LMRRA

Lower Mississippi River Resource Assessment

Assessment of The Need for River-Related Recreation and Access

Public Review Draft
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Executive Summary

This report assesses the need for river-related recreation and access on the Lower Mississippi River from its confluence with the Ohio River at Cairo, Illinois to the Head of Passes in Louisiana. The investigation was authorized in the Water Resources Development Act of 2000. The Nature Conservancy – Great Rivers Partnership is the lead study sponsor.

More than 140 million Americans participate in outdoor recreational activities. The outdoor recreation industry supports 6.1 million American jobs and generates $646 billion in spending each year. In the Lower Mississippi River Region, outdoor recreation and tourism combine to generate nearly $17 billion annually and over 240,000 jobs.

The study team identified eight areas of need on the Lower River: boat ramps, bicycle trails, outfitter and guide services, lodging and dining, parks and vistas, interpretation, riverboat landings and marketing. Addressing some of the recreation and access needs on the Lower River would add to residents' quality of life, and bring increased revenues and jobs to the region and the nation.

Fishing and paddling generate nearly 900,000 American jobs and $9 billion in Federal and state tax revenues annually. The biggest obstacle to expanding fishing and paddling use of the Lower Mississippi River is the lack of well located boat ramps. There are only 129 boat ramps along the 954 miles of the Lower Mississippi River. The ramps are clustered around urban centers like Memphis, Baton Rouge and New Orleans and many of them were not designed for launching small craft.

More than 60 million Americans ride bicycles. Bicycling generates 1.1 million American jobs, and $81 billion in annual spending. More bike lanes are being built in urban areas and the public would like to link these urban systems to bicycle trails in more rural settings with less traffic.

Outfitter and guide services in the Lower Mississippi River Region can provide safe, convenient options for people who want to hunt, fish, paddle and bicycle. The services are very limited but the increasing popularity of paddling and bicycling along with hunting and fishing create a good opportunity for small businesses all along the River.

Lodging and dining are readily available in urban areas, but are lacking in rural areas. Long distance bicyclists and paddlers, hunters and fishermen, and families visiting cultural and historic sites could all use more lodging and dining options in rural areas.

Many of the small towns on the Lower Mississippi River have no public space along the riverfront for picnics or even good views of the River. The topography of the Lower River limits the number of natural vistas providing broad views of the River and some of the places that could provide a view are not accessible. Riverside parks are excellent areas for interpretive centers that tell the story of the River and its habitat, value for navigation, and flood risk management system.

Riverboats are making a comeback on the Mississippi River. The boats dock at small towns and big cities along the length of the River and offer excursions to see cultural and historic sites, participate in local activities, and take guided trips into natural areas. Many small towns do not

have adequate docking facilities and miss the revenue from riverboat visits when the River is too high or too low.

The Lower Mississippi River passes seven states and many cities. There are many opportunities for outdoor recreation and tourism, but there is no single entity marketing the Mississippi River for tourism. Many visitors to the region come for a single purpose and are unaware of other opportunities.

This assessment is the second of three to be completed under the Lower Mississippi River Resource Assessment. An assessment of information needed for river-related management was completed in 2013 and a natural resource habitat needs assessment is underway. The conclusions from these three assessments will be expanded into a set of recommendations for projects and programs to manage the Lower Mississippi River into the future.

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I. INTRODUCTION

The Mississippi River watershed drains all or parts of 31 states and 2 Canadian provinces. It is the third largest watershed in the world. According to the Mississippi River Cities and Towns Initiative, the River creates $105 billion worth of U.S. Gross Domestic Product; provides drinking water for more than 18 million people; transports 62 percent of our nation's agricultural output; and directly supports one million jobs. Recreation and tourism within the Lower Mississippi River corridor generate nearly $17 billion in annual spending, support thousands of businesses and employ over 240,000 people.

The Mississippi River is one of the most diverse river systems in the world, with 422 native species of freshwater fishes, of which 180 are found nowhere else – and a rich diversity and density of birds, mammals, amphibians, reptiles, and invertebrates. This basin supports one of the world's largest bird migrations, connecting life from the Arctic to South America. The Mississippi Flyway hosts over 300 species of migrating birds and over 20 threatened or endangered species rely on the habitat in the Lower River.

The Lower Mississippi River begins at its confluence with the Ohio River and flows south to the Gulf of Mexico. The region has strong culinary and music traditions and internationally recognized tourism markets in Memphis, the Mississippi Delta, and New Orleans. Artists, authors and songwriters draw inspiration from the land, towns and people of the region.

Interest in the Mississippi River is increasing. Government agencies, industries, municipalities and non-governmental organizations are joining forces to promote the river and highlight the opportunities and problems. In 2013, the Mississippi River Cities and Towns Initiative, representing more than 120 cities and towns, signed a Memorandum of Common Purpose with the U.S. Army Corps of Engineers that acknowledges the Mississippi River is critical for recreation, tourism and many other purposes. The goal is to "perpetuate an era of cooperation and collaboration between the Mayors on the main stem Mississippi River and the U.S. Army Corps of Engineers."

The Federal Mississippi River and Tributaries Project levees, floodwalls, backwaters and floodways form the world's largest and most comprehensive flood risk management system. Navigation management began in the early 19th century and Mississippi River commercial shipping is one of the nation's valuable assets. Although people are naturally drawn to the river for its beauty, power, history, and culture, there has been no large-scale effort to develop it as a recreation and tourism asset.

Recreation has been an important part of human existence for millennia. Recreational activities reflect the history, lifestyle, religion, education, government and values of the people (McLean & Hurd 2012). Recreational opportunities are sometimes taken for granted, but societies throughout history have planned for and provided facilities to meet the public's needs.

Planning for outdoor recreation goes back to at least the ninth century B.C. when the Assyrians established parks for royal hunting parties. Some royal hunting preserves set aside during the Renaissance are now famous public parks occupying valuable land along rivers in the center of

cities. The two most well known are the Prater in Vienna, along the banks of the Danube, and the Tiergarten in Berlin, on the banks of the Spree. The first land set aside in the American colonies occurred in 1641 when the Massachusetts Bay Colony passed the Great Ponds Act declaring 2,000 bodies of water for public use for "fishing and fowling" (McLean & Hurd 2012).

In 1864, Congress set aside the Yosemite Valley and Mariposa Grove for public recreation use and it was later designated a National Park. Outdoor activities such as hiking, fishing, hunting, camping, and nature photography became popular near the end of the 19th century and bicycling was introduced in the 1870s (McLean & Hurd 2012). Today, more than 140 million Americans participate in these and other outdoor recreational activities. The outdoor recreation industry supports 6.1 million American jobs and $646 billion in spending each year (OIA 2012).

In 1958, increasing consciousness of public health and environmental issues and an expanding need for recreational space drove creation of the Outdoor Recreation Resources Review Commission. The Commission report of 1961 emphasized that State and local, as well as Federal, governments and the private sector were key elements in the total effort to make outdoor recreation opportunities available. Congress passed the Land and Water Conservation Fund Act in 1964. The Act established a funding source for both Federal acquisition of park and recreation lands and matching grants to state and local governments for recreation planning, acquisition and development. To be eligible for grants, every State must prepare and regularly update a statewide comprehensive outdoor recreation plan (SCORP). SCORPs address the demand for and supply of recreation resources (local, state and federal) within a state, identify needs and new opportunities for recreation improvements and set forth an implementation program to meet the goals identified by its citizens and elected leaders.

In April 2010, President Obama began the America's Great Outdoors Initiative:

> Americans are blessed with a vast and varied natural heritage. From mountains to deserts and from sea to shining sea, America's great outdoors have shaped the rugged independence and sense of community that define the American spirit. Our working landscapes, cultural sites, parks, coasts, wild lands, rivers, and streams are gifts that we have inherited from previous generations. They are the places that offer us refuge from daily demands, renew our spirits, and enhance our fondest memories, whether they are fishing with a grandchild in a favorite spot, hiking a trail with a friend, or enjoying a family picnic in a neighborhood park. They also are our farms, ranches, and forests -- the working lands that have fed and sustained us for generations. Americans take pride in these places, and share a responsibility to preserve them for our children and grandchildren.
>
> Today, however, we are losing touch with too many of the places and proud traditions that have helped to make America special. Farms, ranches, forests, and other valuable natural resources are disappearing at an alarming rate. Families are spending less time together enjoying their natural surroundings. Despite our conservation efforts, too many of our fields are becoming fragmented, too many of our rivers and streams are becoming polluted, and we are losing our connection to the parks, wild places, and open spaces we grew up with and cherish. Children,

> especially, are spending less time outside running and playing, fishing and hunting, and connecting to the outdoors just down the street or outside of town.
>
> Across America, communities are uniting to protect the places they love, and developing new approaches to saving and enjoying the outdoors. They are bringing together farmers and ranchers, land trusts, recreation and conservation groups, sportsmen, community park groups, governments and industry, and people from all over the country to develop new partnerships and innovative programs to protect and restore our outdoors legacy. However, these efforts are often scattered and sometimes insufficient. The Federal Government, the Nation's largest land manager, has a responsibility to engage with these partners to help develop a conservation agenda worthy of the 21st Century. We must look to the private sector and nonprofit organizations, as well as towns, cities, and States, and the people who live and work in them, to identify the places that mean the most to Americans, and leverage the support of the Federal Government to help these community-driven efforts to succeed. Through these partnerships, we will work to connect these outdoor spaces to each other, and to reconnect Americans to them.

The Mississippi River Commission's 200-year working vision for the Mississippi River Watershed acknowledges its many uses and values. This assessment of river-related recreation and access needs and the assessments of natural resource habitat needs and information needed for river-related management are providing some of the information necessary to move toward this vision. These three assessments touch on all five elements of the vision.

Lead secure lives on the river or tributary

Enjoy fresh air and the surrounding fauna, flora, and forests while hunting, fishing, and recreating

Travel easily, safely, and affordably

Drink from and use the abundant waters of any river, stream, or aquifer

Choose from an abundance of affordable basic goods and essential supplies that are grown, manufactured, and transported along the river to local and world markets

This report identifies the recreation needs for the Lower Mississippi River Region and demonstrates the valuable role recreation can play in the lives of people who live and work along the Mississippi River and the importance to the nation of highlighting one of our iconic places. The Assessment of Information Needed for River-Related Management was completed in 2013. It found four areas of needed information: water quality, sediment, tributary stream conditions, and data management. The Assessment of Natural Resource Habitat Needs is underway and will be completed in 2014. A watershed plan will combine all three assessments and provide the recommendations for projects and plans that leverage partnerships to answer the identified needs.

Congressional Authority

The Lower Mississippi River Resource Assessment (LMRRA) is authorized by Section 402 of the Water Resources Development Act of 2000, Public Law 106-541. It reads:

(a) ASSESSMENTS- The Secretary, in cooperation with the Secretary of the Interior and the States of Arkansas, Illinois, Kentucky, Louisiana, Mississippi, Missouri, and Tennessee, shall undertake for the Lower Mississippi River system--

> *(1) an assessment of information needed for river-related management;*
>
> *(2) an assessment of natural resource habitat needs; and*
>
> *(3) an assessment of the need for river-related recreation and access.*

(b) PERIOD- Each assessment referred to in subsection (a) shall be carried out for 2 years.

(c) REPORTS- Before the last day of the second year of an assessment under subsection (a), the Secretary, in cooperation with the Secretary of the Interior and the States of Arkansas, Illinois, Kentucky, Louisiana, Mississippi, Missouri, and Tennessee, shall transmit to Congress a report on the results of the assessment to Congress. The report shall contain recommendations for--

> *(1) the collection, availability, and use of information needed for river-related management;*
>
> *(2) the planning, construction, and evaluation of potential restoration, protection, and enhancement measures to meet identified habitat needs; and*
>
> *(3) potential projects to meet identified river access and recreation needs.*

(d) LOWER MISSISSIPPI RIVER SYSTEM DEFINED- In this section, the term `Lower Mississippi River system' means those river reaches and adjacent floodplains within the Lower Mississippi River alluvial valley having commercial navigation channels on the Mississippi mainstem and tributaries south of Cairo, Illinois, and the Atchafalaya Basin floodway system.

(e) AUTHORIZATION OF APPROPRIATIONS- There is authorized to be appropriated $1,750,000 to carry out this section.

Study Purpose

The purpose of the three Lower Mississippi River assessments is to develop a strategic approach to managing habitat restoration, recreational opportunities and the information needed to make river management decisions. Historically, the Lower River has been managed primarily for navigation and flood risk management. There has been little strategic planning for the river's other uses. The Lower River has important habitat and recreation resources that deserve focus.

The purpose of this recreation assessment is to identify the ongoing and anticipated recreation and recreation access needs in the study area.

