

MISSISSIPPI GULF COAST
NATIONAL HERITAGE AREA

*Environmental
Assessment*



**MISSISSIPPI GULF COAST NATIONAL HERITAGE AREA
ENVIRONMENTAL ASSESSMENT**

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MISSISSIPPI GULF COAST NATIONAL HERITAGE AREA ENVIRONMENTAL ASSESSMENT

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1.0 PURPOSE OF AND NEED FOR ACTION

1.1 INTRODUCTION

This Environmental Assessment presents a description of the proposed action and the purpose and need for the proposed action, as well as the history of the project in Section 1. The alternatives for the proposed action are described in Section 2. The environmental setting and the effects of the proposed alternatives on the Mississippi Gulf Coast National Heritage Area, are presented in Sections 3 and 4, respectively. The Commitments for management of the Heritage Area are addressed in Section 5, and document preparers are listed in Section 6. Section 7 is an overview of the planning and coordination efforts associated with designation of the Heritage Area, development of the Management Plan and identification of alternatives for managing the Heritage Area. Appendices A through G contain detailed information on environmental conditions and Management Plan components developed as part of the overall planning process, as well as for preparation of this Environmental Assessment.

The Act designating the Mississippi Gulf Coast National Heritage Area identified five requirements for the Management Plan: (1) provide recommendations for the conservation, funding, management, interpretation and development of the cultural, historical, archaeological, natural, and recreation resources of the Heritage Area; (2) identify sources of funding for the Heritage Area; (3) include an inventory of cultural, historical, archaeological, natural, and recreational resources and an analysis of ways in which Federal, State, tribal, and local programs may best be coordinated to promote the purposes of this Act; (4) provide recommendations for educational and interpretative programs to inform the public about the resources of the Heritage Area; and (5) involve residents of affected communities and tribal and local governments” (Public Law 108-447, § 8, Stat. 3374 [2004]). The Act further established the Mississippi Department of Marine Resources (MDMR) as the coordinating entity for the Heritage Area and prohibited them from using Federal funds available under this Act to acquire real property or any interest in real property. Given this later prohibition, the Management Plan for the Heritage Area was structured to address the five requirements of the Act without acquisition of property or construction of infrastructure to be owned or maintained by the coordinating entity. The Comprehensive Resource Management Plan Office within the MDMR is responsible for coordination of development and implementation of the Management Plan.

1.2 PURPOSE OF PROPOSED ACTION

The purpose for the proposed action, management of the Mississippi Gulf Coast National Heritage Area, had its genesis in environmental planning and management strategies initiated in Coastal Mississippi in the 1990s. Establishment of the Mississippi Gulf Coast National Heritage Area in 2004 was a key milestone in an ongoing progression of public and governmental actions designed to protect the natural and human environment and resources of the Mississippi Gulf Coast while allowing for sustainable development. Beginning in the mid-1990s, the MDMR initiated a public outreach and planning process that culminated in the development of a Comprehensive Resource Management Plan (CRMP) in 1998 to guide decision making activities related to development and conservation. Since 1998, the MDMR has held public meetings in Biloxi, approximately every two months, to continue the planning and outreach efforts essential to protecting the natural and human environment and resources and guiding sustainable development in the Mississippi Gulf Coast region. In the year 2000, the MDMR-CRMP initiated a series of annual conferences on Smart Growth and stated that “...the main focus of this annual conference is to continue our work as a region of decision makers to balance the conservation efforts and economic development as we proceed with planning, designing and building safe, healthy and livable communities for Southern Mississippi” (MDMR-CRMP 2007).

Around the year 2002, the MDMR-CRMP marshaled the support of the Comprehensive Resource Management Planning effort participants to have the Mississippi Congressional delegates nominate the six counties in the Mississippi Gulf Coast area as a National Heritage Area. By the time the Mississippi Gulf Coast National Heritage Area was designated in 2004, there was a general consensus among the planning process participants that the Management Plan be a comprehensive, overarching plan that identified, described, promoted and conserved or preserved the heritage resources and established a connectivity between people and places to achieve these objectives. Marketing the Heritage Area to local residents and tourists was also identified as an integral component of the Management Plan.

The effects for the No Action and Corridor-Cluster alternatives on the natural and human environment are presented in broad qualitative terms because of: (1) the Heritage Area’s large size, (2) the type of goals established under the Management Plan, (3) the reliance on individual participating entities, rather than the coordinating entity, to identify and construct infrastructure or acquire property, (4) the requirement that

the entity acquiring property or building infrastructure with Federal funds prepare a separate project specific Environmental Assessment, (5) the conceptual state of the Management Plan components at this time, and (6) the need to assess the condition of the Heritage Area and its associated management needs following the passage of Hurricane Katrina, the most devastating natural disaster to ever strike the Mississippi Gulf Coast.

The Management Plan provides a broad outline or blueprint for conserving, funding, management, interpretation and development of cultural, historical, archaeological, natural, and recreation resources through the identification of three primary goals and associated strategies designed to achieve these goals. The plan relies heavily on Heritage Area sponsors and partners to implement the strategies or actions to achieve the goals with overarching guidance provided by the coordinating entity with participatory input from the affected communities, stakeholders and governmental entities.

In addition to the No Action alternative, one alternative, the Corridor-Cluster Plan, was identified for analysis in this Environmental Assessment. This alternative represents the most comprehensive, overarching plan for the six-county Heritage Area.

1.3 PROJECT LOCATION

The Heritage Area covers approximately 2,744,976 acres and includes Pearl River, Stone, George, Jackson, Harrison, and Hancock Counties in coastal Mississippi (Figure 1). The southern boundary of the Heritage Area extends offshore to the state-federal demarcation line and includes the Mississippi Sound, six barrier islands (Cat, West Ship, East Ship, Horn, and Petit Bois) and two other islands (Deer and Round) in the Sound. The Heritage Area is bordered on the west by the State of Louisiana and on the east by the State of Alabama.

1.4 DESCRIPTION OF PROPOSED ACTION

A Draft Management Plan, including an Inventory of the Natural, Cultural, Historical, Archaeological and Recreational Resources of the Mississippi Gulf Coast National Heritage Area was prepared in July 2005 and submitted to the National Park Service for review (MDMR-CRMP and Coastal Environments, Inc. [CEI] 2005). A revised Management Plan and inventory were prepared in December 2005 to reflect post-Katrina

conditions. The proposed action is derived from the Management Plan and involves management of the six-county Heritage Area in such a manner as to achieve the goals and objectives inherent in the mission statement formulated during the planning and alternatives consideration process:

To promote understanding of and to conserve and enhance the heritage resources of the six counties of the Mississippi Gulf Coast by telling the area's nationally significant story to residents and visitors through activities and partnerships that celebrate the area's unique history, people, traditions and landscapes (MDMR-CRMP & CEI 2005:21).

The three primary goals inherent in this mission are:

- Strengthen the Sense of Heritage Identity
- Conserve the Area's Heritage Resources
- Promote and Market the Heritage Area.

Strengthen the Sense of Heritage Identity

Two primary strategies for strengthening a sense of heritage identity involve: (1) inventory and develop a database of heritage resources and derive stories that are part of the nation's story and (2) disseminate this information to re-emphasize and maintain a unifying, place-based sense of heritage identity. The interpretative program could include identifying and documenting both the living heritage (cultural) and archaeological and historical heritage resources, such as archaeological sites, historic structures, historic and cultural landscapes, arts and crafts, scenic and natural recreational resources, and ethnic and cultural identities, and weaving these elements into chronologies and stories that convey the area's unique identity. Dissemination of information designed to strengthen the sense of heritage identity could involve development and distribution of educational and informational materials, such as maps, brochures, tour guides, audio/video materials, websites based information, notices of cultural activities, exhibits, and historic and scenic markers. Educational programs on the heritage resources could involve a variety of partnering venues and include collection and presentation of oral histories; support of education and docent training programs and associated materials, and support and promotion of heritage related gatherings and festivals.

