impacts to earth resources are expected to occur with
32 the implementation of any of the three proposed CPs outlined in the Mississippi Delta CREP Agreement.
33 Removing agricultural lands from production and establishing permanent cover would stabilize soils and
34 have indirect benefits to water quality by reducing soil erosion and sedimentation caused by typical
35 agricultural practices. During implementation of any of the CPs, there would be potential for minor,
36 increased erosion from any tillage, planting, or earthmoving activities required. However, once the CPs
37 are established long-term beneficial impacts to soils would occur from establishment of permanent
38 cover (over the course of the 14 to 15 year contract) and removing the need to work the soil for

1 agricultural purposes. Establishment of permanent cover would largely entail BHF and wetlands.
2 Management activities during the life of the CP contract would have only minor impacts to soils,
3 depending on the management activities used. There would only be the potential for minor impacts to
4 topography if earth moving and grading were required. There would be no impacts to the underlying
5 geology of the region; installation of the CPs would not disturb soils deeper than those previously
6 disturbed for agricultural production.

7 **4.3.2 No Action Alternative**

8 Under the No Action Alternative, FSA would not implement the Agreement; therefore, earth resources
9 in the Mississippi Delta would remain unchanged.

10 Under the No Action Alternative, the Mississippi Delta CREP would not be implemented. Lands that
11 would have been eligible for enrollment in CREP would remain in agricultural production or would be
12 enrolled in CRP or another conservation program. The continued use of land for agriculture or the
13 conversion of land to another type of agricultural production would continue required tillage and
14 potential for erosion and sedimentation impacts. Runoff laden with sediment would continue to
15 degrade water quality and habitat for native plants and animals. Any of the beneficial impacts from the
16 implementation of CPs, such as reduced erosion from reduced tillage or establishment of permanent
17 native vegetation would not be realized.

18 **4.4 CULTURAL RESOURCES**

19 Impacts to cultural resources would be considered significant if any culturally important resources were
20 permanently altered or destroyed from the implementation of the Mississippi Delta CREP.

21 **4.4.1 Proposed Action**

22 The Proposed Action would occur on previously tilled cropland; therefore, the cultural resources
23 included in or eligible for inclusion in the NRHP within the CREP Area would not be impacted. It is
24 unlikely that unknown cultural resources would be impacted under the Proposed Action because areas
25 that could be enrolled in the CREP have been under cultivation and installation of CPs would not disturb
26 soils deeper than those previously disturbed for agricultural production. In addition, a site-specific
27 evaluation would occur prior to enrollment of any land in CREP that would include evaluation of cultural
28 resources. Consultation with the State Historic Preservation Officer would occur as appropriate if FSA
29 environmental staff determined there was a potential to encounter an archaeological resource at a
30 specific location. In accordance with FSA policy, acres would not be accepted for enrollment if an impact
31 to cultural resources is expected. Therefore, the Proposed Action would have no impact to cultural
32 resources in the Mississippi Delta.

33 **4.4.2 No Action Alternative**

34 Under the No Action Alternative, the Mississippi Delta CREP would not be implemented. Lands that
35 would have been eligible for enrollment in CREP would remain in agricultural production or would be
36 enrolled in CRP or another conservation program. Use of land for agricultural purposes would continue.
37 No impacts to cultural resources would be introduced from the No Action Alternative.

1 **4.5 RECREATION**

2 Impacts to recreation would be considered significant if they drastically reduced, increased, or removed
3 available public lands designated for recreation or significantly degraded the quality of the recreation.
4 Impacts to environmental conditions such as air, water, or biological resources within or near public
5 recreational land in such a way to affect its use would also be considered significant.

6 **4.5.1 Proposed Action**

7 During establishment of the CPs, there would be short-term negative impacts to local fish and game
8 species due to implementation activity. However, once the CPs are established, there would be higher
9 quality hunting, fishing, and wildlife viewing opportunities in the Mississippi Delta over the long-term
10 because of the potential 8,000 acres of improved wildlife habitat and improvements in water quality in
11 waterways adjacent to properties enrolled in CREP. Therefore, the Proposed Action would have long-
12 term, beneficial impacts to wildlife-related recreational resources in the Mississippi Delta.

13 **4.5.2 No Action Alternative**

14 Under the No Action Alternative, the Mississippi Delta CREP would not be implemented. Lands that
15 would have been eligible for enrollment in CREP would remain in agricultural production or would be
16 enrolled in CRP or another conservation program. Any of the beneficial impacts to game species from
17 improved natural habitat would not be realized under the No Action Alternative.

18 **4.6 SOCIOECONOMICS**

19 Significance of an impact to socioeconomics varies depending on the setting of the Proposed Action, but
20 40 CFR 1508.8 states that indirect effects may include those that are growth inducing and others related
21 to induced changes in the pattern of land use, population density, or growth rate. Under CEQ
22 regulations, a socioeconomic impact, in and of itself, does not indicate that preparation of an EIS is
23 warranted. However, a socioeconomic impact can contribute to the overall cumulative impacts of a
24 project.

25 The economic impacts associated with the CRP and the approved CPs have been outlined in other NEPA
26 documents for USDA, namely the 2003 EIS for CRP and the 2010 Supplemental EIS for the 2008 Farm Bill
27 changes to CRP (USDA 2003, 2010).

28 **4.6.1 Proposed Action**

29 Implementation of the Proposed Action would have minor impacts to socioeconomics within the ROI,
30 given the immense amount of acreage eligible for CREP enrollment and the small amount of land that
31 has funding for enrollment. The Proposed Action could remove up to 8,000 acres of agricultural land
32 from production within the ROI, approximately 0.17 percent of the total land within the ROI, and only
33 0.32 percent of the cultivated cropland in the ROI. While this represents a very small percentage of the
34 total agricultural land, removing it from agricultural practice would also remove all cost inputs to that
35 land such as labor, agricultural chemicals, seed, and energy. Removing the land could have an adverse
36 effect on the suppliers of those inputs. Agricultural supply companies could see a very minor reduction
37 in purchase of goods and there is the potential for a loss of some agricultural jobs within the ROI due to

1 a lack of demand for farm labor. Given the extremely small percentage of agricultural land targeted,
2 adverse impacts would likely be negligible, but if CREP enrollment is heavy in an area that is dependent
3 on farm production, the local economy could be impacted.

4 Over the life of the Mississippi Delta CREP, an approximate total of up to \$17.8 million of Federal and
5 state funds would be paid to producers that enroll their lands. Economic impacts of the Mississippi Delta
6 CREP would depend largely on what enrolling producers do after enrollment. If enrolled producers
7 maintain a similar level of local expenditures, there would likely be slightly beneficial impacts, as this
8 money would be injected into the local economy.

9 There is the potential of increased recreational use of enrolled lands for wildlife related recreation, such
10 as hunting and wildlife viewing (see Section 4.5 for additional discussion on impacts to Recreation).
11 Improvement of wildlife habitat may lead to expenditures in recreation related goods such as hunting
12 supplies, gas, and lodging. In addition, letting land fallow can allow for soil to re-enrich, which could
13 lengthen the sustainable economic life for which the land remains viable for production.

14 There is also potential that removal of land from production may raise crop prices due to a reduced local
15 supply; this possibility could lead to either a beneficial or adverse outcome. Higher crop prices may
16 induce local producers to increase production, which could lead to improved economic activity and
17 employment. Also, the income of producers would likely increase on a revenue per acre basis. For
18 consumers of food however, higher crop prices can be detrimental. Consumers might be induced to
19 substitute local produce for cheaper food or, if substitutes are not chosen, the disposable income of
20 local residents may be reduced by higher food costs and expenditures on non-food items may decline.
21 However, given the extremely small amount of cropland that would be removed, these impacts are
22 highly unlikely.

23 Beneficial and adverse impacts from implementation of the Mississippi Delta CREP would likely vary
24 significantly based on the location and size of enrollments. Socioeconomic analysis associated with CRP
25 (USDA 2003, 2010) noted that local economies tend to shift to accommodate the implementation of
26 CPs; a shifting economy could reduce the magnitude of any adverse financial impacts, but could also
27 reduce the productive capacity of some communities via increased rates of depreciation on farming
28 equipment and a decrease in farm related skill among local labor forces. Since enrollment in
29 conservation programs is voluntary, it has been noted that producers would not enroll land that is more
30 economically beneficial to them if under production. Typically, land that is enrolled in CPs is land that
31 has been marginal for production, where annual rental payments and applicable incentive payments
32 would exceed the net revenue of that land if it were kept in production (USDA 2003).

33 **4.6.2 No Action Alternative**

34 Under the No Action Alternative, the Mississippi Delta CREP Agreement would not be implemented.
35 Funding for retiring agricultural lands would remain limited to what could be generated locally in other
36 conservation programs. None of the potentially beneficial economic impacts (increased recreational
37 benefits, injection of funds to the local economy, etc.) would be realized under the No Action
38 Alternative.

1 **4.7 ENVIRONMENTAL JUSTICE**

2 Environmental justice is achieved when everyone, regardless of race, culture, or income, enjoys the
3 same degree of protection from environmental and health hazards and has equal access to the decision-
4 making process. Significant environmental justice impacts would result if access to decision-making
5 documents was denied or if any adverse environmental effects occurred that would disproportionately
6 affect minority or low-income populations.

7 **4.7.1 Proposed Action**

8 Implementation of the Proposed Action would incentivize agricultural producers to voluntarily remove
9 agricultural lands from production. Producers would be under no obligation to enroll any lands and the
10 program would be undertaken on a completely voluntary basis. Nearby low-income and minority
11 communities may be adversely affected by the decisions of producers. Since producer's decisions would
12 have effects that spread beyond the boundaries of their farms into the economies of nearby
13 communities, the livelihoods of environmental justice populations could be affected. The potential for
14 impacts would be greater if there were large areas of CREP enrollment in low income population areas,
15 specifically in Holmes, Humphreys, Issaquena, and Leflore Counties, where poverty rates are over 40
16 percent. The potential for minor positive and minor negative disproportionate impacts to low income
17 populations exists, but would depend on where enrolled producers are located in relation to the low
18 income populations. These impacts are unlikely given the small amount of cropland that could be
19 enrolled in the Mississippi Delta CREP.

20 The decision-making document (this PEA) was made available to all interested parties and the public via
21 the Internet and within local FSA offices. In addition, a public meeting was held to provide information
22 on the proposed Mississippi Delta CREP Agreement and the potential impacts associated with
23 implementation.

24 **4.7.2 No Action Alternative**

25 Under the No Action Alternative, the proposed Mississippi Delta CREP would not be implemented. and
26 that would have been eligible for enrollment in CREP would remain in agricultural production or would
27 be enrolled in CRP or another conservation program. No disproportionate impacts to minority
28 populations or impoverished areas would be anticipated.

1 **CHAPTER 5 CUMULATIVE IMPACTS AND IRREVERSIBLE AND**
2 **IRRETRIEVABLE COMMITMENT OF RESOURCES**

3 **5.1 CUMULATIVE IMPACTS**

4 CEQ regulations stipulate that the cumulative impacts analysis within an Environmental Assessment
5 should consider the potential environmental impacts resulting from “the incremental impacts of the
6 action when added to past, present, and reasonably foreseeable future actions regardless of what
7 agency or person undertakes such other actions” (40 CFR 1508.7). Recent CEQ guidance in considering
8 cumulative impacts involves defining the scope of the other actions and their interrelationship with the
9 Proposed Action. The scope must consider geographical and temporal overlaps among the Proposed
10 Action and other actions. It must also evaluate the nature of interactions among these actions.

11 Cumulative impacts are most likely to arise when a relationship or synergism exists between the
12 Proposed Action and other actions expected to occur in a similar location or during a similar time period.
13 Actions overlapping with or in proximity to the Proposed Action would be expected to have more
14 potential for a relationship than those more geographically separated.

15 The affected environment for cumulative impacts in this PEA includes those counties where lands are
16 eligible for enrollment in CREP: Washington, Sharkey, Issaquena, Bolivar, Humphreys, Holmes, Yazoo,
17 Coahoma, Sunflower, Leflore, and Tallahatchie Counties. For the purposes of this analysis, the goals and
18 plans of Federal programs designed to mitigate the risks of degradation of natural resources are the
19 primary sources of information used in identifying past, present, and reasonably foreseeable actions.

20 **5.2 PAST, PRESENT, AND REASONABLY FORESEEABLE ACTIONS**

21 In addition to the proposed CREP, Mississippi maintains and implements numerous Federal programs
22 authorized under the Farm Bill to conserve and enhance the natural resources of the area. These
23 programs include CRP, Environmental Quality Incentive Program (EQIP), Wetland Reserve Program
24 (WRP), and Wildlife Habitat Incentive Program (WHIP). Though not authorized by the Farm Bill, USFWS –
25 Partners for Fish and Wildlife is another Federal program designed for conservation. Several state and
26 non-profit programs are also available and include Mississippi Private Lands Habitat Program, MDWFP
27 Waterfowl Program, and the Mississippi Forest Stewardship Program, among numerous others.

28 **Conservation Reserve Program.** The CRP is the largest private land environmental conservation
29 program. This voluntary program supports the implementation of long-term conservation measures
30 designed to improve the quality of ground and surface waters, control soil erosion, and enhance wildlife
31 habitat on environmentally sensitive agricultural land. Landowners can receive annual rental and
32 maintenance payments, incentive payments, and cost-share support for the establishment of
33 conservation measures.

34 **Environmental Quality Incentive Program – Ground and Surface Water Conservation Program.** The
35 EQIP supports production agriculture and environmental quality as compatible goals. The program
36 offers technical and financial assistance to producers and ranchers who face serious threats to soil,
37 water, and related natural resources.

1 **Wetland Reserve Program.** The WRP is a voluntary program which provides technical and financial
2 assistance to landowners who enhance wetlands and retire marginal agricultural lands. Under this
3 program, lands can be enrolled in permanent conservation easements, 30-year conservation easements,
4 or restoration cost-share agreements.

5 **Wildlife Habitat Incentive Program.** This program offers opportunities to private and Tribal landowners
6 to improve and protect wildlife habitat. Through the program, the NRCS provides technical and financial
7 assistance to landowners to develop upland, wetland, riparian, and aquatic habitat areas on their
8 property.

9 **USFWS – Partners for Fish and Wildlife.** This program restores riparian, wetland, and associated upland
10 habitat on private land through alliances with USFWS, other agencies, and non-profit organizations.

11 **Mississippi Private Lands Habitat Program.** Wildlife biologists provide habitat management advice to
12 private landowners helping achieve wildlife management objectives. This includes site visits to the
13 property by the biologist and habitat recommendations specific to the individual property. When
14 possible, biologist also help land owners identify opportunities and obtain cost-share assistance to
15 conduct prescribed management practices.

16 **MDWFP Waterfowl Program.** This program is dedicated to improving waterfowl habitat and hunting
17 opportunities on public and private lands throughout Mississippi. Free technical guidance is provided on
18 private lands for landowners that are interested in effective wetland management and attracting
19 waterfowl.

20 **Mississippi Forest Stewardship Program.** This program promotes natural resource planning on private,
21 non-industrial forest lands. Landowners currently not under forest management are encouraged to
22 utilize stewardship management through the development and implementation of a Forest Stewardship
23 Management Plan, which is based on sound management principles designed to restore and protect
24 forest resources and improve fish and wildlife habitat.

25 **5.3 CUMULATIVE EFFECTS ANALYSIS**

26 The incremental impacts of the Proposed Action, when considered in combination with other past,
27 present, and reasonably foreseeable actions, is expected to result in positive impacts to water, soils, and
28 biological resources. The following sections summarize the cumulative effects by resource area.