Goal

The goal of the River-Related Recreation and Access Needs Assessment is to analyze the need for recreation facilities and access along the Lower River and develop a comprehensive plan to meet those needs and reconnect Americans with the great outdoors and the country's rich legacy of rivers, and promote collaboration between the public and private sectors.

Problems

The Lower Mississippi River Region (LMRR) is underutilized for recreation and underappreciated for its cultural legacy. There are problems with the amount and quality of recreation facilities in the area. There is also a public perception problem; many people who grew up near the river were taught to fear and avoid it, and demand for recreational access has traditionally been low. The demand is growing. The problems vary in different reaches of the river. The specific recreation and recreation access problems in the Lower Mississippi River are:

- There is a shortage of motorboat access in some areas.
- Existing access points are not conducive to canoeing and kayaking.
- There are not enough biking trails and very few in a natural or rural setting.
- Riverfront access is only available around urban areas.
- There are few interpretative centers/signs and they are scattered.
- There is no "one-stop" organization to provide information for all of the recreational facilities available in the LMRR and market it as a recreational destination.

Opportunities

There is an opportunity to develop a recreation and recreation access plan in the LMRR to improve facilities and promote recreation along this iconic river. Demand for recreational access to the river is growing steadily and there is an increasing opportunity for public and private collaboration to meet this need. The opportunities vary in different reaches of the river, and not all occur throughout the entire Lower River. Some of the specific opportunities are:

- Provide better motorboat access.
- Provide more canoeing and kayaking access.

- Provide more designated biking trails.
- Improve heritage tourism.
- Identify more publicly accessible riverfront with camp sites, picnic areas, etc.
- Develop more and better interpretative services.
- Create informational and marketing materials the public can use to learn about and plan recreational activities.

Assessment Objectives

These objectives guide the assessment of the need for river access and recreation within the LMRR and lay the foundation for the Watershed Plan. The Watershed Plan will combine the results of this assessment with the completed Information Needs Assessment and the Habitat Needs Assessment which is underway. These objectives will be further refined in the Watershed Plan. Only the first objective will be met in this assessment; the rest will be met in the Watershed Plan.

- Identify unmet recreation demands on the LMRR.
- Develop recommendations for recreation facilities to meet changing demands in the LMRR.
- Develop a conceptual strategy to market the LMRR for recreational use.
- Identify mechanisms that will allow public – private partnerships to develop and promote recreational use on the LMRR.

Methodology

The team used multiple information sources to determine the recreation and access needs in the LMRR. Outdoor recreation needs were raised during scoping for the LMRRA Information Needs Assessment that preceded this current recreation needs assessment. Public involvement more specific to recreation included: public meetings in Dyersburg, TN, Helena, AR, and St. Francisville, LA; and The Nature Conservancy sponsored an online questionnaire at: greatriverspartnership.org/en-us/NorthAmerica/Mississippi/Pages/LMRRA.aspx. Appendix B contains a detailed account of the public meetings.

The non-governmental partners for this project all have an interest in improving outdoor recreation in the LMRR. Two studies were commissioned prior to the beginning of this assessment to determine recreation demand and value in the LMRR. The Mississippi River Corridor-TN and Delta Partners, with grant support from The Walton Family Foundation, commissioned the study of "The Demand for Nature Based Tourism in the Lower Mississippi" (Yellow Wood 2013). The LMRCC commissioned, "The Economic Profile of the Lower Mississippi River: An Update" (IEc 2014). Both of these reports can be found in Appendix C. The team reviewed the SCORPs for each state in the study area (www.recpro.org/scorps) and contacted staff from state agencies that provide outdoor recreation. All of the partner organizations also maintain websites, many with message boards, Facebook and Twitter accounts. Team members reviewed the input from these and others including user groups,

commercial enterprises, state agencies, et al. The team used all of these sources to assess recreation and access needs.

Study Area

The study area for the project begins at RM (river mile) 953 of the main-stem Mississippi River at Cairo, IL, and extends downstream to RM 0 (Head of Passes) in Louisiana. It encompasses the main channel of the river and the area between the existing Mississippi River and Tributaries Project levees, including the mouths of all tributaries between the levees. It includes the rivers that have existing commercial navigation to the point of direct influence between each channel and the main-stem Mississippi River. For the recreation needs assessment, the study area was expanded to include recreational features and needs related to the Mississippi River that lie beyond the bounds of the active floodplain. The study area includes areas which can or do provide facilities necessary for recreational use along the river. The exact geographic extent is not definitive, but it covers the entirety of the counties touching the active floodplain and the Great River Road National Scenic Byway. An interactive online viewer of the area is available at: lmrgis.org/.

The Atchafalaya Basin Floodway System in Louisiana is also included within the authorized project area. Future public access areas and types of recreation features are identified in the Atchafalaya Basin Floodway System Draft Master Plan. It can be viewed at www2.mvn.usace.army.mil/recreation/rec_atchafalaya.asp and an Executive Summary is in Appendix A. The plan includes recommendations for public use lands, campgrounds, boat ramps, a visitor center and interpretive trails as well as recommendations for flowage easements, canal closures and water management units. The Draft identifies specific sites for recreation features such as campgrounds, boat ramps, viewing areas, piers, hiking trails, canoe launches and a visitor center. This Recreation Assessment does not reexamine the Atchafalaya Basin.

Partnership

The Nature Conservancy (TNC) Great Rivers Partnership is the study cost-sharing sponsor. TNC signed agreements with a group of Non-Governmental Organization partners who are providing Work-In-Kind study services. The study team includes staff from TNC North America Freshwater Program and TNC State Chapters in Tennessee, Louisiana and Mississippi, Lower Mississippi River Conservation Committee (LMRCC), National Audubon Society and Mississippi River Corridor-TN. All of these groups focus on sustainable river management and conservation and collectively they represent thousands of river users.

The LMRCC is a coalition of 12 state natural resources conservation and environmental quality agencies from Arkansas, Kentucky, Louisiana, Mississippi, Missouri and Tennessee. It provides the only regional forum dedicated to conserving the natural resources of the Lower Mississippi River floodplain. LMRCC focuses on habitat restoration, landscape level conservation planning, and natural resource-based economic development. The U.S. Fish and Wildlife Service (USFWS) leads the effort and provides a full time coordinator. The U.S. Geological Survey, USACE, U.S. Environmental Protection Agency, and U.S. Department of Agriculture Natural Resources Conservation Service are cooperating agencies.

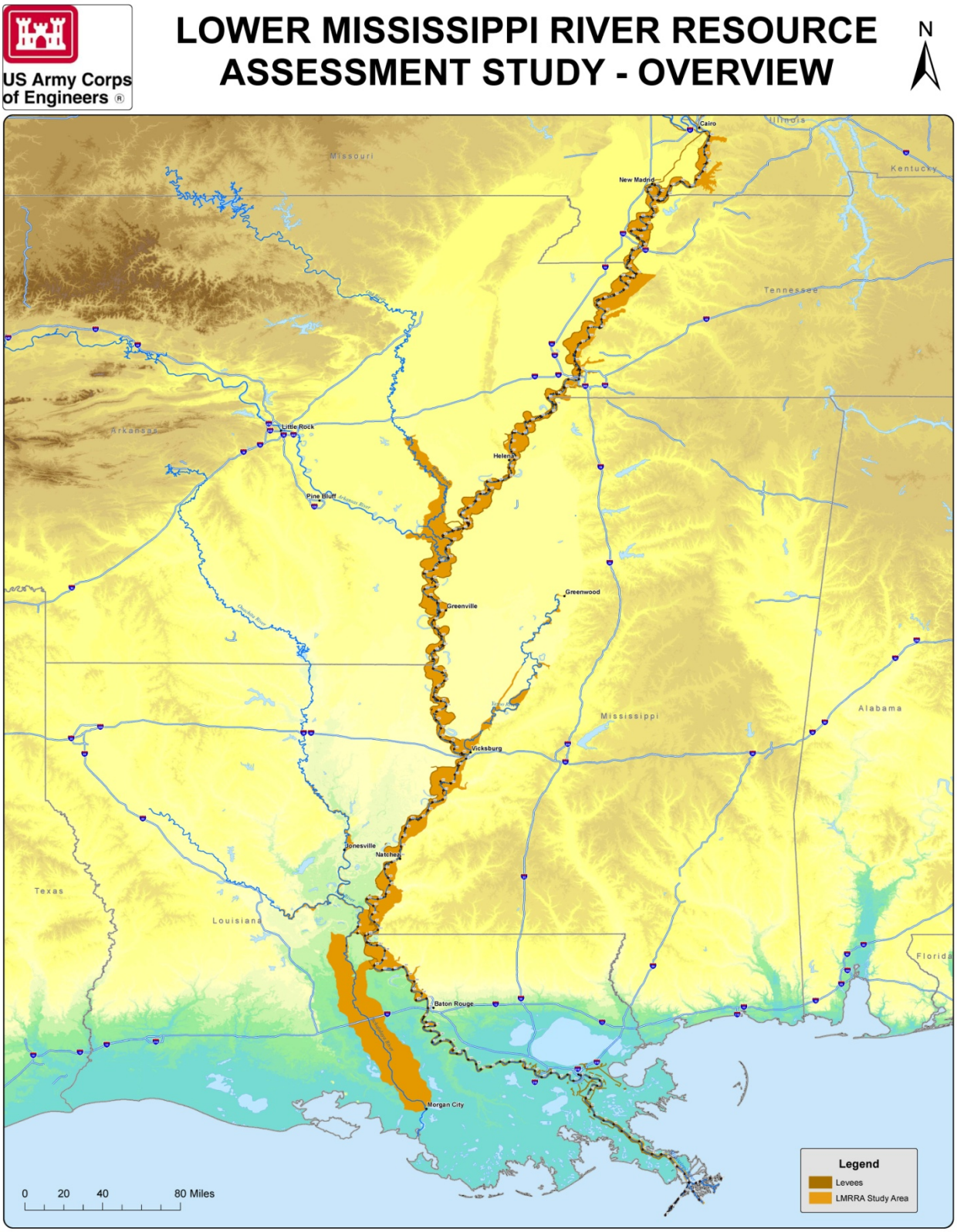

Figure 1. Authorized study area extending from the confluence of the Mississippi and Ohio Rivers to Head of Passes including the Atchafalaya Basin

II. OUTDOOR RECREATION

Outdoor recreation can generally be defined as activities that take place in a natural or semi-natural setting. It includes pastimes such as fishing or boating, but does not generally include organized sports, gardening or sightseeing. Outdoor recreation activities are popular throughout the LMRR. Many of the people who live in the region participate in some kind of outdoor recreational activity. The most common outdoor recreational activities in the LMRR are bicycling, paddling, fishing, bird and wildlife watching, and hunting.

Based on data for 2010, outdoor recreation generates 6.1 million American jobs, $646 billion in annual spending, and almost $40 billion each in federal tax revenue and state/local tax revenue (OIA 2012). Outdoor recreation in the LMRR generates over $1.3 billion in direct revenues. In 2011, there were 38 million outdoor recreational trips in the LMRR (IEc 2014). Figure 2 displays the number of outdoor recreation trips generated in the counties and parishes in and around the study area. These trip estimates are extrapolated from state level data using variables that best approximate the relative intensity of a particular recreational activity. For example, because wildlife watching frequently occurs on protected lands such as state or Federal parks or refuges, trips for wildlife-watching are approximated using the number of protected acres in each county. Hunting trips are allocated based on the number of deer harvested in each county, while fishing trips are estimated using acres of water features in each county (IEc 2014).