Conserve the Area's Heritage Resources

The goal of conserving the area's heritage resources would involve educating the public about the area's heritage resources, exploring the economic viability of selected heritage resources and collaborating on conservation efforts

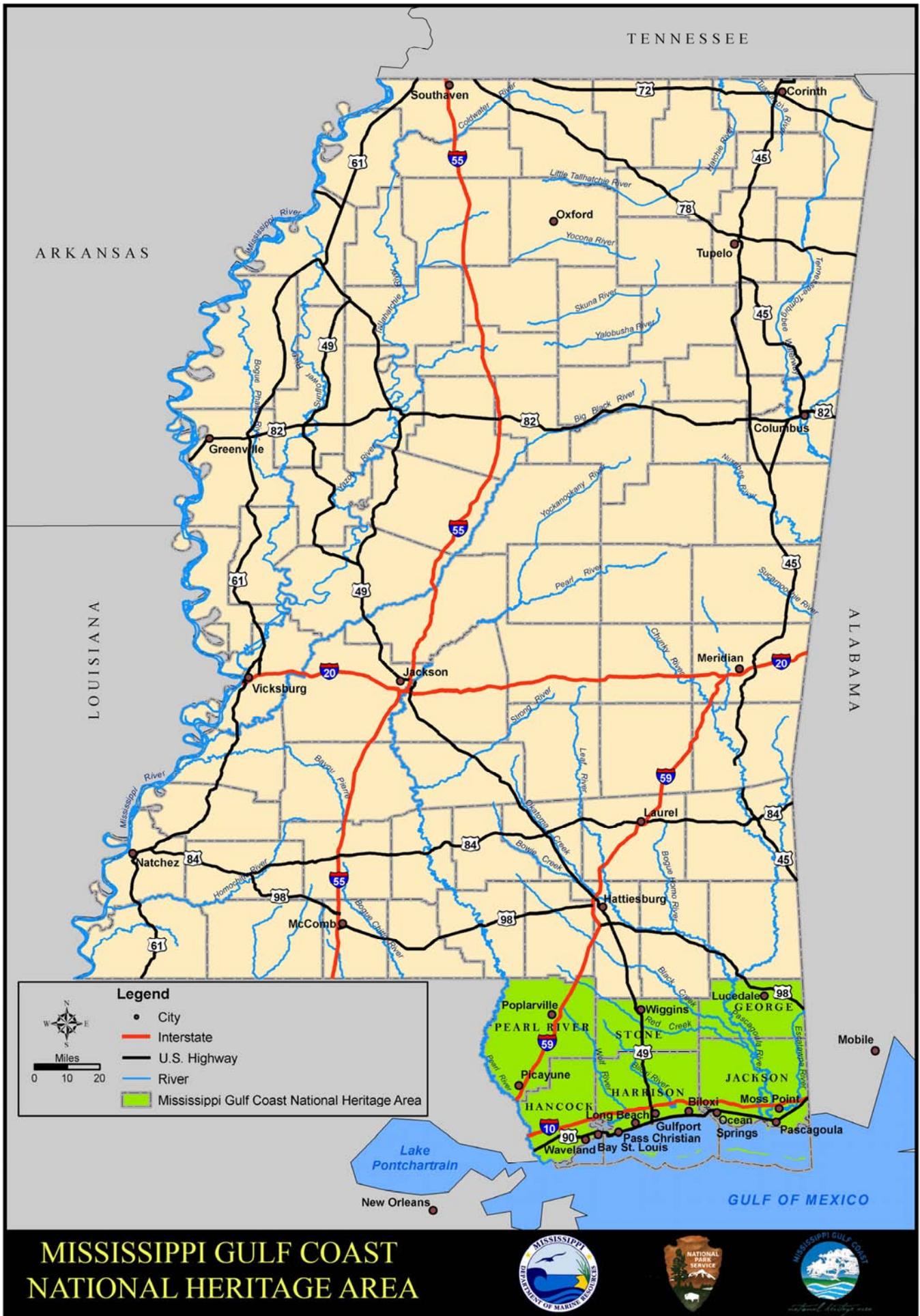


FIGURE 1. LOCATION OF THE MISSISSIPPI GULF COAST NATIONAL HERITAGE AREA.

for a variety of heritage resources through creation of partnerships and leveraging of a variety of funding and support services. Educating the general public, business, industry and government about heritage resources fosters understanding and pride in what makes an area unique. Educational elements could include identification and showcasing of lifeways, folkways, customs, traditions, natural and heritage landscapes and scenic vistas in order to promote pride and heritage identity.

Appreciation of the region's heritage encourages the development of a stakeholder mentality focused on conserving unique elements that establish an identity and sense of place for present and future generations. Identifying the economic viability of heritage resources in terms of heritage tourism and eco-tourism provides an added incentive to conserve, preserve and promoted these resources. Partnering with organizations and agencies that are acting to conserve the heritage resources enhances the ability to leverage personnel and financial resources to achieve designated Heritage Area objectives through actions such as operation of heritage-based businesses and festivals.

Pursuit of collaborative efforts involving Heritage Area based partnerships can preserve and conserve resources through application of Smart Growth policies, adaptive re-use programs such as the Main Street Program, and a variety of other applicable programs such as Coastal Impact Assistance Program, Coastal Preserves Program, Community Heritage Grant Program, and Hurricane Relief Grant Program.

Promote and Market the Heritage Area

The promotion and marketing of the Heritage Area could be achieved through the use of informational materials; themed tours involving Heritage Area designated clusters of communities and corridors and strategically located interpretative centers or visitor information centers. The informational materials could be disseminated via various types of media and be designed to attract heritage tourists and guide them to points of interest. Tours could be developed around heritage related themes and have customized maps, brochures, guidebooks, and website information with linkages to related interests. Interpretative centers could be established in selected areas, such as the existing east and west visitor/information centers on Interstate 10 and US HWY 11 or information centers in "gateway" communities such as Biloxi, to promote Heritage Area themes that can be experienced along corridors or clusters of communities at the local and/or regional levels.

The promotion and marketing of the Heritage Area could start with an emphasis on the local and state level and be expanded to a national or international level. Ideas for promotion and marketing could also be gleaned through networking with other Heritage Areas; tourist attractions; tourist organizations; historic, cultural and environmental organizations; and business, industry and governmental entities.

1.5 NEED FOR PROPOSED ACTION

The Mississippi Gulf Coast is a culturally, historically, and environmentally distinctive region where many chapters in the national story have been written. The bounty of the Mississippi Gulf Coast's natural resources has brought people to this area from all over the world. The modern culture of the coast consists of a multi-ethnic gumbo of people and traditions of Native American, European, African and Asian descent. The landscape of today's coast retains numerous historically important buildings, places, and archaeological sites, many of which are of national significance. For example, the area around Biloxi was the site of the first permanent European settlement in the Lower Mississippi Valley in 1699.

This landscape also includes a number of undeveloped waterways, islands, and forests that illustrate the bounty and beauty that have attracted people to the Mississippi Coast for thousands of years. The Wolf River, Black Creek and Pascagoula River are designated scenic streams, the latter being the last unimpeded large river in the continental United States. The five barrier islands (Cat, West and East Ship, Horn and Petit Bois) are part of the Gulf Islands National Seashore system managed by the National Park Service. Large expanses of forestland within the Heritage Area are in government or non-profit wildlife management areas or reserves or in the DeSoto National Forest. Thousands of acres of coastal marshland are designated Gulf Estuarine Management Sites (GEMS), the majority of which are managed as coastal preserves by the Mississippi Department of Marine Resources. Some GEMS are managed by the National Park Service or the US Fish and Wildlife Service. One GEMS, Grand Bay, encompasses a National Wildlife Reserve and a National Estuarine Research Reserve. The Mississippi Gulf Coast has a great abundance of heritage resources that would benefit from marketing and enhancement of connectivity provided by an overarching National Heritage Area Management Plan. Promoting knowledge of and access to these areas through the Mississippi Gulf Coast National Heritage Area is a low cost,

low impact method of not only growing the area's economy, but also maintaining the area's unique and important identity.

The Heritage Area has been experiencing unprecedented growth and change, especially in the three coastal counties bordering the Mississippi Sound, since the Mississippi Legislature legalized dockside gaming in 1990. The construction of high-rise hotels and condominiums on the waterfront has significantly altered the viewsheds of many sections of the historic communities of Biloxi, Gulfport and Bay St. Louis. While the economic development and rebuilding associated with the gaming industry continues unabated after the destruction caused by Hurricane Katrina in 2005, there are additional development pressures north of Interstate 10 (I-10). The communities in the northern portion of the Heritage Area, especially along US HWY 11 in the vicinity of Picayune and along US HWY 49 north of Gulfport also are undergoing development that could adversely impact heritage resources.

Implementation of the Management Plan for the Mississippi Gulf Coast National Heritage Area addresses the need to influence or guide the changes that are occurring along the coast so that the unique natural, historical and cultural qualities can be conserved and the sense of identity and place for local inhabitants can be enhanced in addition be being conveyed to visitor as part of the Nation's story.

This mission of the Mississippi Gulf Coast National Heritage Area was given a new urgency on August 29, 2005, when Hurricane Katrina assaulted the people, places and landscapes of southern Mississippi leaving widespread devastation and destroying many of the area's physical heritage resources, such as historic and archaeological sites, large sections of districts on the National Register of Historic Places (NRHP), artifacts, archival records, libraries, museums, art galleries, marinas, recreational infrastructure and coastal communities where people still pursued local arts, crafts and folkways. Such sudden, natural acts of destruction, when coupled with slower changes brought about by development pressures, loss of natural resources and environmental quality, and changing lifestyles threaten to irretrievably erase vestiges of the area's heritage and diminish the memory so essential for conveying this Heritage Area's part of the larger national story.