29 **Biological Resources.** Many of the conservation programs available within the proposed CREP Area have
30 a direct goal to protect and enhance wildlife habitat (CRP, WHIP, Partners for Fish and Wildlife,
31 Mississippi Private Lands Habitat Program, and MDWFP Waterfowl Program). The remaining
32 conservation programs would also have an indirect benefit to wildlife through the restoration of native
33 vegetation and enhancement of native habitat. The proposed Agreement would have similar goals and
34 impacts as these programs; cumulatively CREP and the other available conservation programs would
35 have long-term beneficial impacts to biological resources.

36 **Water Resources.** All of the conservation programs would have direct or indirect positive impacts to
37 water quality and quantity. The proposed Agreement would also result in improved water quality from

1 the reduction in chemicals application and stabilization of soils. Cumulatively, CREP and the other
2 conservation programs would have long-term beneficial impacts to water resources.

3 **Earth Resources.** Implementing conservation measures that would restore native vegetation and
4 wetlands would ultimately stabilize soils, thus reducing stormwater runoff and wind erosion potential.
5 The proposed Agreement would also have a goal of stabilizing soils and reducing erosion potential.
6 Cumulatively, CREP and the other conservation programs would have long-term beneficial impacts to
7 soils.

8 **Cultural Resources.** Cultural resources could be affected by conservation activities that result in ground
9 disturbance beyond that which was disturbed by agricultural practices. However, site-specific
10 environmental evaluation on lands to be enrolled in any of the conservation programs would identify
11 cultural resources of concern and develop a plan for avoiding or minimizing those potential impacts
12 through coordination with the State Historic Preservation Office or Tribal governments as necessary.
13 With the site-specific environmental evaluation and protection of important resources, negative
14 cumulative impacts are not anticipated.

15 **Socioeconomics.** The conservation programs listed above generally offer monetary compensation for
16 restoration or retirement of agricultural lands. The loss of agricultural lands may adversely affect the
17 local economy from a small decrease in the sale of agricultural products as well as an indirect impact to
18 farm equipment and supplies (seed, fertilizer, pesticides, and chemicals, etc.) and farm employment. For
19 CRP and CREP, there is also a county limitation for not enrolling more than 25 percent of a county's
20 cropland into conservation programs. Cumulative impacts to socioeconomics are not anticipated.

21 **Environmental Justice.** Enrollment in conservation programs is voluntary and the overall impacts are
22 beneficial. There are environmental justice populations in the ROI that may be adversely impacted
23 under certain circumstances. Cumulative impacts could occur if adverse impacts to environmental
24 justice populations become widespread, but given the small amount of acreage that would be enrolled,
25 that would not be expected.

26 **5.4 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES**

27 Irreversible and irretreivable commitments are related to the use of nonrenewable resources and the
28 effect that the use of these resources has on future generations. Irreversible effects primarily result
29 from the use or destruction of a specific resource that cannot be replaced within a reasonable time
30 frame. Irretreivable resource commitments involve the loss in value of an affected resource that cannot
31 be restored as a result of the action. The Mississippi Delta CREP Proposal would improve natural
32 resources, water resources, and wildlife habitat; there would be no irretreivable or irreversible resource
33 commitments.

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1 **CHAPTER 6** **MITIGATION MEASURES**

2 The purpose of mitigation is to avoid, minimize, or eliminate significant negative impacts on affected
3 resources. CEQ regulations (40 CFR 1508.20) state that mitigation includes:

- 4 • Avoiding the impact altogether by not taking a certain action or parts of an action.
- 5 • Minimizing impacts by limiting the degree or magnitude of the action and its
6 implementation.
- 7 • Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
- 8 • Reducing or eliminating the impact over time by preservation and maintenance operations
9 during the life of the action.
- 10 • Compensating for the impact by replacing or providing substitute resources or
11 environments.

12 CEQ regulations state that all relevant reasonable mitigation measures that could avoid or minimize
13 significant impacts should be identified, even if they are outside the jurisdiction of the lead agency or
14 the cooperating agencies. This serves to alert agencies or officials who can implement these extra
15 measures, and will encourage them to do so. The lead agency for this Proposed Action is FSA.

16 There are no expected long-term significant negative impacts associated with implementation of the
17 Agreement. Prior to installation of CPs, producers must complete site-specific environmental
18 evaluations which would reveal any protected resources on the property. In those site specific instances
19 where a wetland, threatened or endangered species, or a cultural resource may be present, consultation
20 with the appropriate lead agency would identify specific mitigation measures required to eliminate or
21 reduce the negative impacts to an acceptable level. In addition, each producer must prepare an
22 approved site-specific conservation plan to ensure protection of all valuable resources for the duration
23 of the contract (14 or 15 years).

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1 **CHAPTER 8 PERSONS AND AGENCIES CONSULTED**

2 USDA FSA National Office

3

4 **Other Federal Agencies, State Agencies, and Interested Parties**

5 The Nature Conservancy, Mississippi Chapter

6
7 Delta F.A.R.M.

8
9 Delta Wildlife

10
11 Mississippi Department of Environmental Quality

12
13 Natural Resources Conservation Service

14
15 FSA, County Offices

16
17 Mississippi Department of Wildlife, Fish, and Parks

18
19 U.S. Fish and Wildlife Service

20

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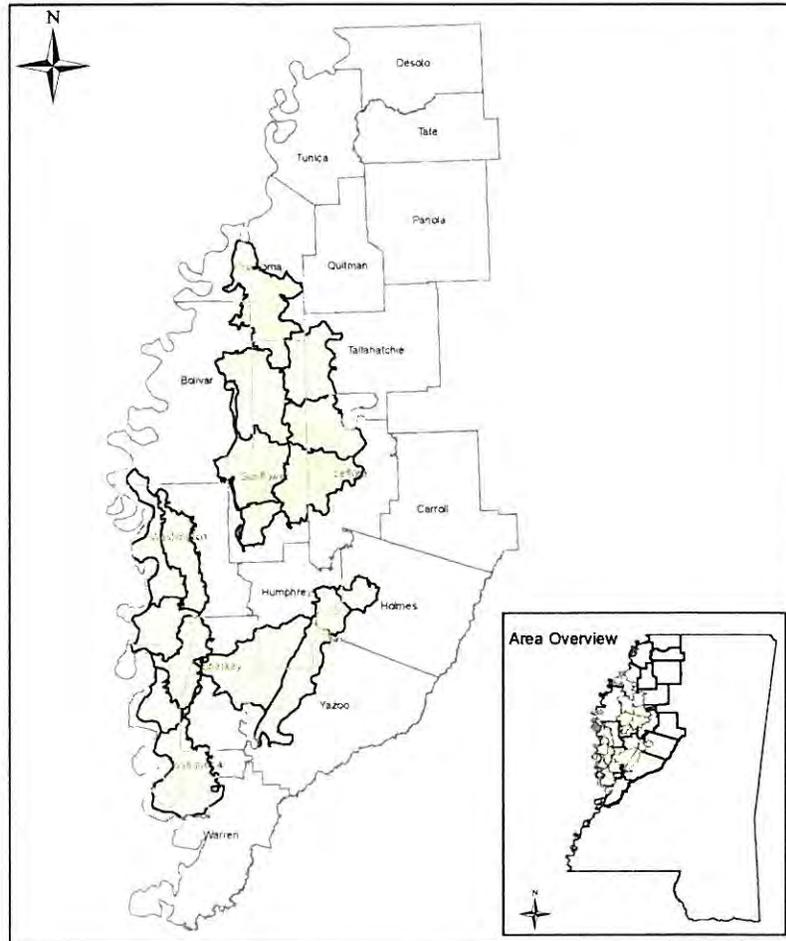
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APPENDIX A
MISSISSIPPI DELTA CONSERVATION RESERVE ENHANCEMENT PROGRAM
PROPOSED AGREEMENT

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*Modifications have been made to draft proposal text and project area

STATE OF MISSISSIPPI CONSERVATION RESERVE ENHANCEMENT PROGRAM



MS CREP PROJECT PROPOSAL

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DRAFT

MS CREP PROJECT

I. Abstract

The Lower Mississippi Alluvial Valley (LMAV), also known as the Delta, comprises more than 24 million acres and extends 500 miles from Cape Girardeau, Missouri, to southern Louisiana. This area once contained the largest expanse of bottomland hardwood forest (BHF) in the United States. Settlers began clearing the forested wilderness and establishing very large cotton plantations prior to the Civil War. Large-scale land clearing of frequently flooded areas occurred in the Delta beginning in the 1960s, with roughly one-third of the original BHF acreage converted to row-crop agriculture from 1950-1976. Only 4.9 million acres, just 23 percent, of this critical habitat remains, reduced to narrow, fragmented strips isolated principally in Arkansas, Louisiana and Mississippi. This project is primarily located in the Southern Mississippi Valley Alluvium Major Land Resource Area (MLRA) which includes portions of the following counties in the Mississippi Delta: Washington, Sharkey, Issaquena, Bolivar, Humphreys, Holmes, Yazoo, Coahoma, Sunflower, Leflore and Tallahatchie. The Mississippi Conservation Reserve Enhancement Program (MS CREP) project area is further defined to specific watershed sub-segments that have significant water quality impairments due to agricultural activities. In addition, these sub-segments span across a large portion of the Mississippi River Valley Alluvial Aquifer which has been significantly impacted with regards to water quantity due primarily to the demand from agricultural irrigation.

The MS CREP project will provide critical habitat for the Louisiana black bear (*Ursus americanus luteolus*), which has been listed as federally threatened under the terms of the Endangered Species Act and the endangered Least tern (*Sterna antillarum*). Habitat will also be created for migratory waterfowl, shorebirds and wading birds during the winter and spring months. The MS CREP will improve water quality and maintain water quantity, which will be beneficial for the Alligator gar (*Atractosteus spatula*), the Paddlefish (*Polyodon spathula*) and several federally endangered species: Sheepsnose mussel (*Plethobasus cyphus*), Snuffbox mussel (*Epioblasma triquetra*), Fat pocketbook mussel (*Potamilus capax*), Rabbitsfoot mussel (*Quadrula cylindrical*) and the Pallid sturgeon (*Scaphirhynchus albus*). The MS CREP project will also improve ground water recharge and maintain major drinking water sources for citizens within the project area by reducing non-point source impacts from agricultural run-off. The goals of the MS CREP project will be accomplished by implementing established Conservation Reserve Program (CRP) practices in the target geography. These practices include Riparian Forest Buffer (CP22), Wetland Restoration (CP23) and Bottomland Hardwood Timber Establishment on Wetlands (CP31).

II. Introduction

Prior to settlement, the Lower Mississippi Alluvial Valley (LMAV) was dominated by bottomland hardwood forests (BHF) in the basins formed along the waterways and tributaries of the Mississippi River. These forested wetlands once encompassed over 21 million acres throughout the LMAV. Disruption of hydrology and agricultural development has drastically

changed the landscape. Today, the extent of this once dominant habitat totals less than 4.9 million acres or 23% of the original extent across the LMA, with a mere 2% of Mississippi's original BHF remaining.

The vast BHF of the Mississippi Delta were supported by the floodplains of the Mississippi and Yazoo rivers. Hydrologic processes underlie the natural plant communities of the LMAV. Plant types and numbers can be attributed to the relatively flat landscape of the Mississippi Delta that has been exposed to combinations of: 1) extended periods of inundation during wet winter seasons; 2) confined areas of ponding due to precipitation throughout the year; 3) inundation from precipitation within the basin(s) throughout the year; 4) large scale backwater flooding from the Mississippi River due to headwater flood events.

Seasonal inundations deposited rich alluvial soil, contributing to the formation of the vegetation that noticeably distinguished the BHF of the Mississippi Delta from the upland forest of the hills to the east. The soils were derived from deposits of sand, silt, clay and calcareous sediments left behind by the meandering rivers in the basin. The Mississippi Delta BHF were dominated by deciduous trees such as oaks (*Quercus* sp.), gums (*Nyssa* sp.) and baldcypress (*Taxodium distichum*) which could tolerate frequent periods of inundation due to the hydrological fluctuations of the floodplain.

The new European populations found refuge along the natural levees that offered fertile, well-drained soils for agricultural fields. As populations became increasingly established, land clearing and hydrological alteration increased in intensity. Utilization of the river system and the introduction of the railroad made large-scale timber harvest possible in the late 1800s. Following the great flood of 1927, Congress authorized the Mississippi River Tributaries project. The U.S. Army Corps of Engineers engineered and built a variety of landscape-scale flood control measures including the construction of over 3,700 miles of levees along the Mississippi River and its tributaries.

Increased flood control and drainage coupled with technology further increased the acreage suitable for agricultural production. These issues eventually led to unsurpassed land clearing across the Mississippi Delta during the 1960s and 1970s corresponding with the spike in soybean prices. This resulted in a disproportional loss in BHF and its associated wetland habitats. Although in recent years some of these areas have been allowed to revert back to forest, the once vast expanse of BHF of the Mississippi Delta is now a mere shadow of its historic presence.

There are approximately 3,132,863 eligible acres for enrollment in the MS CREP with 1,667,345 acres located in the priority watersheds. This acreage includes Washington, Sharkey, Issaquena, Bolivar, Humphreys, Holmes, Yazoo, Coahoma, Sunflower, Leflore and Tallahatchie Counties in Mississippi. The project site is located in the Southern Mississippi Valley Alluvium Major Land Resource Area (MLRA) within the following watershed sub-segments, twelve digit Hydrologic Unit Codes (HUCs) of the Yazoo River Basin:

Big Sunflower River Watershed:

- 080302070300
- 080302070500
- 080302071700
- 080302070700

- 080302070400
- 080302071000
- 080302070600
- 080302070800

Deer Creek- Steele Bayou Watershed:

- 080302090400
- 080302090500
- 080302090300
- 080302090200
- 080302090600
- 080302090100

Upper Yazoo Watershed:

- 090302060900
- 080302060407
- 080302060406

Figure 1. Geographic Location of the MS CREP

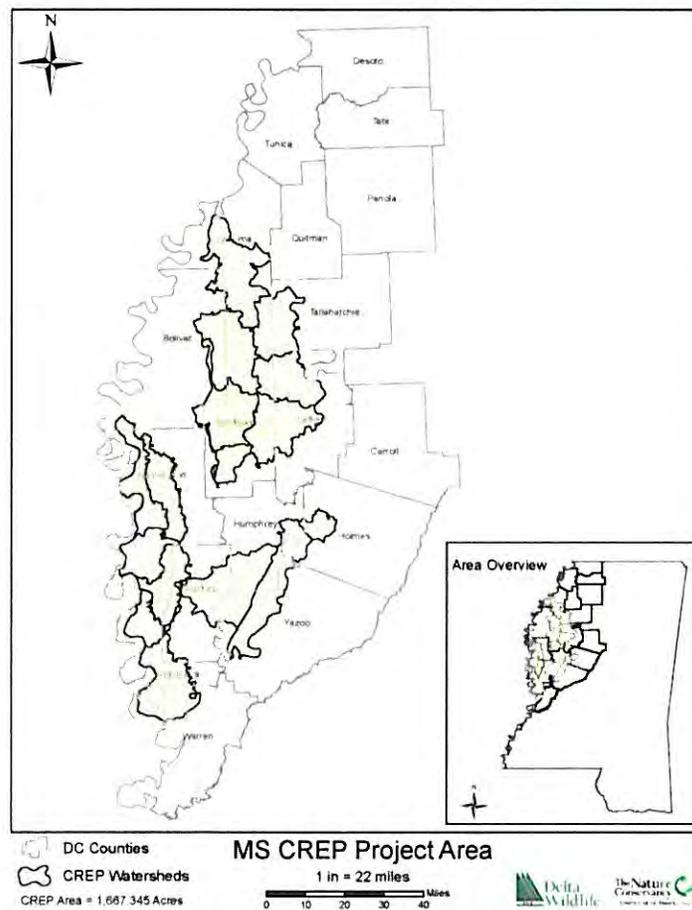


Figure 2. MS CREP Project Area

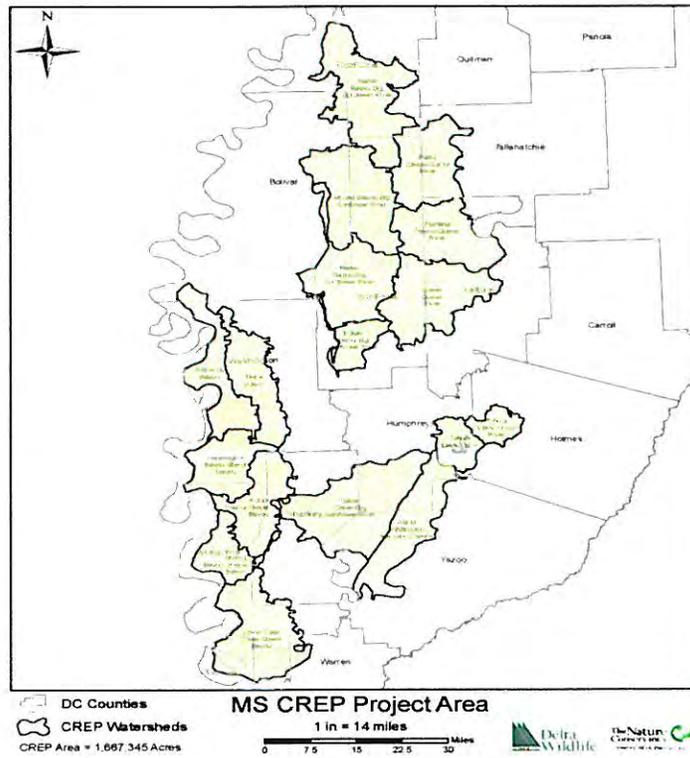
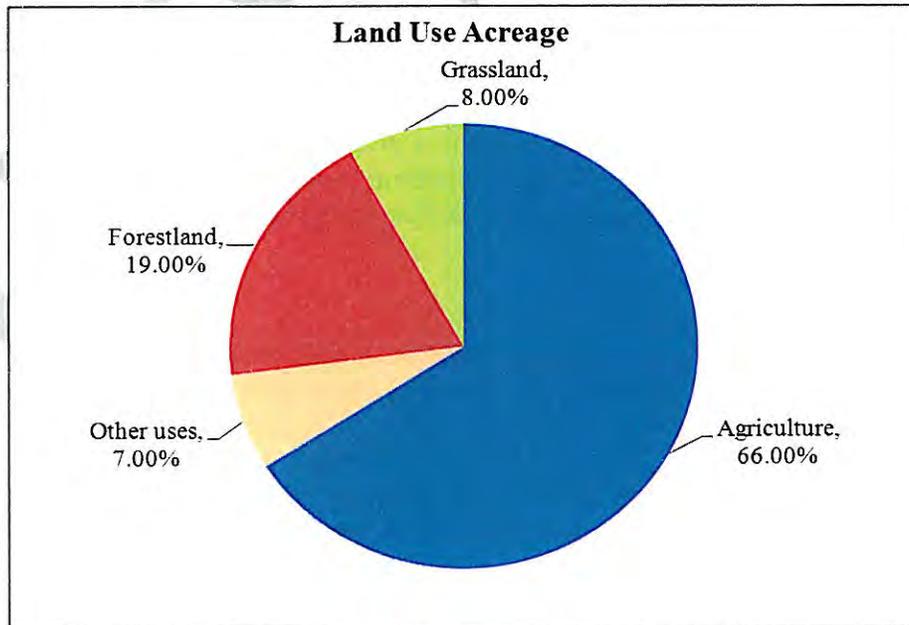


Figure 3. MS CREP - Acres by Land-Use



Source: County Profile, United States Department of Agriculture 2007 Census

The MS CREP project will provide critical habitat for the Louisiana black bear (*Ursus americanus luteolus*), which has been listed as federally threatened under the terms of the Endangered Species Act

and the endangered Least tern (*Sterna antillarum*). Habitat will also be created for migratory waterfowl, shorebirds and wading birds during the winter and spring months. . The MS CREP will improve water quality and maintain water quantity, which will be beneficial for the Alligator gar (*Atractosteus spatula*), the Paddlefish (*Polyodon spathula*) and several federally endangered species: Sheepsnose mussel (*Plethobasus cyphus*), Snuffbox mussel (*Epioblasma triquerta*), Fat pocketbook mussel (*Potamilus capax*), Rabbitsfoot mussel (*Quadrula cylindrical*) and the Pallid sturgeon (*Scaphirhynchus albus*). In addition, the MS CREP project will improve ground water recharge and maintain major drinking water sources for citizens within the project area by reducing non-point source impacts from agricultural runoff.

The goals of the MS CREP project will be accomplished by implementing established Conservation Reserve Program (CRP) practices in the target geography. These practices include Riparian Forest Buffer (CP22), Wetland Restoration (CP23) and Bottomland Hardwood Timber Establishment on Wetlands (CP31). Private landowners enrolled in the program will receive 120% of the soil rental rate per acre per year for 15 years, 50% cost-share and 40% PIP for all practices. State partners recommend that the standard \$100/acre (CP22 and CP31) and \$150/acre (CP23) SIP (Signing Incentive Payment) be increased to \$300/acre for all three practices.

III. Agricultural Related Environmental Impacts

Water Resources

- **Ground Water**

The Mississippi River Valley Alluvial Aquifer underlies the project area and is the principal source of ground-water supplies for agricultural irrigation. Most of the area is rural, with agricultural production the primary activity in the region. Withdrawals from the system for crop irrigation have caused water levels in the aquifer to decline as much as 90 feet in parts of the project area since the 1940s. In 2000, an estimated 830 Mgal/d (million gallons per day) were pumped from the aquifer with 70% (581 Mgal/d) used for irrigation. Wetland restoration activities proposed through the implementation of CP23 could help recharge the alluvial aquifer, leading to long-term benefits not only for agriculture, but for habitats and a sustainable drinking water source for current and future residents and visitors.

- **Surface Water**

The MS CREP project area lies within the Yazoo River Basin of Northwest Mississippi where there are 100 published TMDLs (total maximum daily loads) and 38 water bodies listed on the 2012 303d list. Impairments include, but are not limited to, sediment, nutrients, organic enrichment, low dissolved oxygen and biological impairments. Given the number of impaired water bodies, the Mississippi Department of Environmental Quality (MDEQ) has utilized a basin management approach that identifies and targets water quality problems and focuses efforts and funding on solving the issues.

As awareness and concern has increased over hypoxic conditions in the Gulf of Mexico due to nutrient inputs from the Mississippi River, the level of strategic planning and conservation implementation in the Yazoo River Basin has increased accordingly. In 2009, MDEQ and Delta F.A.R.M (Farmers Advocating for Resource Management) co-led the development of the Delta Nutrient Reduction Strategy. The process engaged 18 natural resource agencies/organizations and agricultural producers to develop a framework on which nutrient reductions could be attained and measured. A tiered monitoring

approach was implemented in key watersheds and over \$2 million in Environmental Protection Agency (EPA) 319h funds were utilized by MDEQ and Delta F.A.R.M. to initiate conservation practice implementation.

These initial efforts coincided with the announcement of the USDA-NRCS Mississippi River Basin Healthy Watersheds Initiative (MRBI). With a tiered monitoring network established, the MRBI provided a tremendous opportunity for large-scale conservation practice delivery through the Cooperative Conservation Partnership Initiative (CCPI) and the Wetland Reserve Enhancement Program (WREP).

The MS CREP project will implement conservation practices that would reduce sediment and nutrient runoff in priority water bodies that are being monitored for water quality improvements by resource partners. If efforts are concentrated in these watersheds, large-scale, measurable improvements could be attainable in the future.

IV. Existing Socio-Economic Conditions

Agricultural use comprises seventy-three percent of use in the targeted watersheds. Figure 4 provides a breakdown of specific crops, both irrigated and non-irrigated by county.

Figure 4: Cultivated Cropland

<i>Cultivated Cropland Breakdown by County</i>					
<i>County</i>	<i>Soybean Acreage</i>	<i>Cotton Acreage</i>	<i>Corn Acreage</i>	<i>Wheat Acreage</i>	<i>Rice Acreage</i>
<i>Coahoma</i>	86,570	80,627	39,725	30,116	11,649
<i>Tallahatchie</i>	105,463	43,614	22,675	18,006	8,619
<i>Sunflower</i>	124,926	66,450	35,827	32,544	31,525
<i>Bolivar</i>	175,870	58,151	56,518	49,843	46,760
<i>Leflore</i>	87,111	63,990	59,995	11,344	10,375
<i>Washington</i>	130,959	75,414	40,955	31,834	23,281
<i>Sharkey</i>	55,824	52,354	27,383	5,261	-
<i>Issaquena</i>	25,755	24,289	13,938	2,193	-
<i>Humphreys</i>	60,061	34,768	27,989	13,563	4,520
<i>Holmes</i>	34,879	27,253	24,358	13,304	2,970
<i>Yazoo</i>	83,531	40,501	27,206	7,370	5,369

Source: County Profile, United States Department of Agriculture 2007 Census

Utilizing information obtained from the United States Department of Agriculture’s 2007 Census, averages of agricultural production costs, gross income and returns after cost were computed.

The per-acre average values that were determined were applied to the designated acreage for the cultivated cropland in the project area (Figure 4). For each category of calculations, information was generated by counties, MLRAs, crops and irrigated/non-irrigated acres. The reader is advised that the Gross Income and Returns after Cost computations only reflect direct farm to market (elevator/gins) production cycles. The overall results of the computations suggest that based on 2007 estimates for the proposed areas, 43% of producers reported net losses from crop production while 56% reported net gains.

Comparing estimated negative returns to estimated positive returns indicates that, based on the assumptions of this analysis, a large portion of the producers operating in the project area are having significant economic problems. It is anticipated that implementing cropland retirement under the MS CREP would benefit these farmers financially. By enrolling marginal crop acreage into the MS CREP, landowners would benefit financially from both annual rental payments and incentive payments that they would receive.

The MS CREP will provide producers with long-term financial benefits extending beyond the life of the CREP contracts. Due to the large amount of acreage in agricultural crops, the MS CREP would help mitigate adverse agricultural impacts from herbicides, nutrients and sediment loads entering rivers, streams and lakes in the project area. By establishing buffers and wetlands, agricultural non-point source pollution will be reduced.

A. Population Trends

The project area is experiencing the population trends that parallel those of many other rural and agricultural areas, including the trend of larger farms being managed by fewer people (Figure 5). Improved technology for agricultural mechanization has resulted in less hand labor being required to produce a crop. This has led to a general decline in farm employment and rural populations, once dependent on agriculture to provide financial income. Conversely, many rural and outlying areas are now connected to major towns and cities by an improved infrastructure system of roads and highways. This has resulted in an increase in the number of people developing new communities in these areas to enjoy the benefits that a rural setting provides.

Figure 5: MS CREP Demographics

MISSISSIPPI CREP DEMOGRAPHICS											
	Coahoma	Tallahatchie	Sunflower	Bolivar	Leflore	Washington	Sharkey	Issaquena	Humphreys	Holmes	Yazoo
Total Population	25,913	15,318	29,296	33,771	31,861	50,406	4,892	1,392	9,312	18,818	27,886
Median Family Income	\$24,726	\$24,668	\$25,012	\$26,005	\$22,020	\$27,797	\$30,129	\$21,360	\$25,131	\$21,375	\$27,356
Farms (No.#)	261	488	370	430	296	346	114	104	213	556	668
Average Farm Size (Ac.)	1,160	647	1,021	996	1,064	964	1,576	1,165	914	410	532
Cropland Farms (No.#)	213	371	314	405	225	283	95	86	169	348	406
Livestock Farms (No.#)	48	117	56	25	71	63	19	18	44	208	262
Farm Operators (No.#) Race											
White	341	588	474	452	387	444	175	122	250	539	873
Black	42	55	62	143	32	77	15	24	54	226	91
American Indian	-	2	1	7	2	3	-	5	-	5	1
Farm Operators (No.#) Gender											
Females	33	66	27	31	39	37	14	11	17	118	98
Males	228	422	343	399	257	309	100	93	196	438	570

Source: U.S. Census of Agriculture Statistics, 2007.

B. Land Use and Agricultural Activities

Agriculture and agriculturally-related enterprises compromise a significant portion of the economy of the area. The MS CREP project area is approximately 3,132,863 acres in size and covers all or part of portions of eleven counties. Land use in the project area is primarily cropland; 2,318,319 acres (74%), forestland 493,740 acres (15.7%), grassland, 99,625 acres (3.2%), and other uses, 222,433 acres, (7%) (Figure3).

Of the estimated 3,132,863 acres in the project area, 2,318,319 acres are considered to be cultivated cropland, dedicated to the production of soybeans, cotton, corn, wheat, and rice. According to the 2007 U.S. Census, the cropland acres are further defined as: 1,154,633 irrigated, and 1,978,230 non-irrigated.