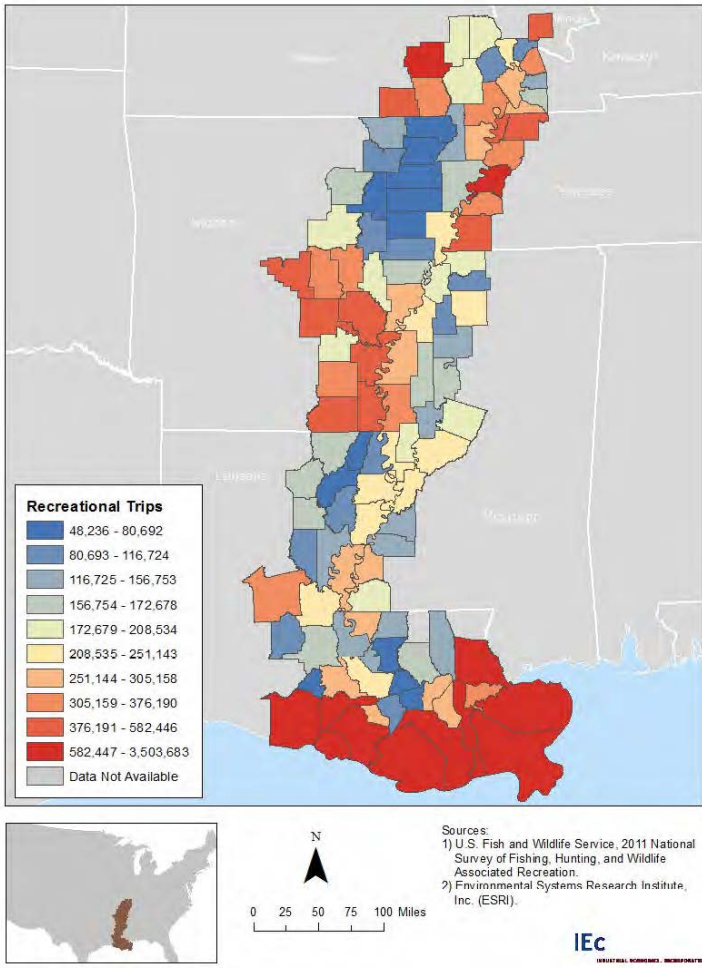

Figure 2. Outdoor Recreation Trips by County in 2011 (IEc 2014)

Bicycling

Riding bicycles is a common recreational activity in the LMRR. The public is enthusiastic about expansion of bike lanes and projects such as the Harahan Bridge in Memphis, TN which will provide a pedestrian and bike lane over the Mississippi River. New Orleans' levees are popular for biking and bike lane closures are an issue for residents who use them for commuting, exercise and recreation. (Drew 2013 & Tabachnik 2014). Non-profit organizations are discussing the potential for more trails on levees with levee boards throughout the LMRR.

Learning to ride a bicycle is almost a rite of passage for children in the United States. It is said that once you learn to ride a bike, you never forget. The 60 million American bicyclists would seem to agree. Biking is popular across all demographic groups – ethnicity, age, gender, education, and economic status. Recreational biking generates 1.1 million American jobs (Yellow Wood 2013).

Biking is an economic stimulus and job growth medium. It has positive impacts to property values and local economies. Biking improves neighborhood safety and quality of life and increases accessibility to natural environments. It provides opportunities for physical activity and improves public health. Studies have shown the economic benefit of trails and bicycle facilities outweigh their costs by as much as 9 to 1. In one survey, 36% of the respondents listed walking/jogging/bike trails as the most important element considered when moving into a new neighborhood (The Business of Trails 2009).

Figure 3. MRT directional sign

The Mississippi River Trail (MRT) parallels the river from Louisiana to Minnesota. It is approximately 3,000 miles of on-road bikeways and pedestrian and bicycle pathways for the recreational enjoyment, health, conservation and tourism development of river communities, river states and the nation. The website offers sectional maps of the route with information about parks, wildlife refuges and camping opportunities (mississippirivertrail.org). Another area trail is in the Delta Heritage Trail State Park in southeast Arkansas. It is a 73-mile trail including rails-to-trails conversion along a railroad right-of-way from Lexa to Cypress Bend, AR, and paved levee tops. The first 14 miles of trail are open. When completed, the trail will offer sweeping views from bridges that span the Arkansas and White Rivers (arkansasstateparks.com/deltaheritagetrail/).

The Louisiana Mississippi River Trail is a proposed 92-mile levee top path along the Mississippi River from New Orleans to Baton Rouge, LA. The project goals include economic development that will assist with recovery and growth; increasing accessibility to the Mississippi River for citizens and tourists; and improving the quality of life, safety, and public health. The Pontchartrain Levee District, the State of Louisiana, the Baton Rouge Area Foundation, and East Baton Rouge, Ascension, Iberville, St. Charles, St. James, and St. John Parishes partnered to complete a feasibility study for this trail.

America by Bicycle is organizing The Great Mississippi River Ride. This is an outfitted ride covering 1,700 miles from New Orleans to Minneapolis, MN from May 12 to June 6, 2014. The ride is broken into Southern, Central and Northern segments following the Great River Road National Scenic Byway and the Mississippi River Trail. Individual riders will pay almost $7,000 for the full 25 day trip (americabybicycle.com/Miss/).

There are at least 21 dedicated bicycle shops in the LMRR, mostly in the larger cities. Many large department stores also sell bicycles, helmets, and other gear. There are no bicycling

outfitters in the LMRR, but some of the larger national outfitters or local bike shops may provide services if there is enough demand and lead time.

There are only short stretches of the MRT that offer views of the Mississippi River. There are no bridges over the river currently open to bicycles, but there are several ferries in Louisiana that accept bicycles. There is a project underway that will open the Harahan Bridge at Memphis to bicycles and pedestrians. The old railroad bridge at Vicksburg, MS has been opened to bicycles for special events and there is interest in opening it permanently.

Figure 4. Bike Race across the Mississippi River at Vicksburg, Mississippi

Bicyclists need more bike lanes and dedicated bike trails so that people of all ages and abilities are better able to enjoy the LMRR. More trails within view of the river are also needed. Road surfacing is an obstacle to bicycling on many rural roads that might otherwise be good options. Roads and trails must be paved to allow the full spectrum of bicyclists. Traditional paving is expensive to install and maintain, and other surfacing options should be investigated.

Paddling

There are 24 million paddlers in North America and the popularity of kayaking is growing (USFWS 2006). Paddling generates over 300,000 American jobs (Yellow Wood 2013). Paddling canoes and kayaks is also becoming more popular in the LMRR. Public meeting attendees in Dyersburg are happy about the recent addition of canoe launches on tributaries and the river trails with developed launch points and other facilities for paddling. About half of the LMRR paddlers come from the states along the river, or neighboring states. There are hundreds of paddlers who come down the Mississippi every year on long distance expeditions (Ruskey pers. comm. 2013).

The LMR is the longest free-flowing river stretch in the continental United States. The 2,300 mile Mississippi River is noted as the greatest water trail in America (Ruskey pers. comm. 2013). It offers spectacular paddling opportunities on the main channel, back channels and other connecting waterways. There are 954 miles of main channel paddling through Missouri, Kentucky, Tennessee, Arkansas, Mississippi and Louisiana. Approximately 2,000 miles of back channels are available during high water and 1,000 miles of passes, and chutes are open in

medium water. There are more opportunities on the main tributaries, like the Forked Deer, Hatchie, White, Yazoo, and Red Rivers. The connection through the Old River Lock and Dam into the Atchafalaya River system creates an alternative route to the Gulf of Mexico for long distance paddlers. The Mississippi River from Baton Rouge to the Gulf of Mexico is highly industrialized and safety and security concerns limit its recreational value for paddling.

Thousands of paddlers participate in annual canoe and kayak races. The Memphis Canoe & Kayak race is the largest such race in the southeastern United States. The Bluz Cruz is a spring race that begins in Louisiana and races north into Mississippi. The Phatwater events, near Natchez, MS, are held in the fall.

Figure 5. Floating Canoe Launch on Forked Deer River near Dyersburg, TN

There are a few shops in the LMRR that sell canoes and kayaks. These are mostly in the larger cities. There is one paddling outfitter on the LMR offering only full service, reserved trips. There are no options for canoe rentals, shuttles for unguided paddlers or unreserved canoe trips on the Mississippi River. These services are available on tributaries.

Paddlers need more places to access the river and launch canoes and kayaks. The existing boat ramps are designed for motor boats. The ramps launch into deeper water immediately adjacent to the commercial navigation channel. Paddlers would prefer safer spots to launch and paddle, such as side channels, backwaters and tributaries. Paddlers often have to cross the navigation channel to reach those areas. There have been no documented collisions between commercial vessels and canoes or kayaks, but fear of barges keeps many people off of the water. The public throughout the LMRR would like more access to put in and out on the Mississippi River and allow for more leisurely day trips. There are also long distance paddlers who would like more access points to resupply or get assistance.

Fishing

Fishing is the most popular outdoor recreational activity in the LMRR. Anglers are generally satisfied with the quality of the fishing. Public meeting attendees talked about the lack of boat ramps and discussed problems with some existing ramps. There were also comments regarding the poor condition of some borrow pit and floodplain lake access roads. Several anglers commented about fishing quality in the wake of the 2011 flood and 2012 drought; some found it better than usual while others commented it was worse than usual.

There are 33 million anglers in the United States and they spend around 550 million days fishing annually. Anglers spend over $40 billion every year (USDI 2011) and generate nearly 600,000 American jobs (Yellow Wood 2013). Between 2006 and 2011, the popularity of fishing rose 3%. Fishing is popular across all demographic groups – ethnicity, age, gender, and education levels. There are 1 million anglers over the age of 75. Fishing accounts for 67% of the outdoor recreational activity in the LMRR (USDI 2011).

Figure 6. Fishing from the Boardwalk at Reelfoot Lake

There are 150 fish species in the Lower Mississippi River. The Lower River offers a broad habitat range including: fast current in the main river channel, sandbars, cut and stabilized banks, dikes, plunge pools, island points, oxbow and floodplain lakes and borrow pits. There are a variety of fishing methods used on the Lower River including: rod and reel fishing, trotline, limb line fishing, jug fishing, and drift fishing. Catfish are the most popular sport fish on the Lower River. Blue catfish, channel catfish, and flathead catfish are all popular sport fish. Other popular game species are crappie, bluegill, largemouth bass, white bass, striped bass, freshwater drum, and common carp. The popularity of catfishing seems to be on the rise. There are several guide services available including one out of Vicksburg, MS for hook and line fishing for big catfish.

John Jamison, a professional catfish angler, stated:

"In my opinion the number one untapped fishery nationwide is the Lower Mississippi, specifically from Memphis south. It's drastically underfished, and the farther south you go the bigger the river gets. My money is all on the lower Mississippi holding a world record [catfish]." (in-fisherman.com/2011/10/28/where-monster-blue-catfish-live/)

Fishing is regulated at the state level. The Mississippi River forms the boundary between the LMRR states, and many have reciprocal license agreements to make it easier for fishermen. Anglers can check river gages online to prepare for river conditions. *Fishing the Lower Mississippi River: A Sport Fishing Guide* is available for download or viewing at lmrcc.org. It covers fishing and habitat on the main channel, side channels, floodplain lakes and chutes from Cairo, IL to the Gulf of Mexico. The guide provides techniques to catch crappie, catfish, white bass, and other game fish. It includes safety and access information and is linked to detailed maps showing boat ramps, dike fields, public lands and other features.

Anglers need more boat ramps in the Lower River. They especially need boat ramps in slack water areas that are safer to launch into and provide more direct access to good fishing areas. Some of the floodplain lakes are not accessible and many local roads are in disrepair. More bank

fishing access points are also desirable. Programs to encourage safe boating and life jacket use are in place on many reservoirs, but need to be expanded to the main-stem Mississippi River.

Bird and Wildlife Watching

Bird and wildlife watching was a popular topic at the public meetings. Most of the attendees mentioned birds they have seen and photographed. Several noted seeing fewer brown pelicans and cormorants over the last couple of years.

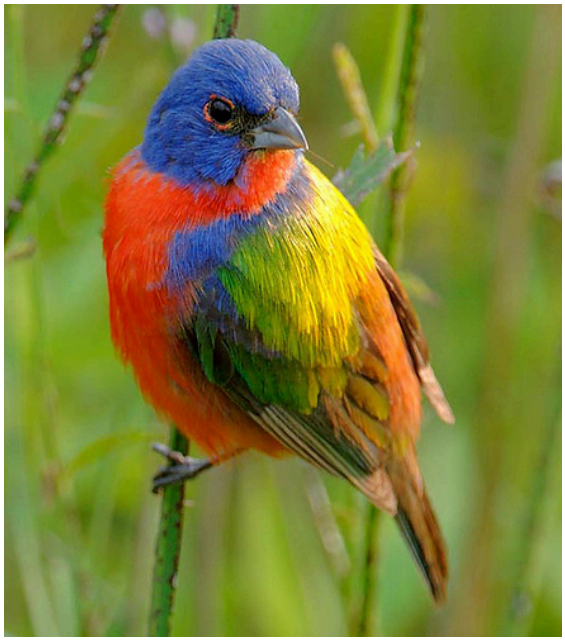

Figure 7. Painted Bunting

Wildlife watching is popular in the U.S. and growing at about one percent per year in participation and expenditures. In 2011, nearly 72 million people 16 years old or older spent about $55 billion on wildlife watching. There are 46.7 million bird watchers. Bird watching is the most popular form of wildlife watching. Waterfowl, raptors, and songbirds attract the most interest. About 74% of people also watch mammals, 22% fish, and over 40% watch other forms of wildlife such as insects, spiders, amphibians, or reptiles (USFWS 2011).