Having a designated Heritage Area with a Management Plan and implementation strategy in place in 2005 proved invaluable and demonstrated how the Heritage Area's local coordinating entity, the MDMR-CRMP, could act quickly in an emergency situation and collaborate with numerous other local, state and Federal agencies to preserve the area's remaining heritage resources and to advocate for the

principles of Smart Growth development as the region recovers and rebuilds. Within two weeks of Hurricane Katrina, the MDMR-CRMP, acting on behalf of the Heritage Area, initiated a project to evaluate and document for conservation, where possible, over 700 buildings in four National Register Historic Districts in the community of Bay St. Louis. In the fall of 2005, the MDMR-CRMP contacted heritage-tourism venues along the coast to assess their recovery needs and provide information on assistance. In the months since the storm, the existence of the Heritage Area has enabled the MDMR-CRMP and its partners to play an active role in the coast's recovery. The MDMR-CRMP was recognized by the National Trust for Historic Preservation for this action. The Mississippi Heritage Trust passed a resolution on June 9, 2006 recognizing the MDMR-CRMP for "...getting the Mississippi Gulf Coast designated a National Heritage Area and for working tirelessly after Hurricane Katrina to document and help save historic sites across the Mississippi Coast." The Mississippi Department of Archives and History also passed a resolution of commendation for MDMR on June 2, 2006, for "...creation of the Gulf Coast National Heritage Area and ...contribution to the Hurricane Katrina recovery effort."

As members of the Governor's Commission for Recovery, Rebuilding, and Renewal, MDMR-CRMP Heritage Area personnel emphasized the need to preserve the historic, cultural, archaeological, and natural resources within the heritage area as part of master rebuilding plans along the Mississippi Gulf Coast and promoted the benefits of heritage tourism in supporting and sustaining the rebuilding effort. Also, the Heritage Area developed or deepened partnerships with the Mississippi Department of Archives and History, the Mississippi Heritage Trust, and the National Park Service in order to actively and systematically identify and conserve the coast's precious, remaining heritage resources.

The need for the proposed action has taken on a greater urgency. The Mississippi Gulf Coast National Heritage area is undergoing unprecedented growth and change as a result of both the economic development that was occurring in the lower coastal counties before Hurricane Katrina and the intensified rebuilding and economic expansion efforts that have occurred both in the coastal counties and the northern counties post-Katrina. Archaeological, historical and cultural resources that were not destroyed by Hurricane Katrina are threatened with destruction because of a lack of knowledge and/or appreciation of their significance and the intense pressure to build new structures that provide greater economic return and much needed income streams. This is particularly evident along waterfronts where there is pressure to build high rise condominiums, hotels and

recreational marinas rather than restore or rebuild pre-Katrina type communities and working / commercial fishing marinas, docks and related businesses. These new activities, if allowed free and complete reign, will alter viewsheds and erase all traces of the heritage landscapes unique to the Heritage Area. The lack of a comprehensive archaeological and cultural resources survey of the Heritage Area means that many significant sites and their record of historic and pre-historic cultures may be lost as the landscape is bulldozed or paved over for development.

There is also a significant and on-going influx of people into the area from other parts of the country to help with the rebuilding, to work in new enterprises, including new casinos, and to partake of retirement living opportunities. While this new wave of people and the landscape modifications their presence brings repeats a process that has unfolded over the history of the area it is desirable that these cultures and lifestyles contribute to, rather than supplant, existing culture, lifestyles and landscapes. Without strengthening the sense of heritage identity and conserving the areas resources, the elements that make the nationally distinctive landscape and the nationally distinctive stories may be irretrievably lost.

Implementation of a Management Plan for the Mississippi Gulf Coast National Heritage Area serves a crucial and influential role in guiding the region through a period of unprecedented change. Establishment of the Heritage Area and implementation of its associated Management Plan provides an overarching means to connect Federal, state, local and private entities into a network of people and places that collectively work to enhance, conserve and promote the cultural, historical, archaeological, natural and recreational resources that make the area unique. Implementation of a Management Plan also provides the organizational and monetary means to forefront the Heritage Area's unique qualities and ensure that these qualities are a benefit to the people of the area, in both an economic sense through heritage tourism and as a source of community identity and pride. Consequently, actions needed to promote and market the Heritage Area result in comprehensive documentation of the area's resources and connectivity; strengthening of a sense of place and identity; and provide both an economic means for and an interest in conserving resources for future generations.

Finally, the Mississippi Heritage Trust's designation of the Mississippi Gulf Coast as one of the "Ten Most Endangered Places" in 2007 (MDAH 2007:3) demonstrates the urgent need to pursue a comprehensive Management Plan to strengthen the sense of heritage identity, conserve the remaining

heritage resources and promote and market the Heritage Area in order to provide the means and will to preserve the important part of the national story and landscape.

1.6 RELATED ENVIRONMENTAL DOCUMENTS

The Heritage Area Management Plan (MDMR-CRMP and CEI 2005) presented the purpose and need for the heritage area, characterized the area's significance and natural and cultural resources, and described the plan's formulation, components and implementation strategies. Appendices documented the enabling legislation, efforts and participants contributing to designation of the Heritage Area, heritage area resources, and additional research that is needed. *Appendix E. Inventory of Natural, Cultural, Historical, Archaeological and Recreational Resources of the Mississippi Gulf Coast National Heritage Area* of the Management Plan documented the area's natural, scenic, recreational, historical and cultural resources and provided overviews of the history of South Mississippi forest products, shipbuilding along the Gulf Coast and the area's seafood industry. This initial inventory assisted in formulation of preliminary themes that will be developed further through implementation of the Management Plan to convey the area's nationally significant stories and distinctive landscapes: Waterways of Discovery, Multi-ethnic Nature, Traditional Lifeways, Natural Areas, History and Arts and Culture.

1.7 DECISIONS TO BE MADE

The Management Plan identified three primary goals for the designated Heritage Area: 1) Strengthen the Sense of Heritage Identity, 2) Conserve the Area's Heritage Resources, and 3) Promote and Market the Heritage Area. The Heritage Area concept and Management Plan provide overarching guidelines, as well as financial and partnering mechanisms, to achieve these goals. Concepts and lines of communication have been established between the coordinating entity (MDMR-CRMP) and other entities and stakeholders with an interest in achieving the Heritage Area goals. These partnerships will become better defined and expanded through development of formal agreements and can be expected to increase in number as the Management Plan is implemented.

Evaluation of several alternatives would necessitate the need to make decisions with regard to the alternative to be selected that would achieve the purpose and need for the proposed action. Given that the No Action and the Corridor-Cluster were the only alternatives evaluated in detail in this

Environmental Assessment, the decisions remaining to be made pertain to how to best carry out the proposed action to achieve the goals and objectives for management of the already designated Mississippi Gulf Coast National Heritage Area. The decisions to be made involve specific types of actions, prioritization, and sequencing of Management Plan components and represent an on-going decision making process. The types of decisions that need to be made in the management process are presented in section 1.5 Need for Proposed Action.

In order to “Strengthen The Sense of Heritage Identity”, actions are being taken to develop a comprehensive documentation of the historical, archaeological, cultural, natural, scenic and recreational resources within the Heritage Area including site location and characterization. Decisions need to be made regarding development and content of interpretative plans for preserving these resources in terms of how the interaction between humans and the landscape resulted in a unique heritage that is a part of the national story. Suitable measures must be developed for disseminating this information and presenting the Heritage Area stories now and for posterity.

How best to achieve the goal of “Conserving the Area’s Heritage Resources” will be addressed through establishment of a myriad of both formal and informal partnerships focused on conserving specific heritage resources for their inherent value as well as their economic benefits. These conservation efforts benefit from information developed in the previously identified strategy to enhance a sense of place and ethnic identity among local inhabitants, visitors, government officials, developers, and other stakeholders and the Heritage Area’s resources.

The goal of “Developing, Promoting and Marketing the National Heritage Area” involves active, targeted efforts to develop site specific information on the clusters of communities and interlinking corridors and to develop themed tours that guide heritage tourists through the Heritage Area. This action aids the local economy by increasing the number and length of heritage tourism visits and provides jobs and sales opportunities at Heritage Area attractions. The economic benefits derived from heritage tourism and affiliated actions provide added incentives and abilities to conserve the area’s heritage resources and they strengthen the sense of identity within the Heritage Area.