C. Environmental Factors

The MS CREP project area lies completely within the Southern Mississippi River Alluvium MLRA. The geographical distribution of the targeted area is shown in Figure 6. Ten soil survey map units occur within this targeted project area. These soils are shown in Figure 7, with similar soils grouped by common color and the map units with acreage and percent of total are listed in the following table:

Soil Map Units	Acres	Percent
alligator-sharkey-forestdale	541,826.61	32.70%
forestdale-dundee-sharkey	318,863.87	19.25%
dundee-forestdale-dubbs	157,900.16	9.53%
dundee-dubbs-sharkey	127,113.73	7.67%
commerce-sharkey-bowdre	42,736.95	2.58%
commerce-robinsonville-crevasse	42,357.98	2.56%
sharkey-alligator-tunica	13,737.21	0.83%
morganfield-adler-convent	3,903.57	0.24%
memphis-loring-collins	919.88	0.06%
memphis-natchez-collins	47.83	0.00%

Figure 6: Location of each MLRA within the MS CREP Project Area

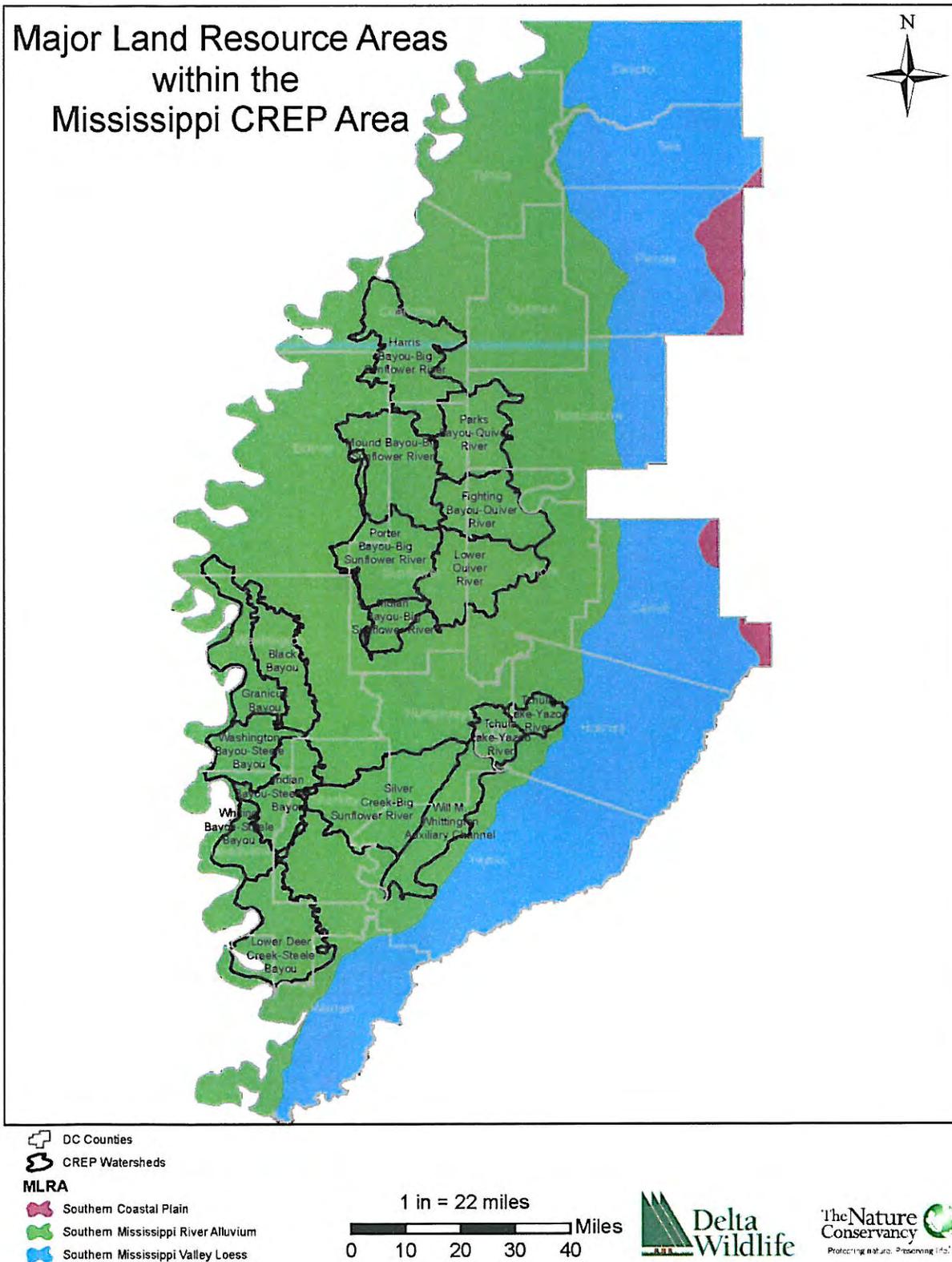
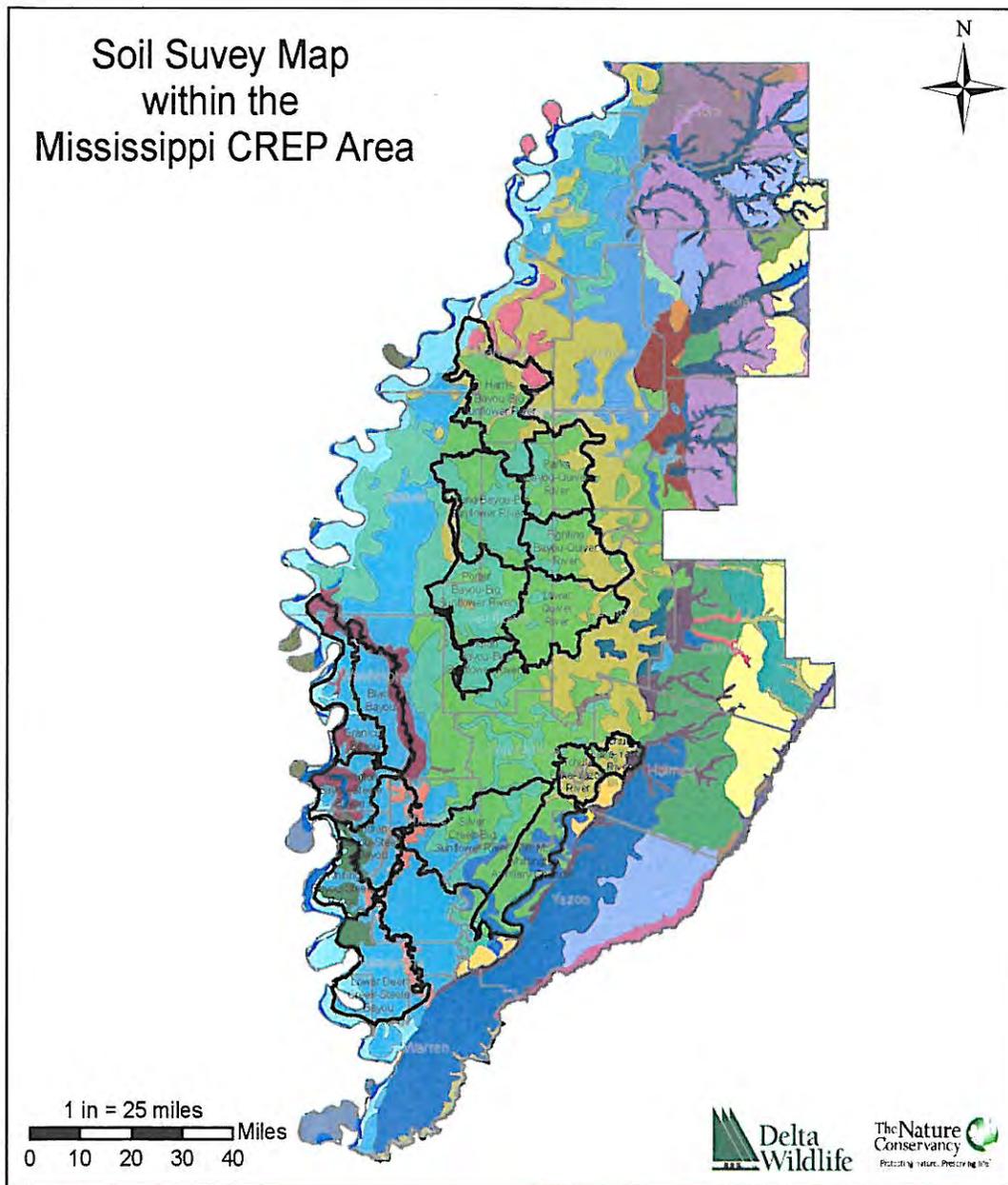


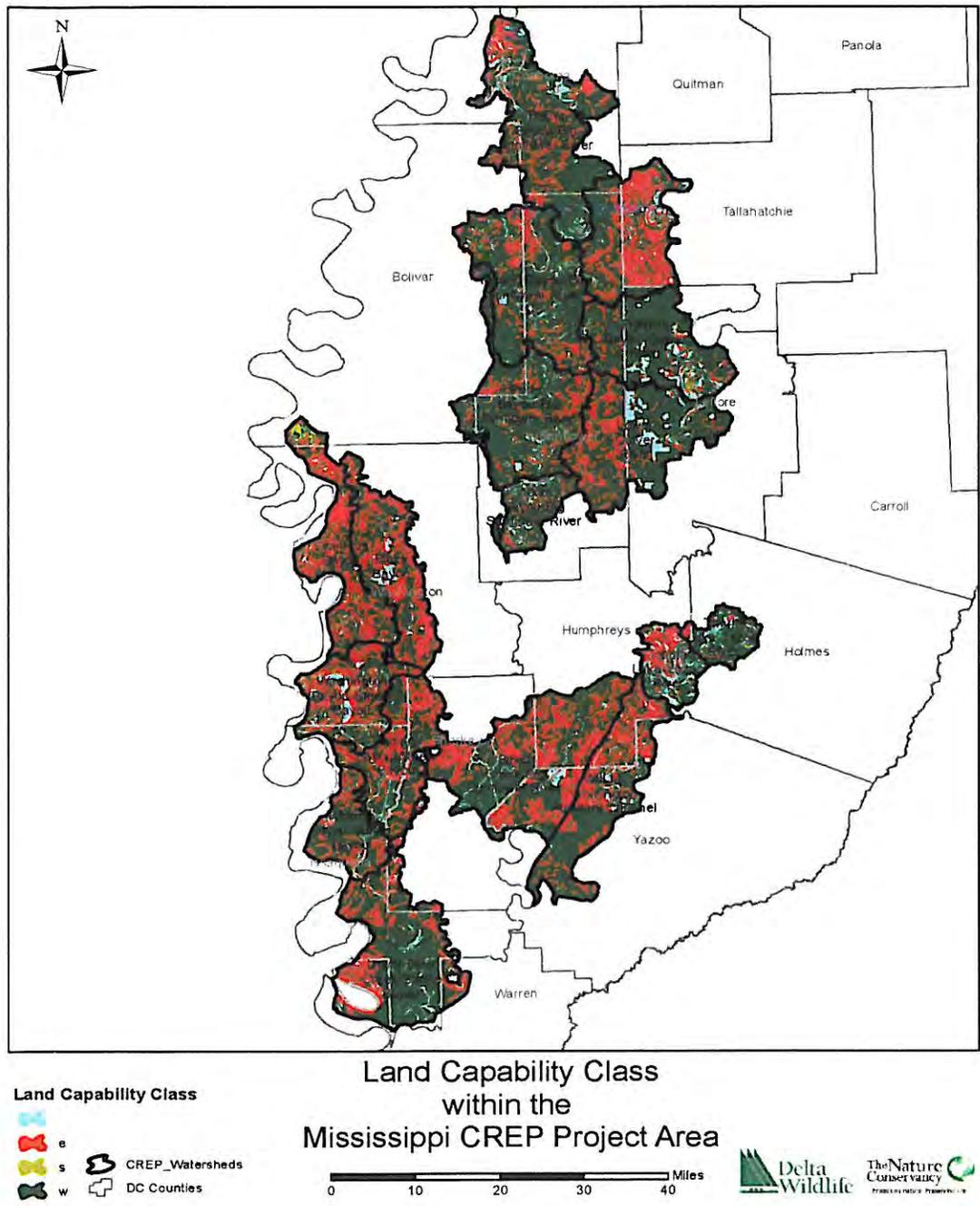
Figure 7: Soil Distribution within the MS CREP Project Area



CREP Watersheds	cheneby-arkabutia-cascilla	falaya-vicksburg-adler	memphis-loring-collins	sharkey-forestdale-dundee
Delta_Soils	collins-falaya-arkabutia	forestdale-alligator-sharkey	memphis-natchez-collins	sharkey-tunica-alligator
NAME	commerce-newellton-bruin	forestdale-dundee-sharkey	morganfield-adler-convent	sharkey-tunica-dundee
alligator-sharkey-dundee	commerce-robinsonville-crevasse	grenada-calloway-gillsburg	oaklimeter-ariel-gillsburg	smithdale-lexington-providence
alligator-sharkey-forestdale	commerce-sharkey-bowdre	loring-grenada-collins	providence-loring-collins	smithdale-lucy-ruston
ariel-morganfield-bruno	commerce-sharkey-fluvaquents	loring-grenada-smithdale	providence-memphis-loring	smithdale-providence-collins
arkabutia-cheneby-stough	dundee-askew-sharkey	loring-providence-grenada	robinsonville-commerce-bruno	water
arkabutia-collins-rosebloom	dundee-dubbs-sharkey	loring-riedown-memphis	sharkey-alligator-tunica	waverly-falaya-calhoun
arkabutia-gillsburg-collins	dundee-forestdale-dubbs	memphis-adler-loring	sharkey-bowdre-tunica	waverly-falaya-henry
bowdre-bruno-commerce	falaya-collins-waverly	memphis-collins-lucy	sharkey-crevasse-water	waverly-forestdale-calhoun

Land capability and drainage class are two additional ways that soils can be conveniently mapped and grouped for use and management. Drainage class is a group of soils defined as having a specific range in relative wetness under natural conditions as it pertains to wetness due to a water table under conditions similar to those under which the soil developed. The soils in the targeted project area, grouped by land capability and drainage classes, are shown in Figures 8 and 9.

Figure 8: Land Capability Subclasses for soils in the MS CREP Project Area



Soils can be grouped in several ways to aid in their use or interpretation. Figure 8 groups each soil map unit into a land capability subclass as defined in Agricultural Handbook 210 - Land-Capability Classification. This classification scheme groups soils according to their common responses to systems of management of common cultivated crops and pasture plants.

Figure 9: Drainage classification of the soil in the northern MS CREP Project Area