Wildlife watching is popular throughout the LMRR at refuges, state parks, local parks, non-profit conservation lands and land trusts, private hunting and fishing clubs, and along quiet roadsides. Local and regional birding trail systems highlight some of the best wildlife watching sites. Louisiana, Mississippi, Tennessee, Arkansas, and Kentucky all have birding trails in the LMRR. Websites, maps, brochures and species lists guide visitors to high quality birding and wildlife watching sites. The Cornell Lab of Ornithology and the National Audubon Society maintain the eBird website (eBird.org). It has become the central repository for bird watcher submitted observations in the U.S., and has expanded worldwide. The website is a good tool for finding favorite local bird-watching destinations, accessing site lists based on real-time observations, and learning about recent rare bird sightings.

Wildlife watching in the LMRR is exceptional year-round. Neotropic migrants like yellow-billed cuckoo, prothonotary warbler, painted bunting, and swallow-tailed kite, and shorebirds like semipalmated sandpipers, long-billed dowitchers, and pectoral sandpipers pass through in the spring and fall. In fall, short-distance migrants, such as white-throated sparrow, hermit thrush, blue-headed vireo, ruby-crowned kinglet, yellow-bellied sapsucker, and yellow-rumped warbler are common. Bald eagles are becoming more common in the area, breeding in winter or early spring. People may also see deer, black bear, bobcat, beaver and other animals.

Many parks and recreational areas provide boardwalks, trails and other nature-viewing opportunities for accessing bald cypress-tupelo swamps. These are good places to view bald

eagles, barred owls, American alligators, turtles, water snakes, crayfish, raccoons, and many other animals. Wood ducks, cavity nesting residents of these flooded forests, as well as a variety of other wintering waterfowl, are important not only to recreational hunters, but also to wildlife watchers. The pileated woodpecker, and about half a dozen other woodpecker species are common in the relatively remote swamps in the LMRR.

Many local bird-watching, hiking, paddling, and nature clubs introduce visitors and residents to fun and exciting wildlife-watching experiences. Through these networks, local experts direct or lead interested wildlife watchers to enjoyable seasonal destinations. Guide services are also available. They offer guided hikes and nature walks, boat tours of backwaters to visit remote flooded forests, and bird and wildlife viewing trips.

Bird and wildlife watching needs are similar to those for paddling, and bicycling. Wildlife watchers need more access in less developed areas. Canoes and kayaks can provide access to back channels and side channels where shorebirds and wading birds are more common. Dedicated bicycle trails would allow both bicycle and pedestrian access to quiet areas. There are good interpretative facilities at state parks and National Wildlife Refuges, and these areas could develop better access for people with limited mobility.

Hunting

Hunting was not an issue during the public meetings, but it is extremely popular in the LMRR. In 2011, hunting trips accounted for 22% of all outdoor recreation trips in the LMRR. There are nearly 14 million hunters in the United States and they spend around 282 million days hunting annually. Hunters spend over $30 billion every year (USDI 2011) and generate 323,000 American jobs (Yellow Wood 2013). There are 8.3 million hunting trips taken in the LMRR each year (IEc 2014). The LMRR, especially the Grand Prairie Region and Lower White River of Arkansas are world-renowned duck hunting destinations. The Wings Over The Prairie Festival and the World Champion Duck Caller contest occur in Stuttgart, AR, every November.

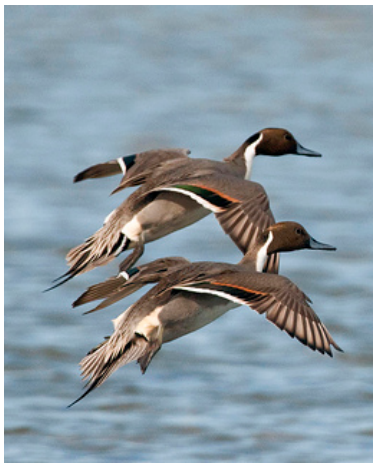

Figure 8. Northern Pintails

Land cover in the LMRR provides excellent opportunities for hunting many types of game. The majority of the region is farmland with forests occurring along the edges. Wetlands dominate the southern area of the region. The most popular game, other than waterfowl, is white-tailed deer. Squirrels, rabbits, alligators and upland birds such as wild turkeys are also hunted.

Hunters in the LMRR are generally satisfied with their recreational opportunities. Most of the land is privately owned, but hunters use the available public lands, buy hunting leases, join hunt clubs, or seek landowner permission. There is an abundance of waterfowl hunting outfitter guide services that provide access to private lands.

Safety

Safety on water bodies is always a concern. The USCG keeps records of accidents and provides safety training and information for boaters to avoid accidents. There were four collisions on the Lower River in 2011 involving recreational vessels; three in Illinois and one in Missouri. All of these accidents involved motorized watercraft. There were no collisions on the River between recreational and commercial vessels. The location of boat ramps is a concern; many ramps are located in swift water areas very close to the commercial navigation channel. These ramps are less safe and usable for smaller crafts including canoes, kayaks, jon boats and others with small engines. Most of the recreational users want to access the quieter side channel and back water habitats, but have to cross the navigation channel to reach those areas. Ongoing programs to educate people about life jacket use and boating under the influence need to be targeted to Mississippi River boaters.

Figure 9. Life Jacket Campaign

Water quality in the Mississippi River is good and steadily improving, but the general public perception is that water quality in the river remains poor. Conflicting advisories on fish consumption add to the public's misperception. River managers recognize the need to develop education and outreach tools for the general public to explain or rate water quality so they can make informed decisions about water quality and recreational activities. This was identified as a need in the LMRRA Assessment of Information Needed for River Related Management.

On road biking with traffic can be dangerous. Quieter, less used roads in rural areas are preferred over main roads, but there is often a lack of services for emergencies and poor cell phone coverage. Bicyclists are safest on dedicated trails that have moderate bicycling traffic and services at frequent intervals. Programs to encourage helmet use and teach road sharing for both bicyclists and motorists are needed.

III. TOURISM

The LMRR receives millions of visitors every year. They come for music festivals like the Beale Street Music Festival in Memphis, King Biscuit Blues Festival in Helena, AR, Delta Blues and Heritage Festival in Greenville, MS, and Jazz Fest in New Orleans. They come for events like Mardi Gras in New Orleans and the World Championship Barbecue Cooking Contest in Memphis. They come to visit museums dedicated to Native American history, antebellum history, the Civil War and regional folklore. They come for casinos, concerts, food and family. They come to Graceland to pay their respects to the King. People come from all over the United States, and all over the world.

Many public meeting attendees host visiting family members and friends who visit parks and museums. Attendees would like more riverfront access especially for those who are mobility-impaired.

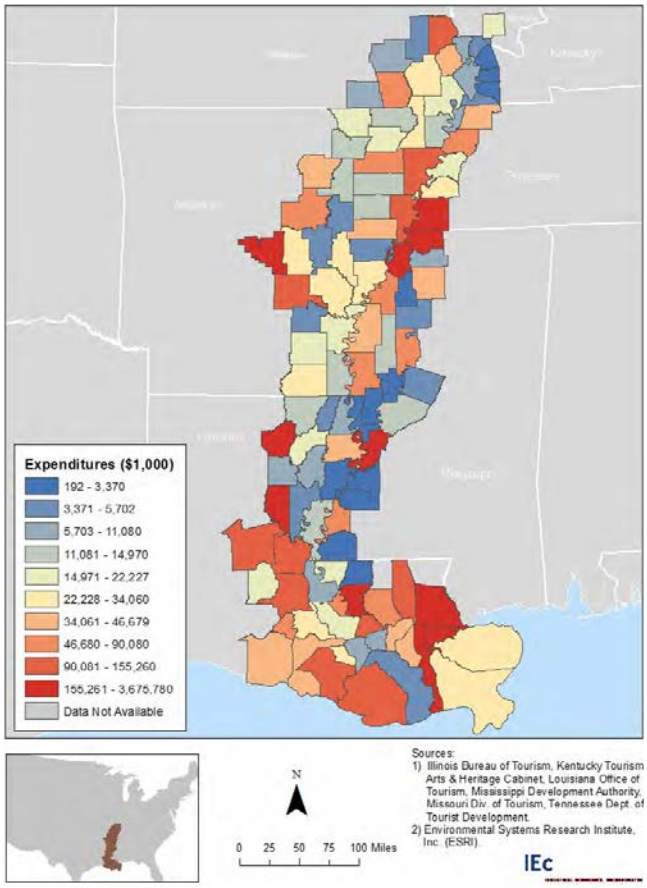

Figure 10. Annual Tourism Expenditures by County and Parish in 2011 (IEc 2014)

Tourism in the LMRR generates $15.5 billion in direct revenues. Figure 10 shows tourism expenditures by county. Tourism is a major employment sector in the LMRR; more than 190,000 people work in the region's hotels, restaurants, casinos, museums and other attractions. Most of the activity is centered in Memphis and New Orleans (IEc 2014).

Motor Routes

Road trips have been an American tradition since the invention of the car. Forty percent of American adults drive for pleasure, making it the second favorite recreational activity behind walking. Vehicle trips are the most economical option for families and provide opportunities to see sites along the way to vacation spots, family reunions and other events. The Great River Road (GRR) follows the Mississippi River for 3,000 miles through ten states, making it America's longest National Scenic Byway. Scenic byways are established to promote and enhance the intrinsic qualities of an area. A byway must possess at least one of the following qualities: scenic, archaeological, cultural, historic, natural, or recreational. The Mississippi River corridor is rich in all of these, but the byway designation focused on the cultural and historic qualities.

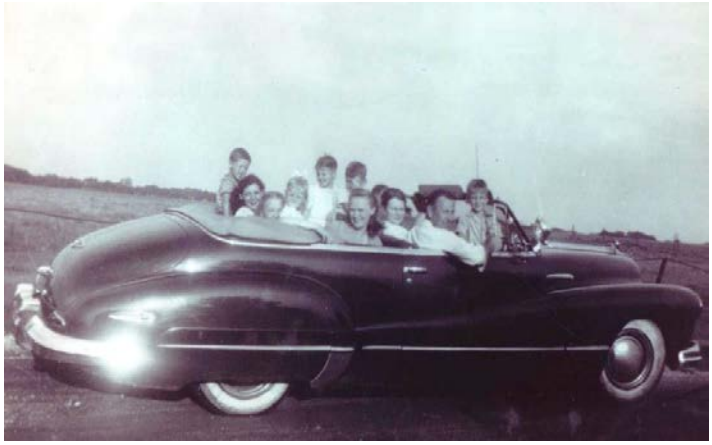

Figure 11. Family enjoying a new car in 1948

The GRR lies on designated highways, state routes, and local roads. The GRR is signed, but signs are often damaged or lost, and printed maps do not necessarily provide specific routing directions and GPS (global positioning system) navigation systems do not have byways available. The GRR website (experiencemississippiriver.com) links a variety of attractions and activities together. It currently has information on museums and interpretive centers, biking, birding, paddling, fishing and other activities and is working to include agritourism and other features. The Blueridge Parkway in Virginia and North Carolina is estimated to generate $1.8 billion in the counties along the parkway (scenic.org).

The public meetings gathered people who live in the LMRR and they had little to say about motor routes in the area. The Yellow Wood Report (2013) noted a lack of lodging and dining options that may limit the area's tourism value. Lodging needs range from camping and RV (recreational vehicle) parks to bed and breakfast inns and higher end hotels. The LMRR has many iconic foods and some are highlighted in trails such as the Boudin Trail, the Gumbo Trail, the Tamale Trail, and the BBQ Trail. The Food Network produced a series of shows called Feasting on Asphalt that highlighted local foods and diners along the GRR. Even with this emphasis on food, there are long stretches of road with no restaurants, especially in the agricultural areas in the northern part of the LMRR.

Parks and Vistas

The topography of the LMRR limits the number of vistas offering a broad view of the river. Hickman Bluff, KY provides a broad view of the river valley, but the river itself is only visible at high water. There are good views available from Columbus-Belmont State Park, KY, the Lower Hatchie National Wildlife Refuge, TN, Fort Pillow State Park, TN and Meeman-Shelby Forest State Park, TN, but there are no trails or signs to direct people to these sights. One of the best views of the Lower River is from the Ornamental Metal Museum

Figure 12. View of the Mississippi River from the Lower Hatchie National Wildlife Refuge

in Memphis. Outside of these areas, there are few elevated vistas of the river, except from bridges and buildings.

There are numerous parks that provide riverfront views including Fort Defiance Park in Cairo, New Madrid City Park, MO, Great River Road State Park in Rosedale, MS all along the riverfront in Memphis, and parks in New Orleans and Helena, AR.

The public would like more public parks, picnic areas and accessible vistas. They would also like interpretative signs and centers that tell the story of the river. There are limited places to view the Lower Mississippi River, but there is potential for river view trails in several state parks. Riverfront parks are limited in Arkansas, and Mississippi. There is potential for a rest stop/visitor center complex at each of the bridges over the river.