Generic types of actions and strategies identified as essential to achieving the goals set for the Heritage Area are presented in the Management Plan (MDMR-CRMP & CEI 2005). The

execution of these actions are both short-term and long-term and can be expected to evolve through time in response to numerous factors including extent and levels of participation, public and governmental support, funding, natural and economic factors, maturing of the Heritage Area program and individual decisions on how best to pursue the strategies that would result in a strengthening of heritage identity, conservation of heritage resources and promotion and marketing of the Heritage Area. General areas for decision making related to how best to achieve the overall goals and associated strategies for the Heritage Area are presented in Table 1. The coordinating entity, advisory Task Commission and Heritage Area constituents/program participants will address issues of concern on an as-needed basis through future, on-going planning efforts affiliated with Management Plan implementation.

1.8 IMPACT TOPICS AND ISSUES

1.8.1 ISSUES EVALUATED IN DETAIL

An Environmental Assessment evaluates the effects of alternative actions on the natural and human environments in order to: (1) determine if the impacts are significant enough to warrant preparation of an Environmental Impact Statement; (2) aid in selection of the action to implement; and (3) identify means to mitigate adverse effects. During the long planning process that lead to designation of the Heritage Area and preparation of the Management Plan, the planning participants and representatives of the Heritage Area constituents expressed the importance of formulating a broad-based, over-arching, yet flexible Management Plan that would be implemented through a consensus of and participation by area inhabitants and Heritage Area partners. There appeared to be general agreement that the benefits of establishing a Heritage Area and implementing the Management Plan would far exceed any potential adverse effects and that proper plan implementation with adherence to relevant regulatory requirements and respect for individual property rights would mitigate potential adverse effects. Furthermore, specific Heritage Area related projects that use Federal funding and that do not qualify for categorical exclusion under the NEPA would require preparation of separate Environmental Assessments or environmental impact statements.

No specific issues of concern were identified during the planning process therefore the standard environmental topics considered in an Environmental Assessment were evaluated. Potential impacts to the Heritage Area’s natural and human

TABLE 1. GOALS, STRATEGIES AND DECISION ELEMENTS NEEDED TO FULFILL THE MISSION OF THE MISSISSIPPI GULF COAST NATIONAL HERITAGE AREA (MDMR-CRMP & CEI 2005).

<ul style="list-style-type: none"> • Strengthen the Sense of Heritage Identity <ul style="list-style-type: none"> ○ <i>Develop Interpretative Program and Database</i> <ul style="list-style-type: none"> ▪ Themes <ul style="list-style-type: none"> • Waterways of Discovery • Multi-ethnic Nature • Traditional Lifeways • Natural and Scenic Areas • History • Arts and Culture ▪ Resources <ul style="list-style-type: none"> • Living Heritage • Archaeological and Historical Heritage ○ <i>Disseminate Information</i> <ul style="list-style-type: none"> ▪ Printed Materials ▪ Website ▪ Educational Program Partnerships
<ul style="list-style-type: none"> • Conserve the Area's Heritage Resources <ul style="list-style-type: none"> ○ <i>Educate Regarding Heritage Resources</i> <ul style="list-style-type: none"> ▪ Lifeways and Folkways ▪ Customs and Traditions ▪ Landscapes and Scenic Vistas ▪ Fostering Pride and Identity ○ <i>Assist Economic Viability of Heritage Resources</i> <ul style="list-style-type: none"> ▪ Eco-tourism ▪ Heritage Tourism ▪ Heritage-Based Businesses ▪ Festivals ○ <i>Collaborate Through Partnerships for Heritage Resource Conservation</i> <ul style="list-style-type: none"> ▪ Fostering Smart Growth Policies ▪ Adaptive Re-use ▪ Linking People, Places and Programs
<ul style="list-style-type: none"> • Promote and Market the Heritage Area <ul style="list-style-type: none"> ○ <i>Information Materials</i> <ul style="list-style-type: none"> ▪ Regional and Local Maps and Guide Books ▪ System of Interpretative and Directional Signs ▪ Logo/Branding Policy and Procedures ○ <i>Themed Tours</i> <ul style="list-style-type: none"> ▪ Cultural ▪ Historical ▪ Natural and Scenic ○ <i>Visitor Corridors</i> <ul style="list-style-type: none"> ▪ Thematic Heritage Trails ▪ Hiking, Biking and Water Trails ▪ Scenic Byways ○ <i>Heritage Clusters</i> <ul style="list-style-type: none"> ▪ Characterize Heritage Significance ▪ Characterize Linkage between Clusters and Corridors ▪ Facilitate Funding Sources for Heritage Related Enterprises ○ <i>Interpretative Centers</i> <ul style="list-style-type: none"> ▪ Heritage Related Interpretative Installations ▪ Develop Gateway Communities ○ <i>Promotion and Marketing</i> <ul style="list-style-type: none"> ▪ Advertise — Local to National/International Level ▪ Network — Local to National/International Level ▪ Garner Local/Regional/National Support

environments were evaluated, in general, according to the types of Management Plan implementation strategies identified.

The following resources are described in Section 3.0 Affected Environment and the potential impacts for the No Action and the Corridor-Cluster alternatives are presented in Section 4.0 Environmental Effects:

- Natural Environment
 - Geology
 - Water Resources
 - Vegetation and Wetlands
 - Wildlife and Fish
 - Threatened and Endangered Species
- Human Environment
 - Cultural, Historical and Archaeological Resources
 - Socio-economic Conditions
 - Air Quality
 - Noise
 - Hazardous, Toxic and Radioactive Wastes

1.8.2 IMPACT MEASUREMENT

The Management Plan for the Heritage Area focuses on strengthening the sense of heritage identity, conserving Heritage Area resources and developing, promoting and marketing the Heritage Area to local inhabitants as well as visitors. A major portion of the strategies designed to achieve these goals involves the development and dissemination of information and identity enhancement in the forms of database development; oral history recordation; archival research; creation and printing of materials such as maps, brochures, tour guides and booklets; making digital data accessible through a website or at established welcome/information centers; designing and installing local and regional interpretative and directional signs; and creating logos, and branding policies and procedures applicable to the six-county Heritage Area.

Under current legislation, no property or infrastructure within the Heritage Area would be built, acquired, owned or maintained by the Heritage Area's coordinating entity the MDMR. However, the Heritage Area's coordinating entity could assist other entities seeking acquisition of properties and construction of infrastructure that would help implement and support the strategies for achieving the goals identified for the Heritage Area. Assistance, such as the direction of

Federal grants to Heritage Area partners, would require NEPA compliance by the grant recipient.

At this stage of development, the intensity, immediacy, duration, value and additive nature of the impacts of the No Action alternative and the Corridor-Cluster alternative on the environments within the Heritage Area can only be defined in broad, conceptual, relative terms:

Intensity

- Low: Result is barely discernable.
- Medium: Result is noticeable but does not substantially change existing condition.
- High: Result is noticeable and substantially changes existing condition.

Immediacy

- Direct: Result stems immediately from a known source.
- Indirect: Result is distanced from an action in time and/or space.

Duration

- Short-term: Result generally lasts less than a year.
- Long-term: Result generally lasts more than a year or permanently.

Value

- Beneficial: Result is improvement of condition.
- Adverse: Result is deterioration of condition.

Additive Nature

- Cumulative: Results are additive through time and can be either beneficial or adverse.

1.9 PERMITS

Some types of projects implemented as a component of the Heritage Area Management Plan may require Federal, state, and/or local regulatory authorizations, such as permits, licenses, and other forms of approval. The owner of the project or action, which may be a partner of the MDMR-CRMP in undertaking the plan or action rather than the MDMR-CRMP, would be responsible for acquisition of all regulatory authorizations on an individual and as-needed basis.

Examples of federal regulatory authorizations include, but are not limited to:

- Section 10 permits from US Army Corps of Engineers, Mobile or Vicksburg Districts, for proposed wharves, covered moorings, pilings, and other structures in navigable waterways
- Section 404 permits, General Permits, and Nationwide Permits from the US Army Corps of Engineers, Mobile District for actions that involve dredging and filling of wetlands
- Section 9 permits from the US Coast Guard for bridges that cross navigable waterways
- Federal consistency for projects in the Mississippi Coastal Zone that are federally funded.

Examples of state regulatory authorizations include, but are not limited to:

- Wetlands Use Permits from the Mississippi Department of Marine Resources for activities that impact wetlands under their jurisdiction
- Section 401 permits or Water Quality Certifications from the Mississippi Department of Environmental Quality
- National Pollutant Discharge Elimination System (NPDES) Permits from the Mississippi Department of Environmental Quality.