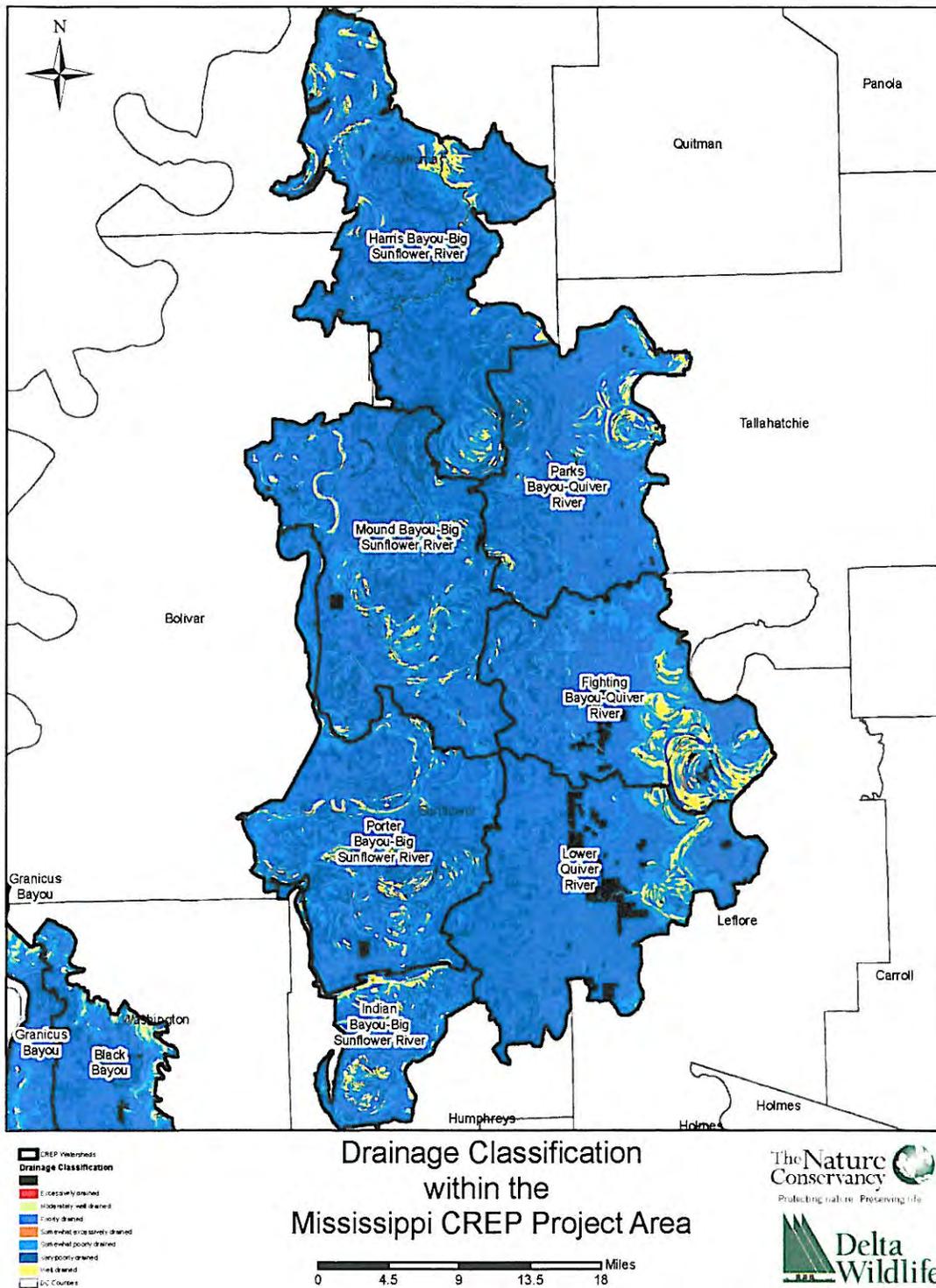
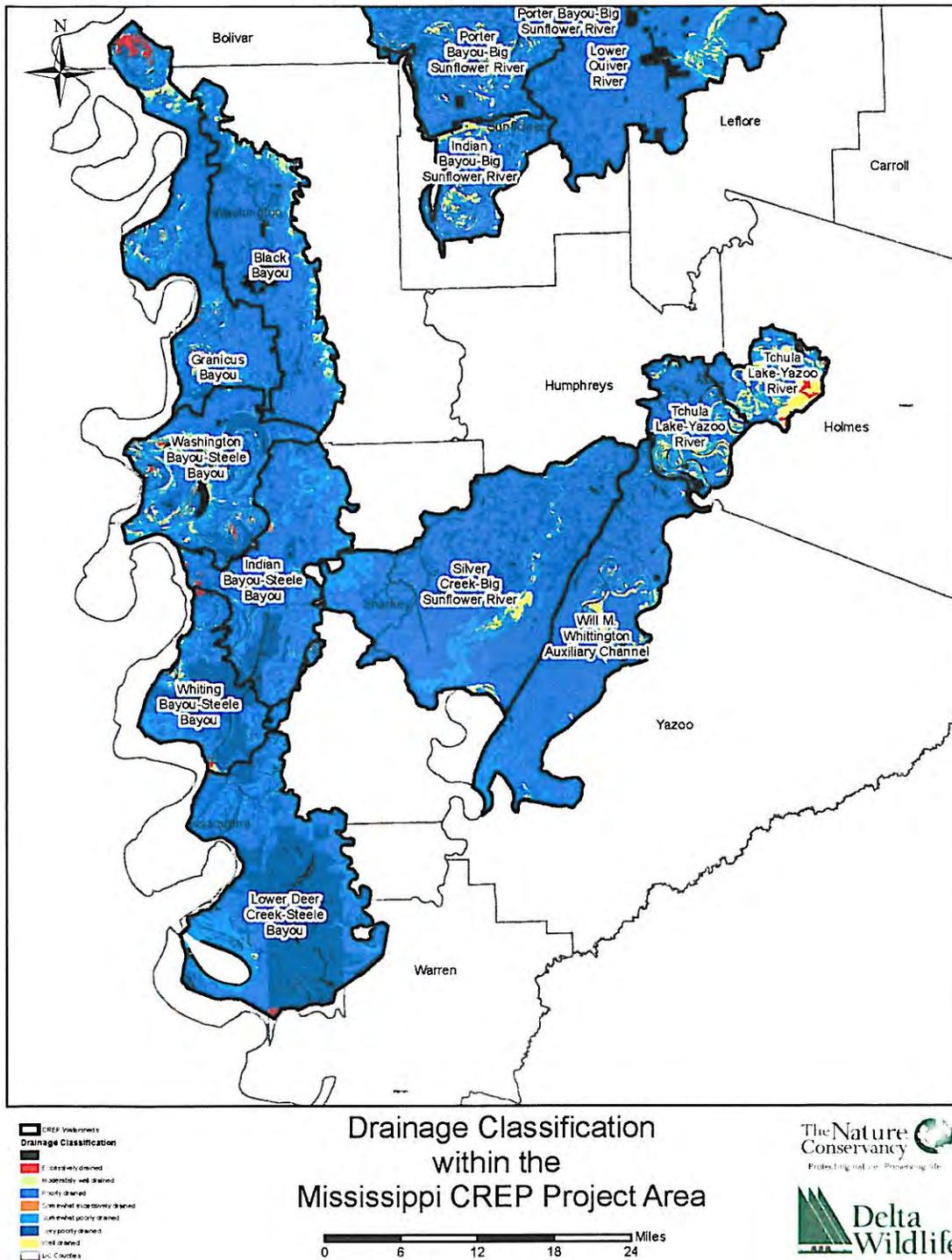
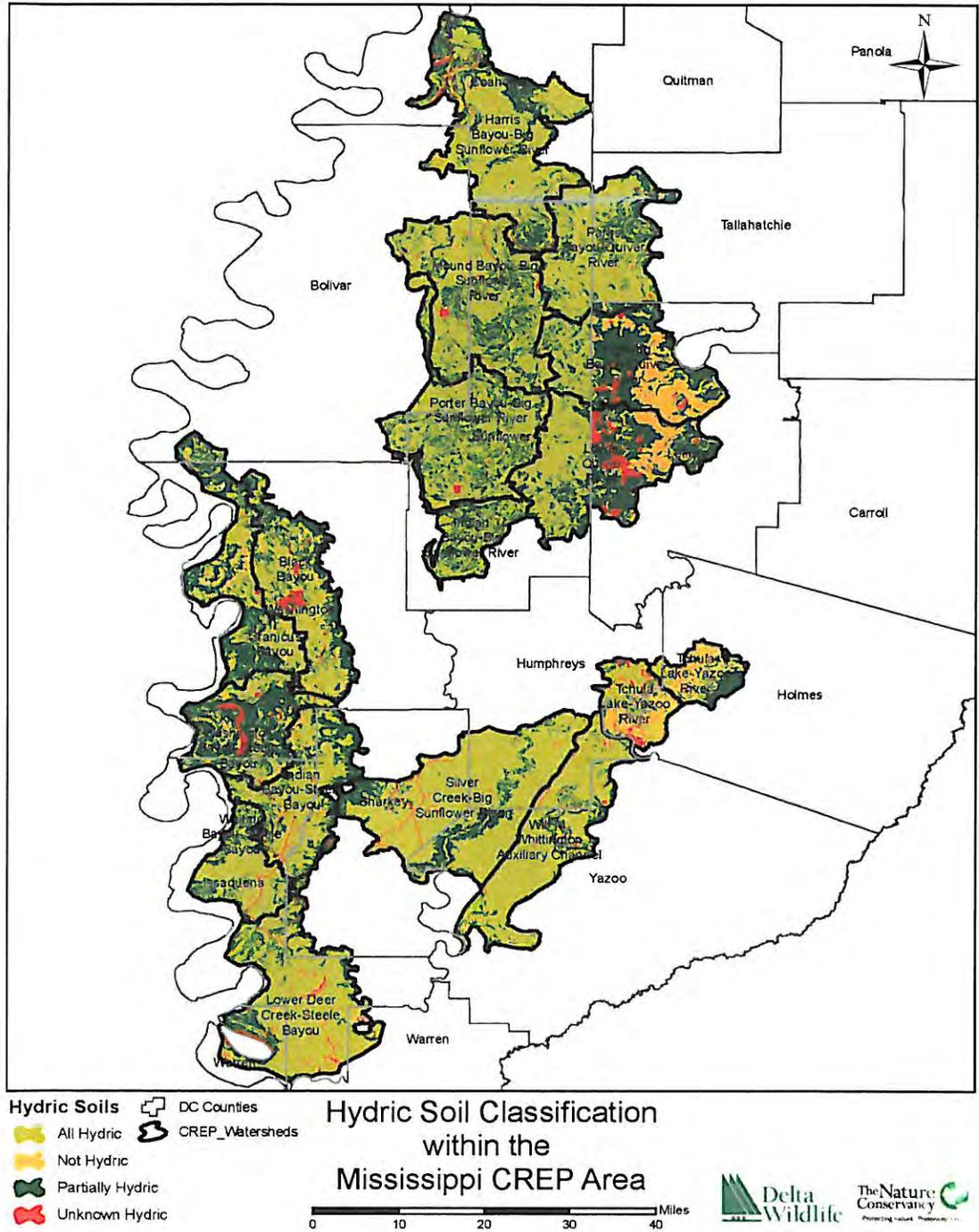


Figure 10: Drainage classification of the soil in the southern MS CREP Project Area



The occurrence of wetlands in an area greatly influences the use of that area. Soils are one of the three parameters used to classify wetlands, so the presence of hydric soils (Figure 11) has become a valuable “first indicator” of the possible presence of wetlands. The targeted watersheds consist of 1,032,992 acres of hydric soils, 485,842 acres of partially hydric soils, 84,521 acres non-hydric soils, and 52,767 acres unknown.

Figure 11: Location of hydric soils in the MS CREP Project Area.



Flooding is another important environmental occurrence that affects use and management of an area. Flooding frequency within the MS CREP project area is shown in Figure 12 and 13.

Figure 12: Flooding Frequency within the northern MS CREP Project Area

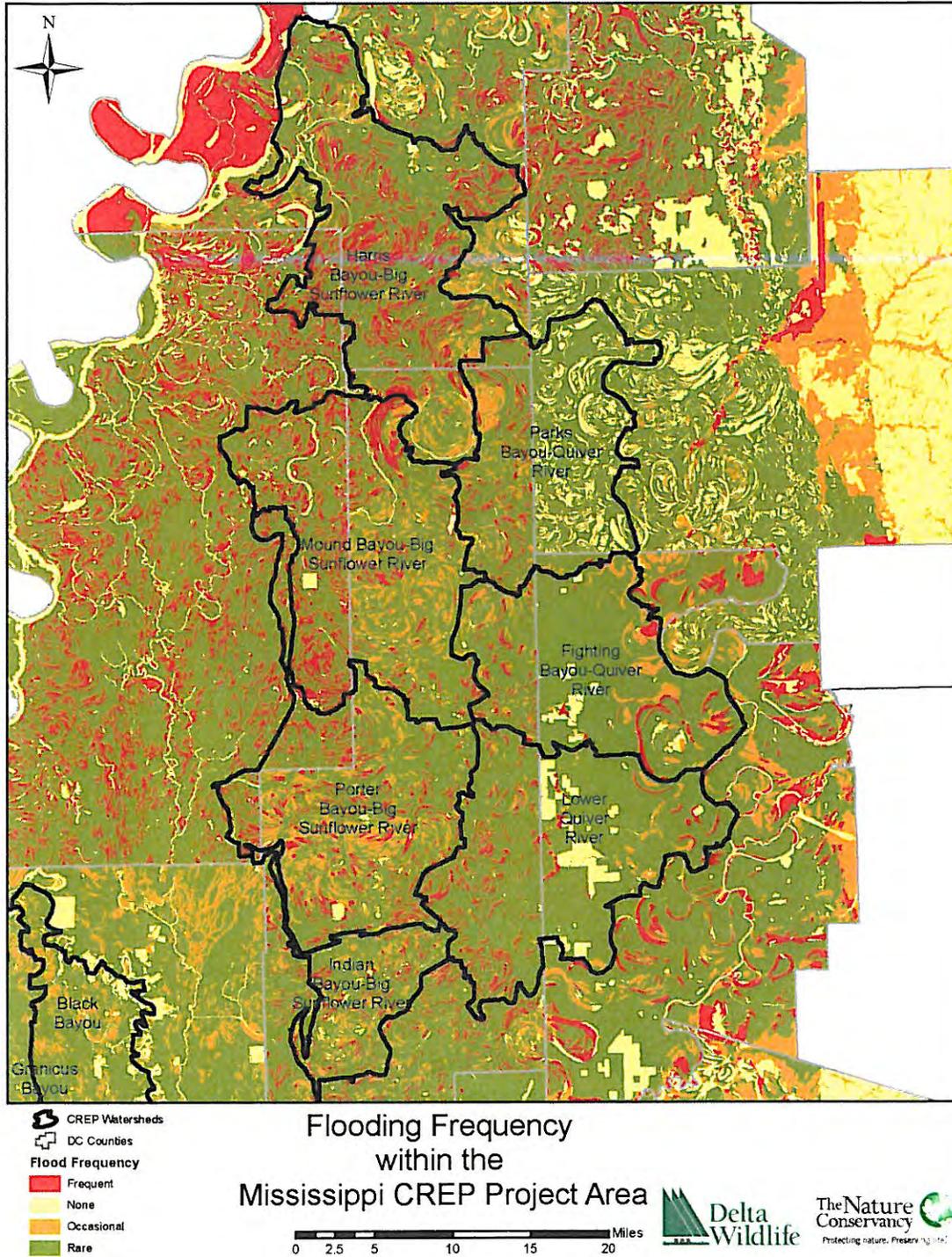
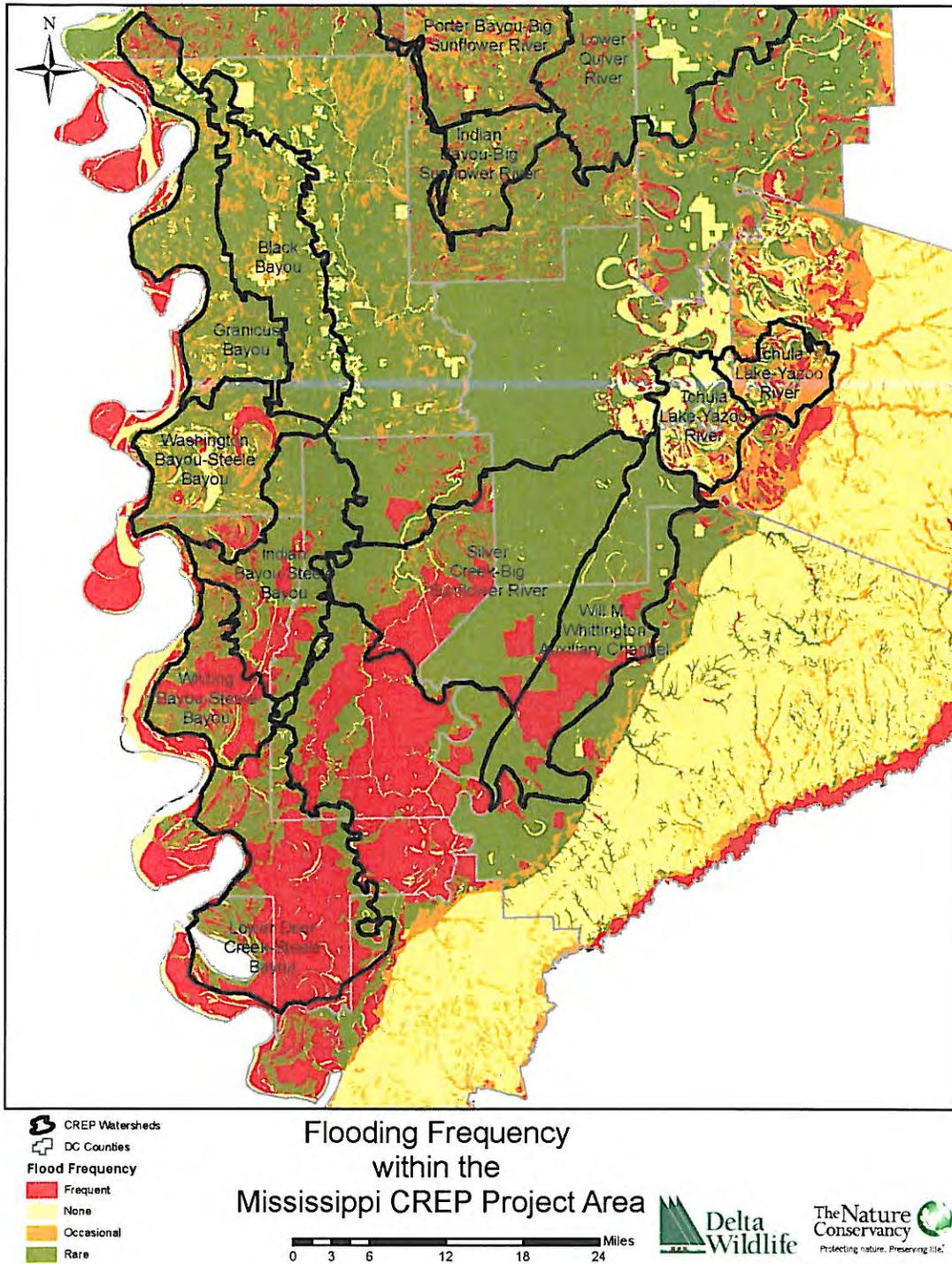