Museums and Cultural Sites

In the U.S., over 70% of leisure travelers (118 -130 million adults) participate in cultural and/or heritage activities while traveling. In the United States, cultural/historical tourism, known as "heritage tourism," focuses on the culture and history of a specific region, and the heritage of its resident ethnic groups. Heritage tourists spend an average of $1,000 per excursion (Yellow Wood 2013). Heritage tourism frequently focuses on traditional communities that have distinct customs and art forms, such as the Cajun or Acadian culture of South Louisiana. In many cases the history of a particular region, such as the South, has shaped the cultural elements that make it distinctive. In the LMRR for example, Civil War history, slavery, and the fight for Civil Rights are just as important as cultural features such as music, art and food.

There are approximately 25 museums in the Lower Mississippi River Valley that offer exhibits relating to the history, environment and culture of the LMRR. Mud Island River Park and Museum in Memphis, Tunica River Park and Museum, MS, Lower Mississippi River Museum in Vicksburg, and the Cairo Customs House offer exhibits highlighting the Mississippi River and its history. The National Civil Rights Museum in Memphis chronicles the struggle for Civil Rights in the South. Visitors to New Orleans can visit the National World War II Museum.

Native American historic sites in the LMRR date back as far as 1700 B.C. at Poverty Point State Historic Park, LA. Indian Mounds can be seen throughout the LMRR at sites like Wickliffe Mounds State Park, KY, C.H. Nash Museum at Chucalissa, TN, Emerald Mound Site and Winterville Mounds State Park, MS. Other Native American sites include Hampson Archeological Museum State Park, AR Grand Village of the Natchez Indians, MS and Trail of Tears State Park, MO. A visit to one of these sites could be incorporated into almost any trip into the

Figure 13. Family visiting Native American Mound site

LMRR and a Native American itinerary following the GRR could cover 3,500 years of history and several distinct cultures in just three or four days.

There were European settlements in the LMRR as far back as the late 17th century. The first semi-permanent French settlement in the lower Mississippi River Valley was established in 1686 and is now Arkansas Post National Memorial in Gillett, AR. The territory known as New France included much of the Mississippi River drainage basin and stretched from the Gulf Coast all the way to the Great Lakes and from the Appalachian Mountains to the Rockies. France and Spain alternately ruled the area and towns such as New Madrid and New Orleans arose in this period. The French Quarter in New Orleans is one of the few places that survive from this era. Antebellum sites abound on the east bank of the Mississippi River where the land is higher. The city of Natchez is one of the best preserved towns from that time. Numerous plantation homes in Louisiana are well preserved and maintained for tourism.

Figure 14. Vicksburg National Military Park

During the Civil War, control of the Mississippi River was a key military objective of the Union. Grant's Union forces pushed down from Cairo and up from New Orleans and met at Vicksburg for a six week siege that ended July 4, 1863. Vicksburg is home to the Vicksburg National Military Park, Pemberton's Headquarters, and the USS Cairo. Vicksburg National Cemetery is the largest interment of Civil War dead in the nation. In 2013, the State of Mississippi installed 37 markers to guide tourists along General Ulysses S. Grant's route, the Grand Gulf-Raymond Scenic Byway. They intend to print a guide to accompany the markers so tourists can stop and read about Grant's decisions (Associated Press 2013). Port Hudson was the last Confederate controlled fort on the river. The battle at Port Hudson, LA was the longest siege in American history. It took 48 days, for 40,000 Union soldiers to defeat 7,500 Confederates. Other Civil War sites can be found at Fort Pillow State Park, TN, and Columbus-Belmont State Park, KY.

The Natchez Trace Parkway extends into the LMRR. The parkway follows a ridgeline extending from Natchez to Nashville, TN. Bison, deer and other large mammals likely created the first paths. Choctaws, Chickasaws, French explorers, missionaries, and many others used the trail throughout the years. It is popular for driving and bicycling, but the National Park Service encourages bicyclists to avoid certain areas during high traffic periods.

Riverboats

Mark Twain and others made Mississippi riverboats famous around the world. Riverboat cruises became popular as soon as the steam engine was introduced in the early 19th century, but they dwindled in the early 20th century. Port to port river cruises are again becoming popular on the Mississippi and worldwide. Over the past five years international river cruises have enjoyed a 10% passenger increase. In 2011, the American Queen rejoined the Queen of the Mississippi to

provide river cruises. Efforts are underway to return the Delta Queen to service and Viking River Cruises, well-known for European river cruises, has announced plans to come to the Mississippi River (Sullivan 2013).

Cruises include historic stories, live music, dancing, and local cuisine. Most of the cruises have an historic or cultural theme. The riverboats dock at historic cities such as Hannibal, MO, Memphis, Natchez, Baton Rouge, New Orleans, and many other towns along the river. These stops offer excursions for historic tours, nature tours, music shows, or culinary events depending on the area. The river cruises offer views of the wilderness, bluffs, historic cities and towns, and the river itself that are not seen from anywhere else.

Many small towns have inadequate facilities for the riverboats to dock and allow passengers of varying physical abilities to disembark. The high water in 2011 and the extreme low water in 2012 prevented the river boats from docking at some of their scheduled locations, resulting in lost revenue for towns like Helena, AR. Chamber of Commerce representatives up and down the river envision future facilities that would ensure more consistent access for passenger vessels.

Figure 15. The Mississippi Queen

IV. CONCLUSIONS

"From mountains to deserts and from sea to shining sea, America's great outdoors have shaped the rugged independence and sense of community that define the American spirit. Our working landscapes, cultural sites, parks, coasts, wild lands, rivers, and streams are gifts that we have inherited from previous generations. They are the places that offer us refuge from daily demands, renew our spirits, and enhance our fondest memories, whether they are fishing with a grandchild in a favorite spot, hiking a trail with a friend, or enjoying a family picnic in a neighborhood park. They also are our farms, ranches, and forests -- the working lands that have fed and sustained us for generations." (America's Great Outdoors)

Figure 16. American family outing in 1912

Recreation improves quality of life, and builds community cohesiveness. Recreation's value and the need to plan for it has been recognized for centuries. Cities around the world have developed their waterfront areas for public use and enjoyment. Recreation is part of the American heritage and experience. Generations come together to fish, hunt, camp, and enjoy the outdoors. Children are raised on the traditions, stories and tall tales of their families. Family outings and vacations are important bonding experiences; these are the events people remember, memorialize in photographs and write letters about.

Museums, festivals, historic sites and even cemeteries provide opportunities for society to share its values. History books chronicle the Civil War, but standing in a cemetery full of soldiers teaches the true cost of war. Native American Pow Wows celebrate traditions that were nearly lost. The National Civil Rights Museum provides context for ongoing struggles within society. Sites celebrating music, folklore, art, and food highlight diversity, talent, and heritage. These are important for society.

Outdoor recreation opportunities are important for the health of the public. According to the Centers for Disease Control, five of the seven states within the LMRR rank in the top ten for obesity and physical inactivity among adults. For children, six of the seven are among the ten worst. Outdoor recreation is believed to be key to the fight against obesity. In 2010, The Mississippi River Connections Collaborative, which includes the USFWS and the National Park Service, hosted "Let's Move Outside Southwest Mississippi" to celebrate and encourage outdoor recreation (letsmove.gov). In 2007, President George W. Bush said:

"One way for this nation to cope with the issue of obesity is to get people outside - whether it be through sports or hiking or conservation. So we'll encourage them to do that, encourage parents to encourage their children to participate in the great outdoors," (funoutdoors.com).

Recreation's importance to quality of life may be hard to measure, but its economic impact is hard to ignore. Outdoor recreation generates $646 billion in annual spending in the U.S., and almost $40 billion each in federal tax revenue and state/local tax revenue (OIA 2012). The outdoor recreation economy grew approximately 5 percent annually between 2005 and 2011while many other sectors contracted (OIA 2012). Outdoor recreation and tourism generate nearly $17 billion annually in the LMRR. These revenues are important for schools, infrastructure, programs and services.

The outdoor recreation industry supports 6.1 million American jobs. Unemployment in the LMRR is higher than the national average especially in the rural counties of Arkansas and Mississippi where unemployment frequently exceeds 10%. Employment rates are better in more industrialized areas around Baton Rouge and New Orleans. In the LMRR, manufacturing employs 207,000 people while tourism supports 190,000 jobs (IEc 2014).

The area is generally viewed as an agricultural zone and its value to the nation and world should not be understated, but its contribution to the labor market has declined. The midpoint acreage for U.S. cropland doubled from 1982 to 2007. The average farm is now over 1,000 acres. Larger farms use less labor per acre harvested than smaller farms (MacDonald et al. 2013). Agriculture still employs over 56,000 people in the LMRR, but the Bureau of Labor Statistics predicts it will continue to decline. Outdoor recreation already employs almost as many people (54,000) as agriculture and it has potential for growth.

There is an emerging trend toward experiential travel; more than four out of ten travelers are participating, particularly in rural areas (www.tnvacation.com). Experiential travelers immerse themselves in the local culture or engage in activities that bring them close to nature. These travelers might enjoy adding a day of canoeing to a trip visiting Native American sites, or taking cooking classes after learning about how food is grown and harvested. Agritourism is a type of experiential travel that is under-developed in the LMRR.

Several recreation and tourism needs have been identified in the LMRR. Meeting these needs could increase revenue and employment both regionally and nationally and would improve the quality of life in LMRR communities. There are many opportunities in the LMRR to link outdoor recreation with other travel purposes. The region offers a wide variety of outdoor recreation activities and there are many events and sites that draw people to the area. People who visit the area to attend Mardi Gras, visit Graceland or go duck hunting generally do not have any contact with the Mississippi River, but more cross marketing could change that and encourage longer stays in the region.

Outfitters and Guides

More outfitters and guides are needed to get visitors in the region to spend time on or near the Mississippi River. Many travelers may be interested in spending a day biking, fishing or canoeing in the area, but will not want to bring the equipment with them. Outfitters and guides are also important to provide safe experiences.

Boat Ramps

There are 129 boat ramps on the Lower Mississippi River. Only 50 of the counties on the Lower River have a boat ramp. Many of the ramps that do exist are located in fast water areas near the commercial navigation channel and are not preferable for smaller craft including canoes. More boat ramps located near side channels and back channels would encourage more and safer river use for paddling, fishing and general boating. Canoes and kayaks can be launched anywhere with a parking area, access to the water's edge and a gentle slope into the water. Motorboats require a larger parking area to accommodate trailers and a hardened boat ramp.

Figure 17. Boat Ramp near Navigation Channel

Non-local paddlers spend an average of $503 per excursion and anglers spend $1,261 every year (Yellow Wood 2013). Studies in North Carolina show paddlers spent over $270,000 on local trips and almost $1 million on non-local trips. The coastal plains water trail system provides 2.4 percent of total tourism economic impact in North Carolina (Benjamin 2009). Additional ramps on the Mississippi River and some larger tributaries will increase access and safety and provide more opportunities for recreational paddlers and fisherman as well as outfitters and guides. Increasing access to the river can bring more money to the local economy and satisfy the needs of paddlers who live near the river.

Parks and Vistas

There is a need to improve undeveloped riverfront areas in many towns along the Mississippi River. A few simple improvements could increase the usability of these areas; namely designated parking, shelters, picnic tables, and routine mowing and trash pickup. Local residents would appreciate these small gathering spots and they would provide excellent venues to teach people about the river. Informational signs could offer historical information as well as information about navigation and flood risk management on the river.

The topography of the LMRR limits the opportunities to see the river from natural vistas. There are a few places in state parks and on other lands that offer good views, but they are not easily accessible or marketed. Signs and developed trails could lead people to these spots.

Riverboat Landings

Many small towns need better facilities for riverboats to dock and allow passengers of varying physical abilities to disembark. As the number of riverboats increases, there will be more opportunities for small towns to host passengers for day excursions. These landings can incorporate restaurants and interpretive facilities and become community assets beyond being riverboat docks. Beale Street Landing in Memphis links the world famous blues district with the Mississippi River.

Figure 18. Beale Street Riverboat Landing in Memphis, TN

Lodging and Dining

There is a lack of lodging and dining along the Lower Mississippi River. Both are readily available along the Interstate Highway corridors, but are generally lacking along the more rural routes. Agricultural land dominates the area and there are few commercial developments to provide lodging, camping, food, or other services. There is a need for a variety of lodging types including RV parks, family motels, and bed and breakfast inns. Long distance bicyclists, people experiencing the various Native American sites, touring Civil War sites and others would all benefit from more lodging options (Yellow Wood 2013).