Examples of local regulatory authorizations include, but are not limited to:

- Subdivision approvals from counties or municipalities
- Building permits from counties or municipalities
- Flood zone permits including the acquisition of elevation certificates from counties or municipalities
- Zoning and/or Building Code variances from counties or municipalities
- Compliance with Smart Growth Codes from counties or municipalities
- Business Licenses from counties or municipalities
- Compliance with Restrictive Covenants from private subdivision or civic associations.

2.0 ALTERNATIVES

2.1 DESCRIPTION OF ALTERNATIVES

The alternatives analysis is intended to identify the alternative that best achieves the purpose of and meets the

need for the proposed action and has the least detrimental effects on the natural and human environments. The NEPA process requires that the No Action alternative be included in the analysis because it normally constitutes a viable choice among reasonable alternatives and represents a baseline against which to evaluate future environmental conditions with and without each of the proposed alternatives.

One alternative to the No Action alternative, the Corridor-Cluster alternative, was selected for impact analysis. This alternative maximizes the potential for:

- Identifying, describing and highlighting heritage resources in the context of the Nation's story,
- Marshalling funds, programs and people to conserve the resources and promote appreciation of these resources and a sense of place and identity, and
- Providing a mechanism to promote connectivity among Heritage Area resources, programs, funding sources, and vested interests.

Many of the components of this alternative action are an outgrowth of ideas and suggestions developed and discussed by a wide cross-section of interest groups in precursor programs such as the Comprehensive Resource Management Planning effort dating from the mid-1990s and the continuing annual Smart Growth conferences dating from the year 2000. Additional information on this process is included in Section 7.0 of the Environmental Assessment.

While the identification of all viable alternatives for a stated action is a cornerstone of the NEPA process, additional alternatives were not presented and evaluated in detail in this Environmental Assessment because the planning process resulted in a consensus that the proposed action be comprehensive and flexible with emphasis on the three primary Heritage Area Management Plan goals that were described previously.

2.1.1 ALTERNATIVE A. NO ACTION

For comparative purposes, the No Action alternative is defined as no active effort to either achieve the goals or pursue the strategies identified in the Management Plan for the already designated Mississippi Gulf Coast National Heritage Area. The MDMR-CRMP would neither initiate further action as a coordinating entity nor seek to align with partners to develop and implement heritage related projects involving

conservation of heritage resources, identification and interpretation of heritage area themes, preservation of stories and culture, development and dissemination of information materials, or promotion and marketing of the Heritage Area. There would be no overarching effort to brand the Heritage Area or foster connectivity among Heritage Area elements and entities. The MDMR-CRMP would continue to adhere to its mission to "...develop a plan to sustain Mississippi's coastal resources and to provide for a healthy economy in the coastal area" but it would not expand the efforts to include the three counties of the designated Heritage Area that are outside of the lower coastal zone.

2.1.2 ALTERNATIVE B. CORRIDOR-CLUSTER

The Corridor-Cluster alternative, at its conceptual stage of development, recognizes that there are geographically defined areas (clusters) and corridors within the Heritage Area that retain an assemblage of historical, cultural and natural resources that illustrate this area's important role in the nation's development. The clusters are cities or towns that have been defined by their incorporated area boundaries and have a concentrated assemblage of features reflective of the area's unique history, traditions, lifeways, arts and crafts, and landscapes. The designated highway corridors traverse the three distinct physiographic regions and cultural landscapes and link the clusters. The designation of corridors and clusters constitutes the framework for showcasing the historical, archaeological, cultural, natural and recreational resources of the Heritage Area and enables visitors and local citizens to experience the area in an organized, focused manner according to their interests, resources and time availability. Designated corridors with directional and interpretative signs and customized informational materials facilitate drive through overviews that provide a sense of natural and cultural landscapes and a means to connect to specific areas of interest. The defined clusters are assemblages of Heritage Area resources that allow one to have a more in-depth experience through the touring of places (communities, buildings, cemeteries, museums, art galleries and districts, libraries and historic societies, working waterfronts, natural areas, rural life museums, public archaeological sites, shipbuilding facilities, etc.), the consumption of local foods, and the participation in heritage related festivals and recreational pursuits (ecological and heritage tours, boating, fishing, horseback riding, hiking, biking, beach combing, bird

watching, etc.) These experiences, enhanced through available information and guided tours, help one to understand and appreciate what makes the Mississippi Gulf Coast National Heritage Area unique and its stories part of the Nation's story.

While each of the five clusters possess elements of the six themes identified in the Management Plan (waterways of discovery, multi-ethnic nature, traditional lifeways, natural and scenic areas, history, and arts and culture), they have unique combinations of heritage resources that distinguish them. Each cluster showcases key landscapes and environments and presents an opportunity for the conservation and interpretation of the area's individual history and culture. Under the Corridor-Cluster alternative, the Heritage Area resources would be researched and interpreted through development of information materials and tours. Through the use of logos and branding according to designated standards the Heritage Area components would be clearly identified and a quality experience would be sustained. Directional and interpretative signs and informational packages, including audio tapes, would facilitate self-guided tours. Financial and informational support for existing and renewed heritage related festivals would enhance the image of each cluster and help define the area's identity and sense of place. Financial support and partnerships for historical and archaeological investigations and oral history projects would document and further define the Heritage Area's history and culture before it is lost.

Table 2 characterizes the five clusters and eight corridors based on information on the historical, cultural and natural resources compiled in the environmental inventory developed for the Management Plan (MDMR-CRMP & CEI 2005). Figure 2 illustrates the spatial distribution of the clusters and corridors in relation to the three major physiographic regions that helped shape the history and culture of the Mississippi Gulf Coast National Heritage Area. Appendix A (Preliminary Summary of Resources for Communities in Clusters in the Mississippi Gulf Coast National Heritage Area) identifies historical and archaeological resources, cultural resources, natural and recreational resources, and festivals that were used to group the cities and towns within the five designated clusters. Appendix B (Heritage Resources) is a summary of historical / archaeological, cultural, and natural resources in the Heritage Area and their post-Katrina condition, where known.

TABLE 2. CLUSTERS, CORRIDORS AND MAJOR CHARACTERISTICS WITHIN THE MISSISSIPPI GULF COAST NATIONAL HERITAGE AREA .

Heritage Area (HA) Units	Communities & Highways	Major Characteristics
<i>Clusters</i>		
Hinterland	Picayune Poplarville Wiggins Lucedale	Upper Coastal Terrace – Pine Woods: historic logging of long leaf pine, Tung oil plantations; naval stores; relic logging communities; pickles; present day orchards, blueberry farms, timber plantations; gateway to natural & scenic resources & recreational areas in wildlife refuges/management areas/preserves, DeSoto NF; Crosby Arboretum & Native Plant Center.
Antebellum Beach Fronts - First Yachting	Waveland Bay St. Louis Pass Christian Long Beach	Active Coastal Zone: settled in colonial times; grew into renowned recreation-holiday beach-front community of Antebellum mansions with initiation of first scheduled steamboat service in 1827; 1st yacht club in South at Pass Christian in 1849; National Historic Register Sites & Districts; Center for arts, seafood festivals; gateway to fishing, public beach, coastal & island tours.
Trails-Rails-Port to the World	Gulfport	Active Coastal Zone: Major transportation cross roads with national and international commerce; in coastal zone; gateway to fishing, barrier island excursions; maritime & military museums; renowned children’s museum; public beach & educational park.
Colonial Landings-First Colonies	Biloxi Ocean Springs D’Iberville	Active Coastal Zone: Site of 1699 D’Iberville landing & 1st European settlement in lower Mississippi River Valley; National Historic Register Sites & Districts; historic live oaks; Biloxi Lighthouse; art museums & galleries; Biloxi Schooners; maritime & aquatic museums/education centers; gateway to fishing, coastal & island tours; art & seafood festivals; fishing tournaments; Gulf Islands National Seashore tours & Welcome Center.
Singing River-Flagships	Pascagoula Gautier Moss Point	Active Coastal Zone: Historic center for timber processing, shipbuilding & fishing; National Historic Register Sites & Districts; heritage & seafood museums, nature centers; Grand Bay NWR & Grand Bay NERR; Scenic Pascagoula River & delta; estuarine & riverine eco-tours; heritage festivals & county fair; Audubon Center.
<i>Corridors</i>		
Quick Access to Cluster Exits	Interstate 10 (I-10)	Gateway and direct access route through southern part of HA along border between Coastal Terraces & Active Shore Zone: crosses scenic Wolf & Pascagoula rivers, major delta, wildlife refuges/preserves: three HA clusters; two state welcome centers & exits to Hinterland Heritage Corridors & Coastal Heritage Corridor.
Coastal Heritage-Old Spanish Trail	US HWY90	Scenic coastal route through Active Shore Zone: state welcome center in Biloxi; borders Mississippi Sound; passes through earliest settled areas with antebellum homes, museums, seafood ports & processing centers, man-made public beaches; crosses four HA clusters, Bay of St Louis, Back Bay of Biloxi, Pascagoula River & delta.
Hinterland Heritage	US HWY 11	Picayune to Poplarville: Coastal terraces & Pine Hills- historic logging & Tung oil production; Crosby Arboretum & state welcome center near Picayune; links to wildlife refuges & management areas; natural resources (scenic Wolf River) & recreation.
Hinterland Heritage	US HWY 49	Gulfport to Wiggins: Active Shore Zone, Coastal Terraces & Pine Hills-historic logging, DeSoto National Forest; natural resources & recreation; Tuxachanie & Big Foot Horse Trails; Little Biloxi WMA.
Hinterland Heritage	MS HWY 43	Picayune to Bay St Louis: Active Shore Zone & Coastal Terraces-skirts NASA Buffer Zone; historic logging area; scenic & natural resources
Hinterland Heritage	MS HWY 15	I-10 to MS HWY 26: Active Shore Zone, Coastal Terraces & Pine Hills-DeSoto NF; scenic & recreational resources; Red Creek WMA; Ramsey Springs
Hinterland Heritage	MS HWY 63	Pascagoula to Lucedale: Coastal terraces & Pine Hills-historic logging area; scenic & recreational resources (Ward Bayou & Pascagoula River WMA, Charles Denton & Herman Murrah Preserves)
Hinterland Heritage	MS HWY 26	From Louisiana to Alabama through Poplarville, Wiggins & Lucedale: Coastal terraces & Pine Hills-historic logging area; scenic & recreational resources in DeSoto NF, wildlife management areas/preserves (Old River, Red Creek, Pascagoula River, Bogue Chitto, Sweet Bay Bogs); crosses Pascagoula, Black & Wolf scenic rivers.