Figure 13: Flooding Frequency within the southern MS CREP Project Area



V. Project Objectives

A. National

- 1) Improve water quality, erosion control and wildlife habitat related to agricultural use in specific geographic areas.
- 2) Target Federal and Non-Federal resources in a coordinated manner to address and fulfill the priority conservation actions of Mississippi's Comprehensive Wildlife Conservation Strategy (CWCS) as designated by the Mississippi Department of Wildlife, Fisheries and Parks. The priority CWCS actions of concern to be addressed by the MS CREP are:
 - a. Encourage restoration and improved management of altered/degraded habitat when possible.
 - b. Encourage and improve agricultura /watershed land-use planning to address nonpoint pollution, erosion and water quality issues.
 - c. Promote and develop landowner incentive and assistance programs for conservation of species of greatest concern (SGCN) and their habitats.
 - d. Enhance viability of SGCN by providing habitat corridors between disjunct populations or subpopulations.
 - e. Monitor/limit point source erosion and sedimentation or pollution into streams.

B. MS CREP - Objectives

- 1) Reduce sediment loading of streams and lakes in the project area by installing conservation measures which reduce erosion rates and reduce off-field transportation rates of herbicides, pesticides and nutrients. This would lead to water quality improvements benefiting the federally endangered Sheepsnose mussel (*Plethobasus cyphus*), Snuffbox mussel (*Epioblasma triquerta*), Fat pocketbook mussel (*Potamilus capax*), Rabbitsfoot mussel (*Quadrula cylindrical*)* and the Pallid sturgeon (*Scaphirhynchus albus*).

**Action is under Federal Register Review*

- 2) Increase the BHF acreage, which is considered to be one of the most degraded ecosystems in North America and provides habitat for several migratory waterfowl and shorebird species as well as the federally threatened Louisiana black bear.
- 3) Commence initial wetland restoration, CP23, in a coordinated effort by federal and state agencies and non-governmental organizations. Assist producers in establishing an increased acreage amount of Mississippi-adapted bottomland hardwood tree species to serve as habitat for several migratory waterfowl and shorebird species as well as the federally threatened Louisiana black bear.

- 4) Provide increased protection of sub-surface water sources from contamination by agricultural chemicals, nutrients and pathogens by assisting with the installation of conservation measures that reduce point and non-point pollution. Assist producers in establishing increased riparian buffer acreage to serve as nutrient/chemical uptake and filtering sites.

C. Estimated Participation

Landowners, producers and operators in the MS CREP project area have demonstrated a strong land stewardship belief by participation in new and existing USDA Conservation Assistance Programs.

It is estimated that up to an additional 4,000 acres in the targeted project area would be offered for participation in the MS CREP project

VI. Project Description

A. Conservation Practices for 15-Year Contract Period

Practice CP22	Riparian Forest Buffer (1,330 acres)
Practice CP23	Wetland Restoration (1,330 acres)
Practice CP31	Bottomland Hardwood Timber Establishment on Wetlands (1,330 acres)

All contracts for land enrolled in the Conservation Reserve Enhancement Program (MS CREP) will be not less than 14 years nor more than 15 years in duration and will be subject to all normal CRP provisions as provided for in Handbook 2-CRP (Rev. 4), except as noted. Management tool provisions for managed haying and grazing, when recommended by the technical agency, will be limited to a maximum of 1 out of every 3 years, as provided within national policy.

The following enrollment criteria, in addition to other applicable CRP criteria, shall apply:

1. For all practices, the practice will be implemented in accordance with Handbook 2-CRP (Rev. 4), and the NRCS Field Office Technical Guide (FOTG) and applicable regulations.
2. No acreage may be enrolled under or per contract unless it equals or exceeds 0.1 acre.
3. Enrolled areas for all CREP approved practices must be established at planting rates and species combinations as specified in Handbook 2-CRP (Rev. 4), or as written into the Conservation Plan of Operation (CPO) by NRCS.
4. Sign-up Incentive Payment (SIP) eligibility is applicable on all practices (CP22, CP23, and CP31). The additional SIP payments will be made by state partners on all practices as stipulated by the MS CREP Agreement and is reflected within this proposal - Figure 14, Total Estimated Budget Costs for Project.

B. Estimated Number of Acres to Be Contracted Under MS CREP - 4,000

C. Acreage Enrollment Targets for 6 Year Implementation of Program

Practice CP22 Riparian Forest Buffer (1,330 acres)

Practice CP23 Wetland Restoration (1,330 acres)

Practice CP31 Bottomland Hardwood Timber Establishment on Wetlands (1,330 acres)

D. Eligible Land

Land to be enrolled in the MS CREP must meet **all** applicable eligibility requirements as outlined within Handbook 2-CRP (Rev. 5) and fall within 51% of the project area. In order to impact the targeted watersheds (Fig. 2) of the MS CREP, all land within the counties of Washington, Sharkey, Issaquena, Bolivar, Humphreys, Holmes, Yazoo, Coahoma, Sunflower, Leflore and Tallahatchie is eligible for enrollment.

E. Analysis of Likelihood of Achieving Project Goals

The incentive to establish the first CREP in Mississippi originated due to the concerns expressed by local stake holders. The purpose of the project is to improve water quality, maintain water quantity, and create unique wildlife and wetland habitat. Implementation of these practices will assist in reducing erosion and subsequent deposition of sediments into adjacent water bodies. Sediment loads carry phosphates, nitrates, pesticides, and other pollutants, which are detrimental to water quality.

F. Interagency Coordination

An interagency work group comprised of federal, state and local government entities, non-profits and landowners have met to discuss the resource concerns in the project area. Within the project area there are eleven counties. The cities and towns within these counties will benefit from this project through the improvement of water quality and the development of enhancing wildlife and wetland habitat. These agencies have a successful track record of successfully implementing and managing other projects within the watershed.

G. Proposed MS CREP Process

The Mississippi Farm Service Agency, through their State CREP Coordinator, will handle coordination for this project in conjunction with the Mississippi Department of Environmental Quality. The MS CREP public relations and marketing will be handled by a PR committee including members of the work group and other supporting organizations. A communication plan will be developed to increase interest in the program prior to implementation.

Partners will develop a process for identifying the roles and responsibilities of local Soil and Water Conservation Districts (SWCD), Farm Service Agency (FSA) and Natural Resources Conservation Service (NRCS) offices, as well as additional contributing partners in the implementation of this project.

STEP	ACTION
1	Participant visits a USDA Service Center to review CREP program eligibility details and determines to proceed with CREP offer. Note: The initial contact with a MS CREP applicant may be done by scheduling an appointment with FSA or NRCS in the watershed.
2	Participant initiates Form CRP-2, Worksheet, with FSA.
3	FSA makes participant and cropland eligibility determinations and forwards Form CRP-2 to applicable NRCS Office.
4	NRCS makes land eligibility determinations for designated MS CREP practices, and completes shaded areas on Form CRP-2, including soil map and soil acreage data. FSA calculates the maximum payment rate for the offer.
5	Participant visits SWCD Offices to update or initiate District Cooperative Agreement.
7	Participant signs a CREP CRP-1, Contract.
8	FSA approves the CRP-1, Contract. FSA issues SIP payment.
9	FSA issues rental payments annually for 15 years if all eligibility requirements are met.
10	After participants complete the practice and all required cost-share documents are filed and processed, FSA issues cost-share payment. The additional incentive of \$200/acre SIP payment to participant (all proposed practices), will made by the State.
11	FSA is responsible for contract compliance after the final status review by NRCS.

VII. Cost Analysis

Program Funding Sources	Total Program Costs	Percentage Costs
USDA	\$7,119,820	80%
State (local & NGO)	\$1,779,955	20%
<i>Total</i>	8,899,775	100%

A. Estimated USDA and State of Mississippi Partnering Costs for MS CREP Implementation:

Average cost for 15 years rent, cost-share, PIP and SIP

Figure 14: Total Estimated Budget Costs for Project

Practice Establishment Cost						
Practice	Acres	Estab. Cost/acre	Federal Funds		Partner's Funds	Total Funds
			50% Cost Share	40% Practice Incentive Payment	State Habitat Incentive Payment	Total Cost associated to cost-share, PIP & SHIP
CP 22	1,335	\$250	\$166,250	\$133,000	N/A	\$299,250
CP 23	1,335	\$750	\$498,750	\$399,000	N/A	\$897,750
CP 31	1,330	\$250	\$166,250	\$133,000	N/A	\$299,250
Est. subtotals			\$831,250	\$665,000	\$0	\$1,496,250

Rental Payment and Sign-up Incentive Payment Cost						
Practice	Acres Under Contract	Average Annual Rental Rates (\$81.14 X 1.2 rate)	Federal Rental Rate for 15 Years	Sign-up Incentive Payment (\$100.00/acre)	Sign-up Incentive Payment (\$200.00/acre)	Total Project Cost - Rental and BMPMP
CP 22	1,335	\$97.37	\$1,942,492	\$133,000	\$266,000	\$2,341,492
CP 23	1,335	\$97.37	\$1,942,492	\$133,000	\$266,000	\$2,341,492
CP 31	1,330	\$97.37	\$1,942,492	\$133,000	\$266,000	\$2,341,492
Est. subtotals			\$5,827,475	\$399,000	\$798,000	\$7,024,475

Mid Contract Management Costs					
Practice	Acres under Contract	Mid Contract Mgt. Cost	Number of Mid-Contract Payments	Federal Funds (50% cost share)	Total Cost Associated Contract Management
CP 22	1,335	\$45	2	\$59,850	\$59,850
CP 23	1,335	\$20	15	\$199,500	\$199,500
CP 31	1,330	\$45	2	\$119,700	\$59,850
				\$379,050	\$379,050

TOTAL PROJECT COST (CASH AND IN-KIND)

	Project Shares Needed	PARTNER'S FUND CONTRIBUTIONS			
			Cash	In-Kind	Total
Total Project Cost	\$8,839,925				
Partner's In-Kind Needed	\$883,992				\$0
Partner's Cash Funds Needed	\$883,992	TNC	\$450,000		\$450,000
Total Partnership Funds Needed	\$1,767,985				\$0
Total USDA Funds Needed	\$7,071,940	Other State Sources	To Be Determined	To Be Determined	\$0
		Total	\$450,000		\$450,000

Total Federal Cost (includes annual rental, mid contract mgt, practice establishment, PIP, and SIP payments)	Total Partner Cost (State Habitat Incentive Payments and In-Kind project match)
\$7,071,940	\$1,767,985

B. Local Funding Sources, In-Kind and Cash Contributions:

Total Project Cash Contributions:

- The Nature Conservancy of Mississippi
Project Total: \$450,000

Payments on 15 Year Contracts

FSA Rental Payments: Owners of enrolled land will receive 120% of the soil rental rate per acre per year for 15 years for all eligible practices. Landowners will receive 15 annual payments; one will be prorated, unless a deferment of up to six months is exercised by the participant.

Figure 15: Program Costs - Anticipated annual program cost – (annual rental payment).

Practice and Acres	FSA & NGO Annual Payments Cost Share & Incentives	Duration of Contract	Total Acres
CP22, Riparian Forest Buffer	\$2,700,592	15 years	1,330 acres
CP23, Wetland Restoration	\$3,438,742	15 years	1,330 acres
CP31, Bottomland Hardwood Timber	\$2,760,442	15 years	1,330 acres

D. Financial Analysis

From FSA records, a majority of the producers within the watersheds that make up the MS CREP project area participate in the following federal programs for corn, rice, soybeans and cotton operations: Direct/Counter-cyclical payments, marketing loss payments, and loan deficiency payments. Producers in the Forested Wetland MS CREP project area participate in the Federal programs that are available due to the narrow production cost to profit margin ratio. To ensure that this CREP initiative is a success, it is imperative that the incentives for the program are close to actual profits from agricultural production. The average per acre soil rental rate for the watershed is \$81.14. A 120% (1.2) soil rental rate per acre would average \$97.37. With a SIP payment of an additional \$300/acre incentive (Federal and Partner contributions) for practice installation, it is believed that these incentives are close enough to “profit from production” that landowners will be interested and participate in the MS CREP project.

An additional consideration is the value of land in the project watersheds. Development pressure is moderate to high depending on site location; however, it is not uncommon for land to sell from \$3,000 to \$3,500 an acre. Therefore, it is important to provide enough incentive to landowners to successfully enroll land in the MS CREP and maintain stream corridors within the project area.

VIII. Monitoring Program

Reductions in sediment, Nitrogen (N) and Phosphorus (P) will be documented through a tiered monitoring approach in the Big Sunflower River watershed. Tier 1 and 2 monitoring sites are active in the Harris and Porter Bayou watersheds within the Big Sunflower River watershed (Figure 16). MDEQ, U.S. Army Corps of Engineers, U.S. Geological Survey, Mississippi State University, and Delta F.A.R.M. are monitoring flow, sediment, N, and P, and other constituents during both base flow and storm flow, prior to, and after, construction and implementation of conservation management practices to determine the resulting percent reduction in sediment, N, and P. Edge of field sites (Tier 1) with pads and pipes and sites above and below in-ditch weirs (Tier 1) have been established to monitor discharge and constituent concentration, so both concentration and loads can be estimated. Stream gauges are established for downstream monitoring sites (Tier 2 and 3) so the cumulative effectiveness of management practices in reducing sediment, N, and P concentrations and loads can be estimated. The Agriculture Research Service-National Sedimentation Laboratory (ARS-NSL) is also monitoring Tier 1 and Tier 2 sites at Beasley Lake, which is a Conservation Effects Assessment Project (CEAP) study area in the Indian Bayou - Big Sunflower River watershed (Figure 16). The Delta Fixed Network of monitoring sites also includes Tier 2 sites, one on the headwaters of the Big Sunflower River and another on the Quiver River, and a Tier 3 site on the Bogue Phalia.