Figure 1. Bicyclers on the MRT in Tennessee

Bike Trails

Americans spend more money every year on bicycling gear and trips ($81 billion) than they do on airplane tickets and fees ($51 billion) (OIA 2012). Bike trails and lanes in the major metropolitan areas of the LMRR are expanding. As biking is becoming more popular, the demand for linking existing trails and creating longer routes is growing. Bike trails on levees and converted railroad lines would likely provide a positive economic return on the investment. There are bicycle rental shops in downtown Memphis and New

Orleans that provide equipment for riding around downtown areas. The expansion of levee trails in Louisiana and the completion of the Harahan Bridge project at Memphis will spur more opportunities for bicycling in the region. Tourists who come to the region for festivals, bird watching, and family vacations may be interested in renting bicycles for day trips across the river or along the levees. Use of the MRT for multi-day rides would likely expand if lodging and dining facilities were available closer to the trail.

Interpretation

Although, the Mississippi River watershed drains all or parts of 31 states and 2 Canadian provinces and is the third largest watershed in the world, there is very little information provided to tourists or potential visitors. There are no signs to tell the public that the River creates $105 billion worth of U.S. Gross Domestic Product; provides drinking water for more than 18 million people; transports 62 percent of our nation's agricultural output; delivers nearly 400 million tons of coal and petroleum products annually; and directly supports one million jobs and indirectly supports millions more.

Figure 20. Interpretive Sign in Mississippi

The Mississippi River and Tributaries Project levees, floodwalls, backwaters and floodways form the world's largest and most comprehensive flood risk management system. The 2011 Flood drew national and international media attention and travelers in the area stopped to take a look at the River where they could. There is a need for signs and brochures for the public that explain and describe levees, floodwalls and features of the system that protects 1.5 million homes and other structures, and in 2011 alone, prevented $234 billion in damages.

Marketing

The Lower Mississippi River has some excellent recreational opportunities. There is a need for more recreation access, but there is also a need for better information and marketing of the opportunities that already exist. The Great River Road website (experiencemississippiriver.com) offers a lot of information to help travelers plan out trips, but there is a lot of information missing. There is also a need for more cross marketing to reach people who come to the LMRR for a particular event, but might be interested if other activities were more readily available.

Sightseers on the Vermont Scenic Byways spent 25% more money per day than people travelling for other purposes (scenic.org). The Mississippi River Parkway Commission is promoting driving the byway in September. GPS (global positioning system) navigation units are becoming standard for most travelers. People learn to depend on them to find hotels, restaurants, and other attractions. Scenic byways are not part of the standard package in most units, but some do have the option of downloading more features. The Great River Road does not follow a single highway route and can be difficult to follow if the roads signs are missing or not visible. GPS units are not programmed to follow the route. There are two commercial companies that collect

and update the information available on navigation units. Marketing the Lower River should include a dedicated effort to get the motor routes and attractions in the LMRR listed.

The Federal Highway Administration's National Scenic Byway program does offer Federal grants to expand roadways, add amenities such as signage, scenic overlooks, interpretive centers, restrooms, and parking areas.

Safety Programs

Safety can never be taken for granted especially around water and on roadways. There is a constant need for programs to teach water safety, safe boating, life jacket use, helmet use, and rules of the road for bicyclists and drivers. Although water quality in the river is generally good and contact is unlikely to cause harm, people should be reminded that drinking the water from any stream or river is not safe. The message of the safety programs needs to compliment marketing information to let people know there are many recreational activities which can be safe if the proper precautions are taken.

Other Recreational Activities

Motor boating, water skiing, camping, geocaching and hiking are not addressed specifically in this report and no specific needs have been raised in relation to them. They are related to many of the other activities that have been discussed and projects to improve fishing, paddling and birding access will likely improve facilities for other users as well.

There are many things to do in the LMRR that have not been addressed here. There are museums, parks, art galleries, famous restaurants, festivals and dinner cruises on small riverboats. Marketing initiatives would likely have benefits for all of these.

References Cited

Associated Press. 2013 December 30. Markers to help show Grant's path at Vicksburg. The Commercial Appeal. Online

Drew S. 2013 November 12. Project to raise Mississippi River levee will close bike path in Jefferson Parish. The Lens. Online

Garlington L. 2013 December 29. Digital X marks the spot for geocaches in Collierville parks. The Commercial Appeal. Online

IEc. 2014. The Economic Profile of the Lower Mississippi River: An Update.

MacDonald, James M., Penni Korb, and Robert A. Hoppe. *Farm Size and the Organization of U.S. Crop Farming*, ERR-152. U.S. Department of Agriculture, Economic Research Service, August 2013.

McLean, Daniel and Hurd, Amy. 2012. Kraus' Recreation and Leisure in Modern Society, Ninth Edition. Jones and Bartlett Learning.

Outdoor Industry Association (OIA). 2012. The Outdoor Recreation Economy.

Sullivan B. 2013 July 26. Group aims to restore historic Delta Queen to river service. The Commercial Appeal. Online

Tabachnik S. 2014 February 4. Opening of Mississippi River bike path delayed as corps fixes problems. The Lens. Online

U.S. Department of the Interior, U.S. Fish and Wildlife Service, and U.S. Department of Commerce, U.S. Census Bureau. 2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation.

Yellow Wood. 2013. Demand for Nature Based Tourism in the Lower Mississippi River Region.

References Reviewed

Websites

allaboutbikesllc.com
www.americabybicycle.com/Miss
www.americancanoe.org
ar.audubon.org/chapters/three-rivers-audubon-society
www.arbirds.org
www.arkansas.com/outdoors/biking/road-cycling
www.arkansas.com/outdoors/birding
www.arkansasbicycleclub.org
www.arkansasdelta.org
www.arkansasoutside.com/cycling-events
asafishing.org
www.batonrougebikeclub.com
bayoubicycles.com
bayoutechebearfest.ord
www.bccbike.org
www.bicycleworldla.com
www.bicyclemichaels.com
bicycleshop.com
www.bikelouisiana.com
www.bikepedmemphis.com
www.bikeride.com
www.bikesbelong.org
www.bikesbluesbayous.com
www.bikesplus.net
www.biketour-reviews.com
www.bikeworldky.com
biology.eku.edu/kos
www.birdlouisiana.com
www.blueshighway.org
bluzcruz.com
www.braudubon.org
www.cajuncoast.com
www.cajuncyclists.org
capebicycle.com
www.capitolcyclery.com
carpclub.com
www.clinetours.com
www.cottonramble.com
www.crcc.net
crescentcitycyclists.org
www.crt.state.la.us
www.culturalheritagetourism.org
www.cyclewerx.biz
www.cyclingarkansas.com
www.etourism-usa.com
experiencemississippiriver.com
fishandwildlife.org
www.gnocyclery.com
www.greatriverwatertrail.org
www.gulfcoastbicycleclub.com
harahanbridgeproject.com
www.illinoisbirds.org
island63.com
www.jacksonaudubon.org
www.jjaudubon,net
jmc.clubexpress.com
kayakmississippi.com
www.kentuckyaudubon.org/chapters/jackson_purchase
www.kentuckytourism.com
losbirds.org
www.louisianatravel.com
main2main.com
www.masseysoutfitters.com
www.memphishightailers.com
www.midcitybikes.com
midtownbikecompany.com
www.mississippiornithologicalsociety.com
www.mississippirivertrail.org
www.mizellfarms.com
www.mobirds.org
mscoastbirdingtrail.audubon.org
www.msrivertn.org
www.natchezbike.org
www.neworleansbicycleclub.org
www.northlakenature.org
www.outdoorsinc.com
oxfordcycling.org
www.peddlerbikeshop.com
peteandedbooks.com/bclubs
www.preserveamerica.gov
www.preservearkansas.org
www.preservationnation.org

rccbike.com
www.ridethefault.com
www.rivergator.org
www.semocycle.com
www.snowyegretenterprises.com
southernfoodways.org
southernliterarytrail.org
www.StansRockNRoll.com
strawberryplains.audubon.org
www.tarawildlife.com
www.tdot.state.tn.us/bikeped/routes
www.teamlasportracing.org
www.thebigdambridge100.com
www.thebikeshopnola.com
thebrat.org
www.tnbirds.org
www.tnvacation.com
www.tnwatchablewildlife.org
www.trailsrus.com/wildlife/kentucky_river
www.usacycling.org/clubs
www.usacycling.org/events
www.velogirardeau.org
www.visitmississippi.org
wp.ascabird.org

Documents

www.adventuretravel.biz/wp-content/uploads/2011/07/atdi_2010_report.pdf
www.agfc.com/resources/publications/watchable_wildlife_guide.pdf
www.arkansas.com/!userfiles/apt_2011_annual_report.pdf
bikepedmemphis.files.wordpress.com/2012/03/state-of-bicycling-2012.pdf
www.carolinathreadtrail.org/assets/files/The%20Economic%20Impacts%20of%20River%20Paddle%20Trails.pdf
www.census.gov/prod/2012pubs/fhw11-nat.pdf
www.commercialappeal.com/news/2013/nov/17/canoeists-enjoy-breathtaking-scenery-unique-on/
www.fs.fed.us/outdoors/naturewatch/start/economics/Economic-Analysis-for-Birding.pdf
www.kentuckytourism.com/!userfiles/Industry/Adventure/4%20-%20Trail%20Town%20How%20to%20Guide.pdf
library.fws.gov/Pubs/birding_natsurvey06.pdf
www.mississippiheritage.com/documents/MississippiCultureandHeritage-WhyTourismMatters.pdf
www.outdoorindustry.org/pdf/OIA_OutdoorRecEconomyReport2012.pdf
www.outdoorindustry.org/images/ore_reports/outdoorrecreationeconomy-technicalreport2012-oia.pdf
www.peopleforbikes.org/blog/entry/here-are-the-4-ways-protected-bike-lanes-help-local-businesses
www.tnvacation.com/industry/uploads/105/2010%20Economic%20impact%20report%20FINAL.pdf
www.tnwatchablewildlife.org/files/Birding-Final%20online%20version.pdf
travel.trade.gov/outreachpages/download_data_table/2010-cultural-heritage-profile.pdf
www.visitmississippi.org/uploads/docs/PDF/FY2011_Economic_Contribution_Report.pdf

American Sportfishing Association. 2008. Sportfishing in America. An Economic Engine and Conservation Powerhouse.

American Sportfishing Association. 2013. Sportfishing in America. An Economic Force for Conservation.

Anfinson, John O. 2003. River of History: A Historic Resources Study of the Mississippi National River and Recreation Area.

Association of Fish and Wildlife Agencies. 2007. Hunting in America. An Economic Engine and Conservation Powerhouse.

Beale, Calvin L.; and Johnson, Kenneth M. 1998. The identification of recreational counties in nonmetropolitan areas of the USA. Population Research and Policy Review. Volume 17.

Berman, J et al. 1978. Educational alternatives for boating safety programs. Wyle Labs Huntsville, AL and Coast Guard, Washington, USA. Report #: MSR-78-08, USCG-D-53-78.

Caudill, James; and Richardson, Tim. Economic Impacts of the Recreational Use of the Lower Mississippi River Fishing and Boating Trail.

Charlier, Tom. 2012. Trail may offer path over Mississippi River from Downtown Memphis to Arkansas. The Commercial Appeal. March 10, 2012.

Department of Interior. 2011. America's Great Outdoors: Fifty State Report.

Flusche, Darren. 2012. Bicycling Means Business: The Economic Benefits of Bicycle Infrastructure. Report of Advocacy Advance (partnership of League of American Bicyclists and Alliance for Biking and Walking.

Graefe, AR. Best Practices in Boater Safety Education. Boater Safety Education.

Leonard, Jerry. 2008. Wildlife Watching in the United States: The Economic Impacts on National and State Economies in 2006. Report published by the U.S. Fish and Wildlife Service.

Loftus, Andrew J. Loftus; Southwick, Rob ; Bragg, Lisa; and Byrne, Bob. 2011. The Benefits to Business from Hunting and Fishing Excise Taxes. Report produced for the Association of Fish and Wildlife Agencies.

McKnight, AJ; Becker, WW; Pettit,AJ; McKnight, AS. 2007. Human Error in recreational boating. Accident Analysis & Prevention. 39:2, 398-405.

Mississippi River Commission. 1977. Historic Names and Places on the Lower Mississippi River.

Mississippi River Corridor-Tennessee and the Tennessee Department of Transportation. 2008. Great River Road Tennessee Corridor Management Plan.

Mississippi State University. Mississippi's Great River Road: A Historic and Archaeological Inventory. Social Science Research Center; Department of History; Cobb Institute of Archaeology.

Outdoor Industry Association (Outdoor Foundation). 2012. Outdoor Recreation Participation Report 2012.

Phillips, Phillip; Ford, James A.; and Griffin, James B. 1951. Archaeological Survey in the Lower Mississippi Alluvial Valley, 1940-1947. Published by the Peobody Museum of American Archaeology and Ethnology, Harvard University. Vol. XXV.

Potts, Thomas D. and Marsinko, Allan P.C. Developing Naturally: An Exploratory Process for Nature-Based Community Tourism. Cooperative Extension Service, Clemson University.