See Figure 2, Appendix A and Appendix B for more details on features associated with individual communities.

Mississippi Gulf Coast National Heritage Area

Legend

Natural Landscapes

- Piney Hills
- Coastal Terraces
- Active Shore Zone (Estuaries)

Public Lands

- Scenic Sireams
- National Forest, Refuges, Management Areas, Preserves, Gulf Estuarine Management Sites

Heritage Clusters

- Incorporated Areas
- 1 Hinterland: Logging - Leisure
 - 2 Antebellum Beach Fronts - First Yachting
 - 3 Trails - Rails - Port to the World
 - 4 Colonial Landings - First Colonies
 - 5 Singing River - Flagships
 - Early Settlements
 - Towns
 - Information Center-Gateways

Heritage Corridors

- Coastal Heritage (US 90)
- Quick Access to Cluster Exits (I-10)
- Hinterland Heritage (US 11 & 49, MS 15, 43, 63, & 26)

Transportation

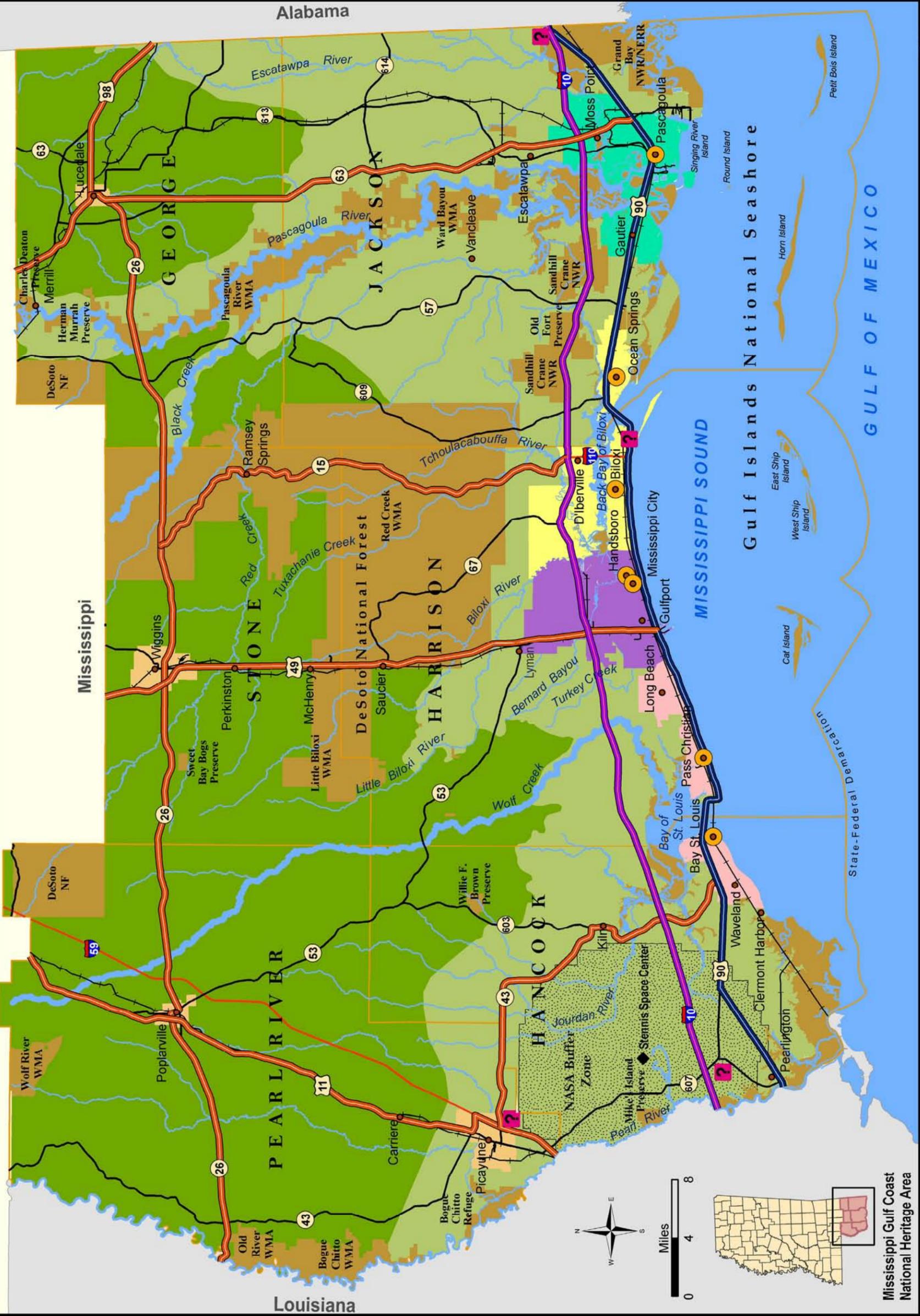
- Interstate
- Federal Hwy
- State Hwy
- Railroad

Data Sources:

Scenic Rivers, MS Dept. of Wildlife, Fisheries & Parks (MDWFP), 2007; Gulf Estuarine Management Sites (GEMS), Gulf Estuarine Research Reserves, MS Dept. of Marine Resources (MDMR), 2007; Refuges, Wildlife Management Areas, MDWFP 1997; National Forests, U.S. Fish & Wildlife Service 2000; Roads, Gulf Regional Planning Comm. 2003; County & Statewide Data, MARIS 2005; Preserves, The Nature Conservancy, 2007.

CORRIDOR-CLUSTER PLAN

December 2007



MISSISSIPPI GULF COAST NATIONAL HERITAGE AREA

Mississippi Gulf Coast National Heritage Area

FIGURE 2. CORRIDOR-CLUSTER ALTERNATIVE.

The Hinterland Communities

The communities of Picayune, Poplarville, Wiggins and Lucedale are surviving lumber towns in the heart of the historic logging, Tung oil and naval stores region and retain elements of this past through present day natural resource management, extraction and processing of timber. Picayune was known as the Tung Capital of the World in the 1920s and 1930s, but the extensive Tung tree plantations were destroyed by Hurricane Camille in 1969. Many of the natural and scenic resources near these communities (e.g., DeSoto National Forest, The Nature Conservancy Preserves, The Crosby Arboretum) and wildlife management areas trace their origin to government and non-profit acquisition in the twentieth century of clear cut areas for restoration and study of management techniques for forests, wildlife and fisheries habitat and for public recreation and education. Other cut over landscapes were converted to agricultural uses such as cattle and orchards. For visitors entering Mississippi from the west on US HWY 11, the state welcome center near Picayune and the nearby Crosby Arboretum would serve as a gateway to orient visitors to the area's history, culture, and natural and scenic resources and associated recreational opportunities within the Coastal Terraces and Piney Hills physiographic regions.