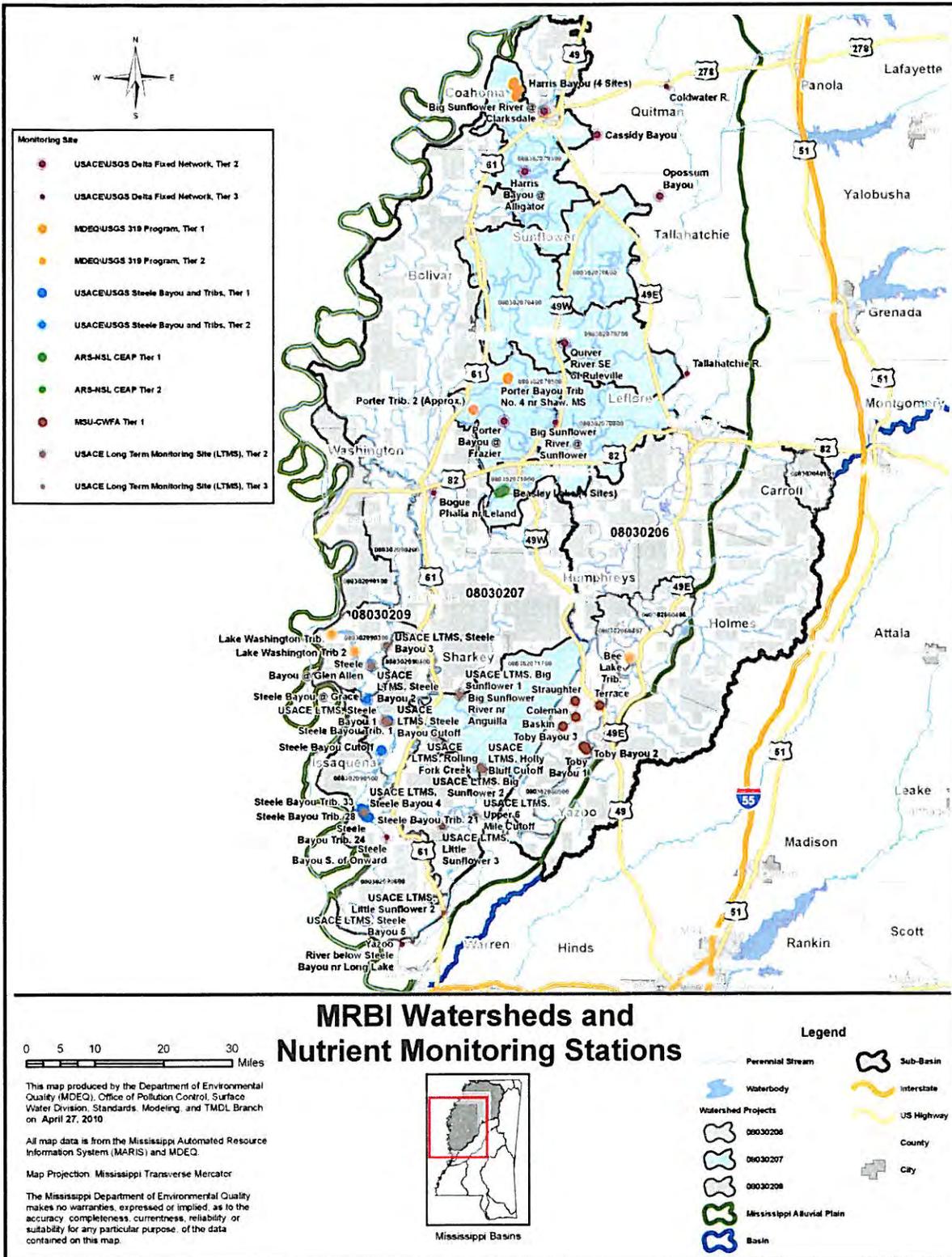
Tiered monitoring is also occurring in the Upper Yazoo River watershed in the Whittington Channel (Wolf Lake) and Lower Tchula Lake (Bee Lake) watersheds to evaluate sediment and nutrient reductions through vegetated drainage ditches and other practices. In the Deer Creek-Steele Bayou watershed, pre and post-management practice monitoring will be used to determine the sediment, N, and P reductions occurring in the Washington Bayou (Lake Washington) and other sub-watersheds. A larger Tier 3 site is also shown in Figure 1 on the Yazoo River downstream of the confluence of the Big Sunflower River and Steele Bayou with the Yazoo River to capture overall trends of the entire Yazoo River Basin.

Significant N and P monitoring has occurred at other sites in the Big Sunflower watershed in the past that can also provide useful information. The USGS had 2 National Water Quality Assessment

(NAWQA) ACT sites in the watershed. The USGS and USACE also had an active monitoring program in the Big Sunflower-Silver Creek watershed to determine the percent reduction in sediment, N, and P from reforestation, including bottomland hardwood wetlands. Many partners collaborated on the Mississippi Delta Management System Evaluation Areas (MDMSEA) project that included extensive monitoring of practice effectiveness and effects on receiving lakes. Two of the MDMSEA lakes are in the Big Sunflower River watershed.

Because agricultural systems and conservation management practices are similar throughout the Delta, regardless of the 8 digit HUC, project results from all the Delta watersheds will be pooled to better estimate the efficiency of conservation management practices in reducing sediment, N and P. These results will then be extrapolated, by management practice, on a per acre basis to estimate the sediment, N and P reductions within these three 8 digit HUCs from these conservation management practices. These results will provide the first large-scale estimates of sediment and nutrient reduction efficiencies for the Mississippi Delta and will contribute to the development and promulgation of achievable sediment and nutrient water quality criteria.

Figure 16: Delta Watersheds Monitoring Program



IX. Public Outreach and Support

The Nature Conservancy-Mississippi Chapter and partners, through the State CREP coordinator will assist in coordinating public outreach. Landowners will be advised of the opportunities to participate through special landowner meetings, direct mail and through the network of other organizations involved with the project.

The following organizations have been and will continue to be actively involved in promoting the MS CREP Project:

- The Nature Conservancy
- Delta F.A.R.M.
- Delta Wildlife
- Mississippi Department of Environmental Quality (MDEQ)
- Natural Resources Conservation Service (NRCS)
- Farm Service Agency (FSA)

X. Development of Procedure

The local work group will work with the Mississippi FSA as deemed necessary by National CREP Program Manager prior to MS CREP enrollment.

XI. Training of Staff

Mississippi FSA and The Nature Conservancy-Mississippi Chapter will organize training for staff members in the eleven counties of the MS CREP project area. FSA County Executive Directors, NRCS District Conservationists, and Soil and Water Conservation Districts and staff will require training on CREP procedure and practices as well as contributing non-governmental organization personnel.

XII. Communication Plan

The partners are in the process of developing a comprehensive communication plan at this time.

A. *Goal:* To provide communication and marketing support to ensure the success of MS CREP in all 11 participating counties.

Objectives:

- Obtain full awareness of CREP among producers in the MS CREP targeted watersheds.
- Create a positive response to MS CREP in the farming community and among staff and partners.
- Provide materials and staff to facilitate broad promotion and efficient sign-up for the MS CREP.
- Build and maintain a working coalition of federal, state and private interests to promote the MS CREP.
- Identify and take full advantage of available opportunities to reach producers with information about MS CREP.

B. *Motivators to Enrollment:*

- To improve the land and the value of a farm
- To beautify the land
- To avoid government interference
- Increased incentives for conservation practices
- Improved water quality

C. *Barriers to Enrollment:*

- High commodity prices
- Investment of time and money
- Implementation costs
- Maintenance costs
- Loss of productive land
- Lack long-term contracts, transferability to future owners
- Wildlife
- Government Guidelines

D. *Communication Tools and Materials:*

- Pamphlets
- Fact Sheets
- Signage
- Press Releases
- Events and Activities
- Direct Mailings
- Presentations
- Displays at Public Meetings
- Articles in local newspapers and popular farming magazines
- Public Service Announcements on local radio stations

References:

Sources of data were taken from references that are “hardcopy” and/or “web-based”.

Sources include:

Natural Resources Conservation Service (NRCS)

Farm Service Agency (FSA)

USDA’s Economic Research Service (ERS)

USDA’s National Agricultural Statistics Service (NASS).

Mississippi Department of Environmental Quality (MDEQ)

1
2

APPENDIX B
SITE-SPECIFIC ENVIRONMENTAL EVALUATION (FORM FSA 850 OR CPA-052)

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U.S. Department of Agriculture Natural Resources Conservation Service		NRCS-CPA-52 5-19-2010		A. Client Name:			
ENVIRONMENTAL EVALUATION WORKSHEET				B. Conservation Plan ID # (as applicable): Program Authority (optional):			
				D. Client's Objective(s) (purpose):			
E. Need for Action:		G. Alternatives					
		No Action √ if RMS <input type="checkbox"/>		Alternative 1 √ if RMS <input type="checkbox"/>		Alternative 2 √ if RMS <input type="checkbox"/>	
		[Empty]		[Empty]		[Empty]	
Resource Concerns							
In Section "F" below, analyze, record, and address concerns identified through the Resources Inventory process. (See FOTG Section III - Resource Quality Criteria for guidance).							
F. Resource Concerns and Existing / Benchmark Conditions (Analyze and record the existing/benchmark conditions for each identified concern)		H. Effects of Alternatives					
		No Action		Alternative 1		Alternative 2	
		Amount, Status, Description (short and long term)	√ if does NOT meet QC	Amount, Status, Description (short and long term)	√ if does NOT meet QC	Amount, Status, Description (short and long term)	√ if does NOT meet QC
SOIL			NOT meet <input type="checkbox"/> QC		NOT meet <input type="checkbox"/> QC		NOT meet <input type="checkbox"/> QC
			NOT meet <input type="checkbox"/> QC		NOT meet <input type="checkbox"/> QC		NOT meet <input type="checkbox"/> QC
			NOT meet <input type="checkbox"/> QC		NOT meet <input type="checkbox"/> QC		NOT meet <input type="checkbox"/> QC
WATER			NOT meet <input type="checkbox"/> QC		NOT meet <input type="checkbox"/> QC		NOT meet <input type="checkbox"/> QC
			NOT meet <input type="checkbox"/> QC		NOT meet <input type="checkbox"/> QC		NOT meet <input type="checkbox"/> QC
			NOT meet <input type="checkbox"/> QC		NOT meet <input type="checkbox"/> QC		NOT meet <input type="checkbox"/> QC

F. Resource Concerns and Existing / Benchmark Conditions (Analyze and record the existing/benchmark conditions for each identified concern)	H. (continued)					
	No Action		Alternative 1		Alternative 2	
	Amount, Status, Description (short and long term)	√ if does NOT meet QC	Amount, Status, Description (short and long term)	√ if does NOT meet QC	Amount, Status, Description (short and long term)	√ if does NOT meet QC
AIR		NOT meet <input type="checkbox"/> QC		NOT meet <input type="checkbox"/> QC		NOT meet <input type="checkbox"/> QC
		NOT meet <input type="checkbox"/> QC		NOT meet <input type="checkbox"/> QC		NOT meet <input type="checkbox"/> QC
		NOT meet <input type="checkbox"/> QC		NOT meet <input type="checkbox"/> QC		NOT meet <input type="checkbox"/> QC
PLANTS		NOT meet <input type="checkbox"/> QC		NOT meet <input type="checkbox"/> QC		NOT meet <input type="checkbox"/> QC
		NOT meet <input type="checkbox"/> QC		NOT meet <input type="checkbox"/> QC		NOT meet <input type="checkbox"/> QC
		NOT meet <input type="checkbox"/> QC		NOT meet <input type="checkbox"/> QC		NOT meet <input type="checkbox"/> QC
ANIMALS		NOT meet <input type="checkbox"/> QC		NOT meet <input type="checkbox"/> QC		NOT meet <input type="checkbox"/> QC
		NOT meet <input type="checkbox"/> QC		NOT meet <input type="checkbox"/> QC		NOT meet <input type="checkbox"/> QC
		NOT meet <input type="checkbox"/> QC		NOT meet <input type="checkbox"/> QC		NOT meet <input type="checkbox"/> QC
HUMAN - Economic and Social Considerations						

Special Environmental Concerns: Environmental Laws, Executive Orders, policies, etc.						
In Section "I" complete and attach applicable Environmental Procedures Guide Sheets for documentation. Items with a "•" may require a federal permit or consultation/coordination between the lead agency and another government agency. In these cases, effects may need to be determined in consultation with another agency. Planning and practice implementation may not proceed for practices not involved in consultation.)						
I. Special Environmental Concerns (Document compliance with Environmental Laws, Executive Orders, policies, etc.)	J. Impacts to Special Environmental Concerns					
	No Action		Alternative 1		Alternative 2	
	Status and progress of compliance. (Complete and attach Guide Sheets as applicable)	√ if needs further action	Status and progress of compliance. (Complete and attach Guide Sheets as applicable)	√ if needs further action	Status and progress of compliance. (Complete and attach Guide Sheets as applicable)	√ if needs further action
•Clean Air Act		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
•Clean Water Act / Waters of the U.S.		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
•Coastal Zone Management		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
Coral Reefs		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
•Cultural Resources / Historic Properties		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
•Endangered and Threatened Species		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
Environmental Justice		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
•Essential Fish Habitat		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
Floodplain Management		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
Invasive Species		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
•Migratory Birds/Bald and Golden Eagle Protection Act		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
Prime and Unique Farmlands		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
Riparian Area		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
•Wetlands		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
•Wild and Scenic Rivers		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
K. Other Agencies and Broad Public Concerns	No Action		Alternative 1		Alternative 2	
Easements, Permissions, Public Review, or Permits Required and Agencies Consulted.						