Reeder, Richard J.; and Brown, Dennis M. 2005. Recreation, Tourism and Rural Well-Being. USDA Economic Research Service, Economic Research Report No. 7.

Reid, Bruce, Barton, Alan W., Pullen, Tom, Bishop, G. Reid, Brooks, Talbot. 2011. Unsung River: The Lower Mississippi River Natural Heritage Corridor, a Review of its Assets and Opportunities for Development. The National Audubon Society, New York.

Southwick Associates. 2012. The Outdoor Recreation Economy: Technical Report on Methods and Findings. For the Outdoor Industry Association.

Southwick Associates. 2011. The Outdoor Recreation Economy: Technical Report on Methods and Findings. For the Outdoor Industry Association.

Tennessee Department of Tourist Development and the U.S. Travel Association. 2011. The Economic Impact of Travel on Tennessee Counties.

University of Memphis, Regional Economic Development Center. 2009. Environmental Systems Enhancement Plan for the Mississippi River Corridor in Tennessee. Prepared for the Mississippi River Corridor-Tennessee.

U.S. Coast Guard. 2011. Recreational Boating Statistics 2011. COMMANDANT PUBLICATION P16754.25.

U.S.D.O.T United States Coast Guard. 1994. Federal Requirements and Safety Tips for Recreational Boats. U.S. Government Printing Office: Washington, D.C.

U.S. Fish and Wildlife Service. 2008. Economic Impact of Waterfowl Hunting in the United States.

U.S. Fish and Wildlife Service. 2012. 2011 National Survey of Fishing, Hunting and Wildlife-Associated Recreation, preliminary findings, National Overview.

U.S. Fish and Wildlife Service. 2012. 2011 National Survey of Fishing, Hunting and Wildlife-Associated Recreation, preliminary findings, State Overview.

Younger and Associates. 2008. Economic Impact Analysis, Mississippi River Corridor – Tennessee, Great River Road.

Appendix A

Atchafalaya Basin Floodway System Draft Master Plan

Executive Summary

EXECUTIVE SUMMARY

The United States Army Corps of Engineers (USACE) New Orleans District (MVN) is updating the 2000 Atchafalaya Basin Floodway System (ABFS) Project, Louisiana Master Plan; this document supersedes the previous ABFS Project Master Plan. This Draft Master Plan (DABFS) provides a comprehensive guide for use and development of the natural and man-made resources of the ABFS Project. Additionally, the Master Plan provides resource objectives, an overall land and water management plan, and associated design and management concepts.

BACKGROUND

The ABFS is an integral component of the Atchafalaya Basin, Louisiana, Project (ABLP), which is part of the Mississippi River and Tributaries (MR&T) Project. The MR&T was authorized by the Flood Control Act of 1928 and subsequently modified by numerous acts. The ABFS was the subject of a 1982 Feasibility Report, and was authorized by Congress in the Supplemental Appropriations Act of 1985 and the Water Resources Development Act of 1986. The area of the ABFS physically comprises a portion of the Lower Atchafalaya Basin Floodway and is defined by authorized project features to provide public access, environmental protection, flood control through flowage and developmental control easements, water management, canal closures and water circulation improvements, and recreational development in the Lower Atchafalaya Basin Floodway. The geographic area of the ABFS is coterminous with the Lower Atchafalaya Basin Floodway and is roughly defined as the lands and waters held in project fee ownership and comprehensive easements in the area south of U.S. Highway 190 situated between the East and West Atchafalaya Basin Protection Levees, and extending to the vicinity of Morgan City, Louisiana. The ABFS encompasses an area of approximately 595,000 acres. It does not include the area of the Lower Atchafalaya River below Morgan City or the Avoca Island area.

The original ABFS Master Plan was approved by MVN's District Commander in 2000. The development of the plan included extensive involvement and input from Federal and state agencies, local governments and interests, non-governmental organizations, and the public. A sample of the governmental agencies and non-governmental groups coordinated with include, but are not limited to, U.S. Fish and Wildlife Service, Louisiana Department of Wildlife and Fisheries, Louisiana Department of Natural Resources, Natural Resources Conservation Service, Ducks Unlimited, Black Bear

Conservation Commission, parish sheriff's offices, parish officials, and mayors and municipal officials from nearby towns. Additionally, several public information meetings were held, in addition to the regular review period, to provide the public, Federal and state agencies, and elected officials an opportunity to comment on the draft Master Plan. Comments received during the public and agency review period were reviewed and incorporated into the final Master Plan where applicable.

One of the goals achieved over the past 12 years has been the acquisition of 10,500 acres of fee title lands from St. Martin Land Company in 2001. The new property adjoins the Indian Bayou Area to the South and expanded the Indian Bayou Area to approximately 28,500 acres. The ABFS Project Management Office has also completed individual projects (i.e., walking trails, parking areas) to promote and improve access on Federal public access lands.

PURPOSE

The purpose of this Master Plan update is to provide guidance for further improvements needed to maximize public access and use of public lands, and enhance fish and wildlife resources, while minimizing adverse impacts to the existing biological and physical environment throughout the project area, within the limits and authority of the Federally-authorized project.

MAJOR FEATURES OF THE MASTER PLAN UPDATE

The Master Plan update focuses on expanding and further developing public access and use of public lands, and enhancing fish and wildlife resources, while minimizing adverse impacts to the existing biological and physical environment throughout the project area. Future management and development of the ABFS consists of improving management of existing uses and potential development of facilities and actions with non-Federal sponsor(s).

A. Potential On-Site Management

Further development of nature trails to provide increased opportunities for wildlife observation for persons of varying physical capabilities; expansion of ATV trails to address overuse problems and provide access to areas of public interest for persons of varying physical capabilities; additional site amenities and sanitary facilities at access/parking areas as required by public use pattern;

Possible primitive camping area(s) with minimal site development and provision of sanitary facilities where appropriate; additional development of the project's interpretive services and outreach program to facilitate public access and increase enforcement of project policies and rules;

Acquire road and channel easements and purchase in-holding, when seller is willing, to provide access to noncontiguous Federally owned lands.

B. Potential Facilities for Development

Provide an interpretive trail and outdoor education area along Indian Bayou;

Provide fishing piers/observation deck at oxbow on IBA;

Establish an outdoor classroom at oxbow on IBA;

Establish a project office in the southeastern portion of IBA; and

Establish a ranger shelter at oxbow on IBA.

Appendix B

Public Scoping

LMRRA Public Scoping Meetings

Recreation and Habitat Assessments

30 July 2013 Dyersburg, TN – Approximately 25 attendees. The Dyersburg State Gazette published articles before and after the meeting.

Boat Ramps – There is no Mississippi River Boat Ramp in Dyer County, TN. Fishing is a popular activity, but access is limited. There is a Blueway and a canoe/kayak ramp on the Forked Deer River that has spawned a lot of interest in canoeing and kayaking. They would like to see ramps on the MS River every 10-20 that would at least accommodate paddlers.

Biking – Biking is a popular activity. There are new trails being developed. They would like to see more dedicated bike trails that connect the towns.

Bird watching – They have several good spots for birding and would like more.

We received specific suggestions for boat ramp locations and improvements, access improvements at wildlife refuges, habitat improvements at several small lakes, and a pavilion near the I-155 bridge.

1 August 2013 Helena, AR – Approximately 12 attendees.

Boat Ramps – Quapaw Canoe Company attended and provided numerous suggestions for boat ramps and paddling access throughout the lower river.

The American Queen docks in Helena and offers two premium excursions – paddling on the Mississippi and an historic/cultural tour of Helena and the Arkansas Delta. High water in 2011 and low water in 2012 prevented the American Queen from docking there on several of its trips. The Helena Boat Ramp is very steep and wheelchair access is problematic. The Helena Chamber of Commerce would like to see a better docking facility for the American Queen and other river boats.

Attendees suggested the opening of the Harahan Bridge in Memphis will create more opportunities for biking in AR. They would like to see more dedicated trails.

7 August 2013 St. Francisville, LA – Approximately 15 attendees

Attendees were interested in hunting and fishing. Some expressed concern about the condition of access roads.

Woodcock habitat on the lower river was mentioned and further information was provided via email.

Paddling and the lack of boat ramps were mentioned.

	Location
Projects like the Harahan Bridge will draw people to the river. Hopefully we can start to open the levee roads to bike traffic.	Dyersburg, TN
Water quality is a concern for the majority of people I tlak to about the river. Most people think that the Mississippi is polluted or that you can't even eat the fish out of it. "You can't eat the fish, you'll grow another toe!" Clearly this is untrue, but access to water quality reports are almost nowhere to be found. The upper Mississippi releases a State of the River report every year. I don't know of anything similarly comprehensive on the Lower Miss. Even before that, though, there should be an easily accessible place online where the public can find information on water quality.	Dyersburg, TN
Would like to see: dedicated bike trails, more boat ramps, more access for paddling, bike trails into towns Commented – seeing more coastal birds the last couple of years.	Dyersburg, TN
1. Scenic overlooks on the TN side of the Mississippi River close to traffic patterns where out of state tourists travel. 2. Boat ramp along the forked Deer/Obion River near the Mississippi River where Dyer and Lauderdale Co. border for small boats and canoes (to exit those rivers before going into the Mississippi). 3. Wildlife refuge that lends itself to bird watching and photography along the MS Rver. 4. Recreational/camping sites along the Mississippi River and its tributaries	Dyersburg, TN
Need a Mississippi River boat ramp in Dyer Co	Dyersburg, TN
Information about a 10 acre cypress swamp along the Forked Deer River just downstream of downtown Dyersburg that land owner would like to incorporate into a recreational plan for canoeing, etc . Possibly educational spot, picnic area as canoers travel towards Miss River and beyond. Canoe launching point currently exist in downtown Dyersburg.	Dyersburg, TN
Boat ramp at Forker Deer River (Lauderdale Cty) – Take rt 19 out of Ripley, 1 mile west of Arp. Turn west at last road before Walnut Grove Church, 2 miles past the bluff. Access to river is on the right.	Dyersburg, TN
Improve ramp at Tipton RM 765 – it is fast water, not good for smaller boats/canoes There are no ramps between Caruthersville and Ed Jones New ramp @ Cates Landing RM 900 New ramp @ RM 880 Randolph @ 770 needs access Need pamphlet on river access, history, safety for rec w/educ Dyersburg River Center on River w/ ramp – classes soon!	Dyersburg, TN
I paddle a sea kayak in the Mississippi River. Most of this is confined to doing laps between the casinos, because there is no public access to the river between St. Francisville and BR, a section of the river that is lightly trafficked and clean enough to swim in. There are canoeists,	St. Francisville, LA

SUP paddlers, and kayakers who would welcome such access. One serious obstacle to improving the recreational capability of the river is public opinion in Baton Rouge and places downstream. Baton Rougeans tend to dismiss the river as a toxic cesspool. (This is because BR treats the river as a toxic cesspool.) A better acquaintance with the wild and clean river just upstream would better inform these attitudes.	
Greater access to the MS R via boat launches, etc. Continuous effort to improve/increase connectivity of the MS R to backwater habitats Work to reduce headcutting on tributaries to the MS R example: Homochitto River- redirect down historic channel thru Lake Mary.	
Interested in Wilkinson County, MS area access on east side of Miss River Fort Adams, MS. Hwy 24 ends. No access to river. Jackson Point Road stays washed out. Can't get launched on river. Ramp not complete. Lake Mary road to Lake Mary stays washed out. Need road built up so can get to lake. Need Public launch at Mud Lake, Foster Lake on Lake Mary Road. Public lakes but no public launches. Ruled by few. Need more access to river in Wilkerson County, MS. More access in Adams County, but not Wilkerson County. Please look at this area Wilkerson County MS.	

Online questionnaire responses collected through December 2013
via GreatRiversPartnership.org

#1-3. Full Name (optional), Email (optional), State of Residence

1. - Tennessee
2. - Arkansas
3. - Mississippi
4. - Tennessee
5. - Arkansas
6. - Louisiana
7. - Louisiana
8. - Louisiana
9. - Arkansas
10. - Mississippi
11. - New York (but my work includes the Louisiana and Lower Missouri Alluvial Valley)
12. *Anonymous A* - Alabama
13. - Arkansas
14. *Anonymous B* - Florida
15. - Tennessee
16. - Louisiana
17. *Anonymous C* - - Louisiana
18. *Anonymous D* - Mississippi
19. - Mississippi
20. - Upper Tennessee
21. - Tennesse

#4. Which of the following outdoor activities do you enjoy on the Lower Mississippi River?