Antebellum Beach Fronts-First Yachting

This cluster encompasses the contiguous communities of Waveland, Bay St. Louis, Pass Christian and Long Beach located along the Mississippi Sound and within the Active Coastal Zone. These water oriented areas were the sites of pre-historic Native American communities and early European colonization in the eighteenth century. In the nineteenth and twentieth centuries these recreational-holiday-beachfront communities were renowned for their seafood, tourism and recreational activities, leisure living, arts community and elegant Antebellum mansions. The mansions were initially built by summer visitors from New Orleans, beginning with the scheduled steamboat service in 1827, and later from the northern and eastern parts of the United States with development of a network of railroads. Pass Christian was home to the first yacht club in the South in 1849 and was well known for its racing regattas. This cluster has three Historic Districts, two Multiple Resource Areas and three sites on the National Register of Historic Places. The area also supported six oyster and shrimp packing plants at the turn of the twentieth century. Cultural and water oriented recreational

pursuits remain prominent in this cluster and are celebrated with numerous festivals, tours and fairs (Crab Festival, St. Rose de Lima Fair, Cedar Rest Annual Cemetery Fair, Art in the Pass, St. Paul's Seafood Festival, and Celebrate the Coast Festival).

Trails-Rails-Port to the World

Gulfport, incorporated at the end of the nineteenth century with completion of the navigation channel and port facilities, grew rapidly in response to the export of lumber and naval stores delivered from the Mississippi Hinterland to the port via railroads and subsequently shipped worldwide. Mississippi lumber shipped from this port was used to build the Panama Canal and the port has also long been the Nation's second largest port of entry for bananas from Central and South America. The area is strategically situated for national and international commerce because of its location at the crossroads of major railroads, highways and coastal and world wide navigation routes. The port's connection to water based activities and military operations is reflected in the presence of the Naval Construction Battalion Center and affiliated museum, the Maritime Historical Foundation and Museum and the numerous fishing charter operations and recreational and historic-oriented chartered tours to historic Ship Island and Fort Massachusetts. Gulfport now encompasses the historic communities of Handsboro and Mississippi City which were scheduled stops on the first regular steamboat service between New Orleans and Mobile initiated in 1827. The area has seven sites on the National Register of Historic Places and one Historic District.

Colonial Landings-First Colonies

The area encompassed by Biloxi, Ocean Springs and D'Iberville is the site of the 1699 D'Iberville landing and the first European settlement in the lower Mississippi Valley. There are a total of 53 NRHP, nine Historic Districts, three Historic Resource Areas and one National Historic Landmark (Beauvoir in Biloxi) in this cluster. In the late nineteenth and early twentieth centuries, this area of the Active Shore Zone supported over 33 canneries processing shrimp, oysters, and seafood. Biloxi was the site of the second shrimp cannery on the Gulf Coast in 1879; surpassed Baltimore as the "Seafood Capital of the World" in 1904; and was the largest exporter of raw oysters in the United States by 1910. Between 1870 and the 1980s, 22 shipbuilding firms began in this area; many

constructing the Biloxi Schooner, a sailing ship, and later refitting the schooners with single diesel engines to create the Biloxi Lugger. Both boat types were used for commercial harvesting of oysters, shrimp and fish. The area has experienced settlement by numerous waves of ethnic groups drawn by the area's abundant renewable resources, starting with Native Americans in pre-historic times (ca. 4500 BC), through the French, English, Spanish, colonial Americans and Africans in colonial times, the Poles, Austrians, Germans, Croats, Serbs, Slovenians, and Louisiana Cajuns in the late nineteenth and early twentieth centuries to the Vietnamese in the 1970s.

While cannery row was replaced by casino row in the late twentieth century, the area's past colonial and water-dependent history and culture are still reflected in the shore zone landscapes, water dependant occupations, historic structures, museums, art galleries, festivals, and tours. This cluster's position at the cross-roads of US HWY 90, Interstate 10 and 110 and MS HWY 15 and the construction of the Mississippi Welcome Center in Biloxi make this a gateway from which visitors can learn about and explore other locations within the Heritage Area from the offshore Gulf Islands National Seashore to the south, east and west through the Active Shore Zone and north into the Hinterland regions of the Coastal Terraces and Pine Hills. The area's heritage is celebrated by numerous festivals and events including the Crawfish Festival, Wooden Boat Show, Blessing of the Fleet, Great Biloxi Schooner Race, George E. Ohr Festival of Arts, Biloxi Seafood Festival, Mississippi Gulf Coast Annual Spring Festival, King's Feast Renaissance Fair, Art Walk, Peter Anderson Art Festival and Re-enactment of Landing of d'Iberville in 1699.

Singing River-Flagships

The Singing River-Flagships cluster, encompassing Pascagoula, Gautier and Moss Point, showcases the Heritage Area's historical, cultural, archaeological, natural and scenic resources spanning from pre-historic through modern times. The Native American presence is reflected in the numerous archaeological sites as well as the famous legend of the "singing river." The Pascagoula River, flowing past Pascagoula, makes a mysterious singing sound, "like a swarm of bees in flight", which local legend attributes to the songs of death made by the Pascagoula tribe of Native Americans as they drowned themselves in the river rather than be defeated and taken captive by the Biloxi tribe.

Water is a defining resource for this cluster as reflected in its long history of building boats and ships, processing logs floated down the Pascagoula River system, seafood extraction and processing, and recreation and leisure activities. From colonial times through the present, this cluster has had the largest concentration of shipbuilding operations in Mississippi with the major firms in Pascagoula constructing ships (US Coast Guard cutters, CO3 all purpose ships, nuclear submarines, Navy warships) for the U. S. Government since World War I. Boats constructed for commercial fishing have supplied the area's seafood processing facilities since the late 1800s, including the coast's first shrimp cannery in 1878. The area was also a major processor and exporter of milled lumber, particularly southern yellow pine, in the late nineteenth and early twentieth centuries and Pascagoula was the largest lumber port on the coast in 1879. Moss Point was the site of the first successful pulpwood paper mill in the United States in 1911. This cluster has 42 National Register of Historic Places, three Historic Districts and one Historic Resource Area. The area's scenic wetland and aquatic environments are being conserved, showcased, and used as educational tools through a myriad of programs, including the Audubon Center, the Grand Bay NWR and Grand Bay NERR, private eco-tours and the annual Wild Wing River and Nature Festival. While the Mississippi State Welcome Center on I-10, east of this cluster, now serves as a gateway orienting visitors to the area's heritage related attractions, the Heritage Area Management Plan identified the potential to readapt an historic Moss Point house as a Heritage Discovery Center and make this cluster a gateway to the area's heritage resources. The area's heritage is also showcased through numerous festivals including the Gautier Mullet Festival, The Singing River Rod Association "Rod Run", Mississippi Gulf Coast Blues and Heritage Festival, Jackson County Fair, and Wild Wing Nature and River Festival.

A network of eight major roads constitute land-based corridors linking the five clusters and provide both a geographical and historical connectivity, as well as overview routes for observing human — land relationships that are unique to the Heritage Area (See Figure 2, Table 2).

Quick Access to Cluster Exits Corridor

Interstate 10 extends across the southern portion of the Heritage Area along the interface of the Active Shore Zone and the Coastal Terraces physiographic regions and provides good vistas for a variety of natural habitats including swamps,

bottomland hardwoods, pine savannahs, marshes and scenic rivers and estuaries. The I-10 East and West entry points into Mississippi contain state welcome information centers that would be used to provide gateway information for the five contiguous clusters located south of I-10 and the Hinterland clusters located north of I-10.

Coastal Heritage-Old Spanish Trail Corridor

This very scenic coastal corridor is US HWY 90 that traverses the Active Shore Zone with a third of the route, between Pass Christian and Biloxi, located directly behind the man-made beach fronting the Mississippi Sound. This corridor connects four of the Heritage Area clusters and intersects with four Hinterland corridors thereby constituting easy access to all the Heritage Area features. This corridor also has a state welcome information center in Biloxi that would be developed to function as a gateway to the Colonial Landings-First Colonies Cluster and other clusters situated within the Active Shore Zone.

Hinterland Heritage Corridors

There are six currently identified Hinterland Heritage highway corridors. Five of the corridors, US HWY 11, MS HWY 43, US HWY 49, MS HWY 15, MS HWY 63, extend in a north – south direction and connect the four Hinterland clusters to the four coastal clusters. The sixth corridor, MS HWY 26, crosses the northern part of Pearl River, Stone and George Counties in an east – west direction and connects the Hinterland clusters of Poplarville, Wiggins, and Lucedale. These corridors traverse the historic logging/timber—lumber production landscape and areas of modern day timber production and habitat restoration. They also showcase the area's natural scenic beauty as well as provide access to a variety of recreational opportunities in the DeSoto National Forest, wildlife refuges, management areas and preserves, and myriad of waterways and trails. The state welcome information center on US HWY 11 near Picayune, as well as the nearby Crosby Arboretum Educational Center, would be enhanced as a gateway to the Hinterland Communities through the addition of informational and interpretative exhibits.