K. (continued) Other Agencies and Broad Public Concerns		No Action	Alternative 1	Alternative 2																											
Cumulative Effects Narrative (Describe the cumulative impacts considered, including past, present and known future actions regardless of who performed the actions)																															
L. Mitigation																															
M. Preferred Alternative	√ preferred alternative	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																											
	Supporting reason																														
N. Context (Record context of alternatives analysis)																															
The significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality.																															
O. Determination of Significance or Extraordinary Circumstances Intensity: Refers to the severity of impact. Impacts may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts. If you answer ANY of the below questions "yes" then contact the State Environmental Liaison as there may be extraordinary circumstances and significance issues to consider and a site specific NEPA analysis may be required.																															
<table border="0"> <tr> <td>Yes</td> <td>No</td> <td></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>• Is the preferred alternative expected to cause significant effects on public health or safety?</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>• Is the preferred alternative expected to significantly effect unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.the unique characteristics of the geographic area?</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>• Are the effects of the preferred alternative on the quality of the human environment likely to be highly controversial?</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>• Does the preferred alternative have highly uncertain effects or involve unique or unknown risks on the human environment?</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>• Does the preferred alternative establish a precedent for future actions with significant impacts or represent a decision in principle about a future consideration?</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>• Is the preferred alternative known or reasonably expected to have potentially significant environment impacts to the quality of the human environment either individually or cumulatively over time?</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>• Will the preferred alternative likely have a significant adverse effect on ANY of the special environmental concerns? Use the Evaluation Procedure Guide Sheets to assist in this determination. This includes, but is not limited to, concerns such as cultural or historical resources, endangered and threatened species, environmental justice, wetlands, floodplains, coastal zones, coral reefs, essential fish habitat, wild and scenic rivers, clean air, riparian areas, natural areas, and invasive species.</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>• Will the preferred alternative threaten a violation of Federal, State, or local law or requirements for the protection of the environment?</td> </tr> </table>					Yes	No		<input type="checkbox"/>	<input type="checkbox"/>	• Is the preferred alternative expected to cause significant effects on public health or safety?	<input type="checkbox"/>	<input type="checkbox"/>	• Is the preferred alternative expected to significantly effect unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.the unique characteristics of the geographic area?	<input type="checkbox"/>	<input type="checkbox"/>	• Are the effects of the preferred alternative on the quality of the human environment likely to be highly controversial?	<input type="checkbox"/>	<input type="checkbox"/>	• Does the preferred alternative have highly uncertain effects or involve unique or unknown risks on the human environment?	<input type="checkbox"/>	<input type="checkbox"/>	• Does the preferred alternative establish a precedent for future actions with significant impacts or represent a decision in principle about a future consideration?	<input type="checkbox"/>	<input type="checkbox"/>	• Is the preferred alternative known or reasonably expected to have potentially significant environment impacts to the quality of the human environment either individually or cumulatively over time?	<input type="checkbox"/>	<input type="checkbox"/>	• Will the preferred alternative likely have a significant adverse effect on ANY of the special environmental concerns? Use the Evaluation Procedure Guide Sheets to assist in this determination. This includes, but is not limited to, concerns such as cultural or historical resources, endangered and threatened species, environmental justice, wetlands, floodplains, coastal zones, coral reefs, essential fish habitat, wild and scenic rivers, clean air, riparian areas, natural areas, and invasive species.	<input type="checkbox"/>	<input type="checkbox"/>	• Will the preferred alternative threaten a violation of Federal, State, or local law or requirements for the protection of the environment?
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<input type="checkbox"/>	<input type="checkbox"/>	• Will the preferred alternative threaten a violation of Federal, State, or local law or requirements for the protection of the environment?																													
P. The information recorded above is based on the best available information: In the case where a non-NRCS person (i.e. a TSP) assists with planning they are to sign the first signature block and then NRCS is to sign the second block as the responsible federal agency for the planning action.																															
<input type="text"/> Signature (TSP if applicable)		<input type="text"/> Title		<input type="text"/> Date																											
<input type="text"/> Signature (NRCS)		<input type="text"/> Title		<input type="text"/> Date																											

The following sections are to be completed by the Responsible Federal Official (RFO)

Q. NEPA Compliance Finding (check one)		
The preferred alternative:		Action required
<input type="checkbox"/>	1) is not a federal action where the agency has control or responsibility.	Document in "R.1" below. No additional analysis is required
<input type="checkbox"/>	2) is a federal action that is categorically excluded from further environmental analysis and there are no <u>extraordinary circumstances</u> .	Document in "R.2" below. No additional analysis is required
<input type="checkbox"/>	3) is a federal action that has been sufficiently analyzed in an existing Agency state, regional, or national NEPA document and there are no predicted <u>significant adverse environmental effects</u> or <u>extraordinary circumstances</u> .	Document in "R.1" below. No additional analysis is required.
<input type="checkbox"/>	4) is a federal action that has been sufficiently analyzed in another Federal agency's NEPA document (EA or EIS) that addresses the proposed NRCS action and its' effects and has been formally adopted by NRCS . NRCS is required to prepare and publish the agency's own Finding of No Significant Impact for an EA or Record of Decision for an EIS when adopting another agency's EA or EIS document. Note: This box is not applicable to FSA.	Contact the State Environmental Liaison for list of NEPA documents formally adopted and available for tiering. Document in "R.1" below. No additional analysis is required
<input type="checkbox"/>	5) is a federal action that has NOT been sufficiently analyzed or may involve predicted significant adverse environmental effects or extraordinary circumstances and may require an EA or EIS.	Contact the State Environmental Liaison. Further NEPA analysis required.

R. Rationale Supporting the Finding

R.1 Findings Documentation	
R.2 Applicable Categorical Exclusion(s) (more than one may apply)	

I have considered the effects of the alternatives on the Resource Concerns, Economic and Social Considerations, Special Environmental Concerns, and Extraordinary Circumstances as defined by Agency regulation and policy.

S. Signature of Responsible Federal Official:

Signature	Title	Date

Additional notes

This form is available electronically.

FSA-850 U.S. DEPARTMENT OF AGRICULTURE (06-14-02) Farm Service Agency		1. PROJECT INFORMATION							
ENVIRONMENTAL EVALUATION CHECKLIST		1A. PRODUCER or APPLICANT NAME							
		1B. PROJECT NUMBER			1C. STATE & COUNTY CODE				
1D. TYPE OF PROJECT LOAN <input type="checkbox"/> CRP <input type="checkbox"/> ECP <input type="checkbox"/> OTHER <input type="checkbox"/>		1E. PROJECT OR DESCRIPTION		1F. GENERAL LOCATION					
2. BACKGROUND a. Describe the purpose and need for the project: b. Describe the project site and its present use: c. Describe the surrounding land uses; indicate the directions and distances involved. The extent of the surrounding land to be considered depends on the extent of the potential impacts of the project, its related activities, and the primary beneficiaries: Attach adequate location maps of the project area, as well as (1) an aerial photo of the site, (2) if available, topographic map which clearly delineates the area and the location of the project elements, (3) if available, site photos, and (4) if completed, a standard soil survey for the project. When necessary for descriptive purposes or environmental analysis, include land use maps or other graphic information. All graphic materials shall be of high quality resolution.									
3. PROTECTED RESOURCES For the below listed land uses or environmental resources, check the appropriate answer in Column A to indicate those that are present on the site(s) of the proposed action. Check the appropriate answer in Column B for those resources that are within the action's area of environmental impact, such as the areas adjacent to the proposed site(s). Check the appropriate answer in Column C for those land uses and environmental resources that will be adversely affected by the proposed action.				A Located on the site of the proposed action		B Located within the proposed action area of environmental impact		C Adversely affected by the proposed action	
Check the appropriate boxes as provided: - If "YES" is checked in Column A or B, then Column C must be completed. - If "YES" is checked in Column C, attach as Exhibit 3a, 3b, 3c, 3d, 3e, 3f, 3g, 3h, and 3i as applicable, a discussion and description of all potential impacts.				YES	NO	YES	NO	YES	NO
a. Wetlands An AD-1026 must be completed by all producers who request USDA program or loan benefits covered by the FSA of 1985, as amended by the Federal Agriculture Improvement and Reform Act of 1996. If any of questions 8 through 10 of the AD-1026 are answered "YES," then a NRCS CPA-026e must be completed and attached.									
b. Floodplains - Flood Map Panel # _____ For projects involving construction/development in floodplains, attach applicable floodplain development permits.									
c. Sole Source Aquifer Recharge Area (Designated by Environmental Protection Agency) The proposed action must not contaminate or contribute to the contamination of a sole source aquifer to the extent that a significant hazard to public health is created.									
d. Critical Habitat or Endangered/Threatened Species (listed or proposed) Consult with the U.S. Fish and Wildlife to ensure that the proposed action will not jeopardize a listed species or destroy or modify its "critical habitat" in accordance with the Endangered Species Act.									
e. Wilderness									
f. Coastal Barrier in Coastal Barrier Resources System or Approved Coastal Zone Management Area									
g. Wild or Scenic River									
h. Natural Landmark									
i. Historical, Archeological Sites									

4. WATER QUALITY

a. Will the proposed action adversely affect the quality of surface and/or ground water?

YES NO

b. Will the proposed action comply with the requirements of the Clean Water Act and any applicable State water quality laws?

YES NO

If Item 4a is answered "YES," attach as Exhibit 4, a discussion of any impacts to water quality.

5. AIR QUALITY

Will the proposed action produce air emissions or odors that will violate any Federal, State, or local laws or standards?

YES NO

If "YES," attach as Exhibit 5, a discussion of any impacts to air quality.

6. NOISE

Will the proposed action result in permanent increases in noise levels?

YES NO

If "YES," attach as Exhibit 6, a discussion of any noise impacts.

7. IMPORTANT LAND RESOURCES

Will the proposed action result in the conversion of important farmland, prime forest land, or prime rangeland to a nonagricultural use?

YES NO

If "YES," attach as Exhibit 7, a discussion of which land resources would be affected along with any alternatives to the proposed action.

8. UNIQUE NATURAL FEATURES AND AREAS

a. Will the project be located near natural features (i.e. bluffs, caves, or cliffs) or near public or private scenic areas?

YES NO

b. Are other natural resources visible on the site or in the vicinity?

YES NO

c. Will any such resources be adversely affected or will they adversely affect the project?

YES NO

If Item 8c is answered "YES," attach as Exhibit 8, a discussion of such natural features or areas and potential adverse impacts.

9. ENVIRONMENTAL JUSTICE

Will the proposed action cause any adverse human health or environmental effects to minority or low income communities as defined in the Executive Order 12896, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations"?

YES NO

If "YES," attach as Exhibit 9, a discussion of any adverse effects.

10. SOCIAL AND ECONOMIC IMPACTS

Will the proposed action have any negative impacts on the local social and economic conditions? YES NO

If "YES," attach as Exhibit 10, a discussion of any negative impacts.

11. STATE ENVIRONMENTAL POLICY ACT

Is the proposed project subject to a State NEPA? YES NO

If "YES," attach as Exhibit 11, a discussion of the results of compliance with these requirements.

12. PUBLIC REACTION

Have there been any negative reactions from the public related to the proposed project? YES NO

If "YES," attach as Exhibit 12, a discussion of any associated comments and related correspondence.

13. CUMULATIVE IMPACTS

Are there any cumulative impacts resulting from the proposed project? YES NO

If "YES," attach as Exhibit 13, a discussion of the cumulative impacts of this project and the related activities. Give particular attention to land use changes and air and water quality impacts.

14. ALTERNATIVES

Based on the answers provided in this form, will alternatives have to be considered? YES NO

If "YES," attach as Exhibit 14, a discussion of the feasibility of alternatives to the project and their environmental impacts.

15. MITIGATION MEASURES

Based on the answers provided in this form, will mitigation measures have to be considered? YES NO

If "YES," attach as Exhibit 15, a discussion of any measures which will be required to avoid or mitigate the identified adverse impacts.

16. COMMENTS

17. CHECKLIST

Permits			Forms		
	Required	Not Required		Required	Not Required
Army Corps of Engineers 404			Form FSA-851, Environmental Risk Assessment		
NPDES Storm Water			Form NRCS CPA-026e, HEL and WC Determination		
Floodplain Development Permit			Form FEMA 81-93, Standard Flood Hazard Determination		
CAFO Permit					

Letters and Other Requirements

	Required	Not Required		Required	Not Required
Fish and Wildlife Service clearance on Endangered/Threatened Species			Public Notice for Floodplains as required by section 2(a)(4) of EO 11988		
State Historic Preservation Officer consultation			Tribal Historic Preservation Officer consultation		

NOTE: Other permits, forms, and letters may be required and should be attached as applicable. All permits, forms, and letters should be attached as exhibits corresponding to their appropriate section of this form.

18. FINDING

I have reviewed and considered the types and degrees of adverse environmental impacts identified by this evaluation. I have also analyzed the proposal for its consistency with FSA environmental policies implementing the requirements of the National Environmental Policy Act and have considered the potential benefits of the proposal. Based upon this consideration and balancing of these factors, I recommend one of the following:

a. There will be no adverse impacts as a result of this proposed action or any adverse effects, either individually or cumulatively. The project can be considered as categorically excluded per ' 799.10 of 7 CFR Part 799. Neither an Environmental Assessment or Environmental Impact Statement will be required. The project is recommended for approval.

b. An Environmental Assessment should be completed to provide further and more complete analysis of any adverse impacts and approval of the project must be delayed pending the outcome of the assessment.

19A. NAME OF PREPARER	19B. TITLE OF PREPARER
19C. SIGNATURE OF PREPARER	19D. DATE (MM-DD-YYYY)
19E. SIGNATURE OF CONCURRING OFFICIAL	19F. TITLE OF CONCURRING OFFICIAL

1
2

**APPENDIX C
AGENCY CORRESPONDENCE**

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April 29, 2013

United States
Department of
Agriculture

Farm and Foreign
Agricultural
Services

Farm Service
Agency

1400 Independence
Ave, SW
Stop 0513
Washington, DC
20250-0513

TO: [Distribution List]

FROM: Matthew T. Ponish
Acting Director, Conservation & Environmental Programs Division
United States Department of Agriculture, Farm Service Agency

SUBJECT: Draft Programmatic Environmental Assessment (PEA) for Mississippi Delta
Conservation Reserve Enhancement Program (CREP), Mississippi

The United States Department of Agriculture, Farm Services Agency (FSA) on behalf of the Commodity Credit Corporation (CCC) has prepared a Draft PEA to examine the potential environmental consequences associated with implementing CREP in the Lower Mississippi Alluvial Valley (Delta) in Mississippi which includes Bolivar, Coahoma, Holmes, Humphreys, Issaquena, Leflore, Sharkey, Sunflower, Tallahatchie, Washington, and Yazoo Counties. The FSA is examining the Proposed Action (the CREP Agreement) and the no action alternative environmental baseline for natural and socioeconomic resources.

The Draft PEA is available at the following website for review and download: <http://www.fsa.usda.gov/FSA/webapp?area=home&subject=ecrc&topic=nep-cd>. All comments must be received by **May 31, 2013**. A public meeting has been scheduled for:

May 22, 3:00pm to 5:00pm
Capps Center
Delta Research and Extension Center
82 Stoneville Road
Stoneville, MS 38776

Written comments may be submitted at the meeting or by mailing to:

Cardno TEC, Inc.
Attn: Michael Harrison
11817 Canon Blvd
Suite 300
Newport News, VA 23606

We appreciate your review and look forward to receiving your comments.

Matthew T. Ponish

Distribution List

Delta F.A.R.M.
Attn: Trey Cook
PO Box 257
Stoneville, MS 38776

Delta Wildlife
Attn: Trey Cooke
PO Box 276
Stoneville, MS 38776

Mississippi Department of
Environmental Quality
PO Box 2261
Jackson, MS 39225

USDA Natural Resources
Conservation Service
Attn: Homer L. Wilkes
100 W. Capitol Street
Suite 1321, Federal Bldg.
Jackson, MS 39269

Mississippi Department of Wildlife,
Fisheries, & Parks
1505 Eastover Drive
Jackson, MS 39211

U.S. Fish and Wildlife Service
Mississippi Ecological Services
Field Office
3578 Dogwood View Parkway
Suite A
Jackson, MS 39213-7856



April 29, 2013

United States
Department of
Agriculture

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1400 Independence
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Washington, DC
20250-0513

TO: [Distribution List]

FROM: Matthew T. Ponish
Acting Director, Conservation & Environmental Programs Division
United States Department of Agriculture, Farm Service Agency

SUBJECT: Draft Programmatic Environmental Assessment (PEA) for Mississippi Delta
Conservation Reserve Enhancement Program (CREP), Mississippi

Please find the enclosed copy of the above referenced Draft PEA. A public comment period has been set for May 1, 2013 through May 31, 2013. Please make the Draft PEA available to the public for review during this time.

In addition, the Draft PEA is available at the following website for review and download:

<http://www.fsa.usda.gov/FSA/webapp?area=home&subject=ecrc&topic=nep-cd>. All comments must be received by **May 31, 2013**. A public meeting has been scheduled for:

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Stoneville, Mississippi 38776

Written comments may be submitted at the meeting or by mailing to:

Cardno TEC, Inc.
Attn: Mike Harrison
11817 Canon Blvd.
Suite 300
Newport News, VA 23606

We appreciate your assistance in public involvement for this project.

Matthew T. Ponish

Enclosures: 1 paper copy

Distribution List

Bolivar County Farm Service
Agency
Attn: James G. Anderson
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Cleveland, MS 38732-1740

Coahoma Farm Service Agency
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Washington County Farm Service
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Greenville, MS 38703-9419

Yazoo County Farm Service
Agency
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Yazoo City, MS 39194