1 – paddling, hiking, photography

2 - Paddling; Cycling; Hiking; Fishing; Birding/Wildlife Viewing; Photography; meditating

3 -- Paddling; Hiking; Fishing; Birding/Wildlife Viewing; Photography

4 – Paddling; Hiking; Fishing; Birding/Wildlife Viewing; Photography; botanical exploration

5 – Birding/Wildlife Viewing; Photography

6 – Cycling; Birding/Wildlife Viewing; Photography

7 – hiking

8 – cycling

9 – Paddling; Hiking; Fishing; Birding/Wildlife Viewing; Camping

10 – Paddling; Hunting; Fishing; Birding/Wildlife Viewing; Photography

11 – hunting

Anonymous A -- Hiking; Birding/Wildlife Viewing; Photography; historical tourism, ancestor research

13 – Paddling; Cycling; Hiking; Hunting; Fishing; Birding/Wildlife Viewing

Anonymous B -- Hiking; Fishing; Birding/Wildlife Viewing; Photography

15 – Paddling; Cycling; Fishing; Birding/Wildlife Viewing

16 – Cycling; Hiking; Fishing; Birding/Wildlife Viewing

Anonymous C -- Paddling; Hiking; Birding/Wildlife Viewing; Photography

Anonymous D -- Birding/Wildlife Viewing; Sitting and looking at the river, watching boats pass

19 – Fishing

20 – Hiking; Birding/Wildlife Viewing; Photography

21 – Cycling; Hiking

#5. What improvements could be made along the Mississippi River to enhance your experience?

1 – Water quality. I live in the Memphis suburbs near Collierville and used to paddle quite a bit downtown. There have always been signs posted at the boat ramp at the mouth of the Wolf River and under the Auction Street bridge which caution people not to eat the fish that swim in the Mississippi and Wolf. I get terrible headaches after I paddle in the river, so I no longer go downtown to paddle.

2 – bicycling -- no vehicles allowed, guided tours to explore parts I can't get to by myself, wildlife sanctuaries, parks for picnicing and camping, ammenities that encourage people to hike the river just like people hike the Appalachian Trail, a boat ramp in Mississippi County, AR at the end of Highway 18

3 – Better boat ramps, more facilities at public lands (visitor centers, trails, viewing platforms), and more public access to places where you can see the river.

4 – more watershed protection measures such as natural buffers

5 – easier access to Buck Island

6 – Multi-use path from Natchez, Miss. continguous through to New Orleans. Building of IBMA-spec multi-use trails (not hunting ATV trails and not super-steep amateur hack hiking trails) in the North and South Tracts of the unique and gorgeous Tunica Hills Wildlife Management area.

7 – Expansion of the bike trails on the levee. They could be wider and longer for expanded use.

8 – None that I can think of...it would be great if there were safer access points with respect to crossing the busy street to get on the levee but that is not your issue :)

9 – Pave roads in state forest (St. Francis north of Helena). Provide more recreational access for human-powered boats.

10 – Public access. I use Shipland WMA as it is the only public access area to the channel side.

11 – Improve habitat for American woodcock and ensure access for recreational activities, especially for huntingl.

Anonymous A – no answer

13 – Turn the bature into a national park

Anonymous B – no answer

15 – no answer

16 – More land. More trees. More wetlands.

Anonymous C – Levee access

Anonymous D -- Walking paths along the river.

19 – Public access is greatley needed for bank fishing. A reservoir built would be even better. Installing more dams on the lower Mississippi to control the current and make it easier to navigate like on the Upper MS river

20 – Better trails, closer to river with more places to view birds/wildlife

21 – More walkable trails

#6. Are you interested in the history and culture of the Mississippi River? If so, please explain why and which aspects are most compelling to you.

1 – *no answer*

2 -- This is the greatest river in the world! It has so much rich history and culture associated with it but we're ignorant about a lot of it. Not enough people know about the Sultana, for instance. Not enough people know how important the barge industry is to our economy or the role the river has played in our country's history. People need to know where the stories and the music about the river come from.

3 -- I am interested in the natural history of the river as well as music and local food.

4 – yes. the history of alluvial deposits

5 – As an employee of the Delta Cultural Center in Helena, I am very interested in the history and culture of the River. As a native of Helena, I know that it helped shape and define our region. Specific topins of interest: changes in the

course of the River over time; transportation along the River; opportunities for nature-based tourism

6 – Yes. Researched the plight and history of the Tunica Indians and their Supreme Court case to recover the "Tunica Treasure" that later funded their relocation and business in Minden.

7 – *no answer*

8 – I don't think most people realize just how critical the river is to our economy relative to the transport of agricultural exports, raw materials, and imports. I personally am very interested in the social, political, and cultural influences of the river, especially the delta.

9 – Plantation life; foods

10 – Yes, the book Rising Tide by John Barry was a revelation to the history and tied the Delta, the marshes and history together for me.

11 – We are very interested in the culture and history of the region in regards to hunting, fishing, trapping, and land use history, particularly forestry.

Anonymous A - Yes, I have grown up hearing stories from my father's family in southeast Arkansas about life in that area. My grandfather was born at Arkansas Post and was extremely proud of that fact. My grandparents (as well as two sets of great grandparents) lived through the 1927 flood. Granddaddy (1905-2000) worked with local preservation groups in Desha Co., AR, and wrote about his history. All my relatives go duck hunting and depend on that "industry" and its tourism for their livelihoods. All my life I have heard about the rich history of the Stuttgart area and the famous people who used to (and still do) duck hunt (Pulitzer, Hemingway, etc). I love the folkways, the music and the history generally. There is so much.

13 – the pre-history as well as the colonial history is most fascinating... I like the early pre-WWII 20th Century history too.

Anonymous B – no answer

15 – no answer

16 – I know the history of the Mississippi. The taming of the river by man is the most compelling aspect of the river to me. And the fact that if man had left the river alone Louisiana would actually be bigger than it was 30 yrs ago instead of washing away. Oil companies should be held accountable.

Anonymous C - Yes. Historic transportstion settlement trends woukd be interesting

Anonymous D -- Live in Vicksburg -- just like the river.

19 – Not really

20 – This river was here long before the Corps of Engineers began to "tame" it. The culture of Tennessee, Mississippi and Louisiana are tied to this River. We should preserve it as much as possible so that as it flows by Memphis.... one mile wide, still majestic...it takes our breath away.

21 – Yes because it has served so many civilizations and provided them resources

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#7. Where would you take a visitor who had never seen the river before? And why would you choose this location?

1 – Beale Street Landing. Beale Street is a must-see for tourists and the views are very nice there.

2 -- I would take them to the end of Highway 18 in Mississippi County, AR and the dirt road that parallels the river. It has huge, beautiful live oaks and is a lovely, peaceful spot. Another place would be Helena, AR. I would also love to stand in the middle of the Harrahan Bridge and look north and south.

3 -- Any place where you can get a good view of the main channel. There are not enough easily accessible overlooks in many places. If possible, I would take visitors in a motorized boat to see the main channel, sandbars, oxbows and backwater areas. Pedestrian access on old Mississippi River bridges (Harahan Bridge in Memphis and the old U.S. 80 bridge at Vicksburg should be developed for pedestrian access (cyclists and walkers).

4 – Vicksburg because of the dramatic bluffs

5 – Helena RiverPark -- best view of river and barge traffic -- can sit and relax

6 – Tunica Hills Wildlife Management area

7 – *no answer*

8 – "The Fly" at Audubon Park. It is the only real place to see a sunset on the horizon in New Orleans. It's also a great place to see large ships pass.

9 – Helena/St. Francis National Forest/West Memphis to Memphis Bridge/Memphis

10 – Shipland WMA. It is public access, the area is beautiful, the quiet water on the channel side is navigable by kayaks and now that the dikes are notched you can pass through as well as the notches have improved fishery habitat.

11 – bottomland hardwood sites within the floodplain, in search of American woodcock (during winter months). Lower Mississippi floodplain is very important winter range for the American Woodcock.

Anonymous A – no answer

13 – Helena Arkansas River Park "Helena Occupies the Greatest Situation on the Mississippi" Mark Twain, "Life on the Mississippi"

Anonymous B – no answer

15 – The river front in New Orleans.The look on their faces when they see the height of the river,and then look down at the city.

16 – I'd go to the Butterfly which is between Audubon Zoo in New Orleans and the river. I've been going there all my life. Great view of the river there and so close. Great place to bird. Lots of open sky over the river and the batture has overgrowth that attracts birds.

Anonymous C – The Fly. The Batture. The levee in Baton Rouge at the shaw center I don't have a boat so those locations are scenic and easy accesd.

Anonymous D – Vicksburg because it is the key to the south. It has hills and the delta. It has it all.

19 – Some of the dykes to fish

20 – Tom Handy Park. It gives you a view of the River like no other in Memphis

21 – Tom lee park because it is a nice open space and view of the river

#8. What do you believe are the major issues threatening Mississippi River habitats that impact, fish, birds, mammals, reptiles, amphibians and other river life?

1 – Water quality and air quality. For water quality, see my other responses. There is a hazardous waste burning facility north of Mud Island. There is an oil refinery at the south end of Memphis. There is no getting away from the terrible air quality in downtown Memphis. When I worked at the AutoZone headquarters (1998-2001), many people fell ill with pneumonia or had terrible problems with allergies.

2– pollution, invasive species, destruction of wetlands, short-sighted projects that make unwise use of tax payers' dollars

3 – Fish need more floodplain and side channel access where possible. Forests along the river and in the alluvial valley are often fragmented and too small to support viable populations of songbirds. Certain tributaries have low flows during the year or are suffering from erosion caused by channel maintenance.

4. – urban and agricultural runoff

5 – pollution

6 – over-population, pollution, litter

7 – *no answer*

8 – At the delta, the loss of coastline and the marshes that separate the barrier islands and shore is troubling.

9 – Overuse of water resources; agriculutral practices; shipping ? I don't know about these impacts, but can't believe they don't exist.

10 – Apathy, more people need to be able to experience to appreciate. Habitat improvment is a major issue. Notching the dikes is a great example of how simple adjustments make huge improvements for habitat.

11 – invasive species and policies that would prohibit or inhibit beneficial sustainable forest management practices.

Anonymous A – no answer

13 – development and the use of front yard herbicides across the deainage basin

Anonymous B – no answer

14 – Pollution.

15 – Man, dead zone, invasive species, oil, vanishing wetlands, habitat loss

Anonymous C -- Petroleum industry canals.

Anonymous D -- Pollution

19 – Not enough people care, and do not know the true wonders of the resource

20 – Pollution. It has to stop being the sewer for cities.

21 – Dumping waste

#9. How do you think the Mississippi River could be improved to benefit, fish, wildlife and people?

1 – Improve water quality and adjacent city air quality.

2 – Stricter pollution controls, enforce waste management regulations, increase the number of wildlife management areas (and their funding), improve national flood protection policies

3 – Consistent funding for habitat restoration is needed, along with funding for monitoring the success of restoration projects. We should examine options for managing water more holistically to benefit fish, wildlife and people. We should investigate ways of providing more floodplain storage of flood waters where possible. Safe public fishing opportunities should be increased.

4 – designate more flood zones and allow more flooding

5 – Leave as much of the land along the River as possible undeveloped, yet provide adequate access for people to participate in recreational activities without disturbing the natural aspects

6 – Continue to protect the Cat Island National Wildlife refuge, encourage eco--tourism in the place of hunting and fishing.

7 – *no answer*

8 – I suppose greater awareness and appreciation would come from greater recreational access along the river. Linear parks and bikeways are a great start. Although it's a strange comparison, I thnk what New York City has done on the Hudson greenway to connect people to the river is fantastic. The recreational and park spaces all along the westside of Manhattan are incredible.

9 – public outreach/education/advertising campaigns to connect land and water use practices with the DEAD ZONE drama. documentary films STEM education outreach to all Delta schools

10 – Managing the dikes and channels for wildlife and provide public access because more people using the river will provide more people that care about it.

11 – maintain diverse, healthy forests through forestry best management practices, and ensure access for full range of traditional outdoor recreation activities.

Anonymous A -- Preserve historical landmarks all along the river. Do more documentation and do more to attract tourists to those spots. (Just one example, Arkansas City has a historic courthouse with framed historic photos inside, many of the 1927 flood. That town has other sites that could be part of a driving tour with brochure and CD for narration as you drive.)

13 – take the batture and turn it into a park and then work up each of the major tributaries and implement a non-point source pollution program.

Anonymous B – no answer

15 – Not sure,it's just a complicated question.

16 – Allow diversions all along the lower Mississippi delta. Use the Morganza spillway to deposit sediment to help build land by letting it flood on a regular basis. Allow the river to build land like it was intended to do.

Anonymous C -- Let it flood and deposit silt to build up the coast.

Anonymous D -- More opportunities to get close to this huge river.

19 – a reservoir built of the river, using water from the river to fill and replenish fish would be an out resource

20 – Better access to the less inhabited area so you can hear mocking birds, the cardinals, etc instead of urban noises.

21 – Inform people of what animals are in the river and thrive in it