Representative waterway corridors (Pearl, Wolf, Tchoutacabouffa, Black, Pascagoula and Escatawpa Rivers and the Mississippi Sound) that showcase the area's natural and scenic beauty, as well as its distinctive history, may be developed under future planning efforts through the use of

directional and interpretative signage, public access sites, and informational brochures that relate their Heritage Area significance. Existing trails within the National Forest and Wildlife Refuge/Management Systems (Table D.8 in Appendix D) can be accessed via the eight identified Heritage Area corridors and future efforts will be made to interpret their Heritage Area significance. These waterway corridors and trails are additional means for networking the various types of corridors and adding additional trails to showcase the area's natural and scenic values, as well as historic landscapes, associated land-resource uses and folkways. It is anticipated that in the future information, signage and access points will be developed for waterway and recreational land trail corridors in conjunction with governmental and private or non-profit entities that are knowledgeable of and have a vested interest in new access routes through the Heritage Area. Portions of these waterways and recreational trails are currently maintained or made accessible through privately run eco-tours (Wolf River, Pascagoula River and coastal estuaries) or State and Federal agencies and non-profit entities (Tuxachanie Hiking Trail, Bethel ATV Trail, Bethel Bicycle/Motorcycle Trail, Big Foot Horse Trail, Black Creek Hiking Trail, Davis Bayou Canoe Trail, Shepard State Park Trail).

The Corridor—Cluster alternative illustrates a conceptual, comprehensive, and spatially encompassing blueprint for pursuing goals identified for the Mississippi Gulf Coast National Heritage Area. This alternative promotes networking and connectivity within the Heritage Area among entities that have a vested interest in being partners in Management Plan implementation, as well as entities that are already pursuing activities that compliment the Heritage Area plan. Information presented in Appendix A and on maps in Appendix C document the type and location of natural, cultural, historical and recreational resources in the Heritage Area. Implementation of the Corridor-Cluster alternative involves using these data, as well as new data being developed under the Heritage Area Program, to pursue the strategies that will achieve the goals selected. While the concepts for the Heritage Area are in place, the details are to be worked out as the program unfolds and program related materials, such as maps, tour guides, signage, brochures, and website are developed. The Corridor-Cluster alternative relies heavily on the Heritage Area Program supporting, facilitating and providing overall guidance and connectivity to a myriad of entities having a vested interest in the Heritage Area and its mission. This support involves on-going data collection and

analysis, financial support, guidance on development and transfer of area-wide heritage information, Heritage Area promotion and marketing, networking and partnering to leverage resources to enhance projects. The Heritage Area's coordinating entity would not purchase property or construct infrastructure under the Corridor-Cluster alternative.

2.1.3 ENVIRONMENTALLY PREFERRED ALTERNATIVE

A qualitative comparison of the No Action and the Corridor-Cluster alternatives with regard to their ability to promote the national environmental policy as stated in NEPA (Sec. 101 [b]) requirements shows that the Corridor-Cluster alternative is the environmentally preferred alternative (Table 3) because it has a higher level of compliance with the environmental requirements. Because the No Action alternative is a continuation of existing conditions it has a low rating of compliance relative to the proposed Corridor-Cluster alternative. In contrast, the environmentally preferred alternative provides greater guidance, connectivity and leveraging ability for environmental interests to be more proactive in creating or enhancing actions to conserve, preserve, and enhance the environment and associated qualities, as well as achieving a better balance between competing interests over resource use.

2.1.4 PREFERRED ALTERNATIVE

In order to identify the preferred alternative that best achieves the purpose and need for the Mississippi Gulf Coast National Heritage Area, the Corridor-Cluster and the No Action alternatives were compared with regard to how each would meet the goals identified during the management planning process (Table 4). The Corridor-Cluster alternative is the preferred action because it provides the more comprehensive and overarching means for managing the Heritage Area to achieve the designated goals to strengthen heritage identity, conserve resources and promote and market the area. It allows for the maximum flexibility in implementation and customization of actions within the Heritage Area as partnerships are established, projects are refined and financial resources are identified and leveraged to:

- Present the Mississippi Gulf Coast's distinctive story
- Forefront the coast's unique qualities
- Emphasize the important role the region has played in the history of the United States

- Foster in residents an increased awareness and appreciation of their environment, history, culture, traditions and lifestyles (e.g., heritage)
- Support the long-term enhancement and conservation of the qualities that make the coast unique
- Enhance, conserve and promote the coast's many heritage resources
- Attract heritage tourists and provide them with authentic experiences that are reflective of the coast.

2.2 ALTERNATIVES CONSIDERED, BUT DISMISSED

This Corridor-Cluster alternative represents a comprehensive and overarching assemblage of components identified during the planning process that would achieve the goals and accomplish the mission identified for the Heritage Area. Alternative actions that would have addressed individual goals or resulted in limited achievement of the management goals were not developed individually for further assessment because the planning process had revealed in a desire for the Management Plan to be as inclusive and comprehensive as possible with flexibility to adjust management actions and decisions to fit the program's evolving needs and direction.

2.3 COMPARISON OF ALTERNATIVES

A comparison of potential impacts anticipated for the No Action alternative and the Corridor-Cluster alternative are presented in Table 5. The potential impacts are presented in general terms with regard to the resources and existing conditions within the natural and human environment and are intended to contrast conditions with and without the proposed action.

3.0 AFFECTED ENVIRONMENT

The following section describes the general environmental setting and the resources and topics of concern within the natural environment and the human environment. Resources of concern under the natural environment include: geology, water resources and water quality, vegetation and wetlands,

TABLE 3. QUALITATIVE COMPARISON OF ALTERNATIVES TO NEPA (SECTION 101[B]) REQUIREMENTS.

National Environmental Policy Act (Section 101 [b]) Requirements	Alternatives and Compliance Values	
	No Action	Corridor-Cluster
Fulfill responsibilities of each generation as trustee of the environment for succeeding generations.	L	H
Ensure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings.	L	M
Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences.	L	H
Preserve important historic, cultural, and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice.	L	H
Achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities.	L	M
Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.	L	M
<i>Extent of compliance with NEPA requirements: H – High, M – Medium, L – Low</i>		

wildlife and fish, and threatened and endangered species. Resources and topics of concern associated with the human environment include: socio-economic conditions, including demographics, housing, aesthetic and scenic resources and recreational resources; cultural, historical and archaeological resources; air quality; noise; and hazardous, toxic and radioactive wastes.

3.1 GENERAL ENVIRONMENTAL SETTING

The Mississippi Gulf Coast National Heritage Area is enriched with many economically and environmentally important natural resources. The vast pine forests, clear unspoiled rivers that dissect the landscape, and extensive wetlands, consisting of bottomland hardwood/cypress swamps and fresh-to-saline marshes that merge with coastal bays and bayous connected to the Mississippi Sound form a biologically diverse environment. A chain of barrier islands denotes the boundary between the lower salinity estuarine area and the

higher salinity marine waters of the Gulf of Mexico. The natural resources of the Heritage Area include habitat and wildlife and fisheries that provide ample opportunities for recreation and commercial harvesting of renewable resources.

Geographically, the Mississippi Gulf Coast National Heritage Area lies within the Temperate Deciduous Forest Biome of North America. Representative plant communities include oak, hickory, pine, and magnolia forests. The Heritage Area also is within the Outer Coastal Plain Mixed Forest Province Ecoregion (Bailey 1980). This region is divided into four separate physiographic subregions (Appendix C, Figure C.1) that are distinguished by their geology, topography, and assemblages of flora and fauna:

Pine Hills — This province is characterized by gently rolling hills, with relatively flat tops, and is dissected by streams. Under natural conditions, pine forests cover the hills and the stream valleys contain bottomland hardwoods. Except for river flooding, this is a passive province.

TABLE 4. EVALUATION OF ALTERNATIVES WITH REGARD TO STRATEGIES FOR ACHIEVEMENT OF GOALS IDENTIFIED IN THE MISSISSIPPI GULF COAST NATIONAL HERITAGE PLAN (MDMR-CRMP & CEI 2005).

Goals	No Action Alternative	Corridor-Cluster Alternative
<p>Strengthen Sense of Heritage Identity</p>	<p>There would be no comprehensive, overarching program to support and direct the identification and documentation of the area's unique history, traditions, lifeways and landscapes and to relate their significance as part of the nation's story. Efforts would continue in a piece-meal fashion.</p>	<p>The primary emphasis of this alternative is to work with existing and new interest organizations and government agencies to develop and disseminate data and information on the Heritage Area in an organized and concerted manner in order to strengthen the sense of heritage identity using designated clusters and corridors. The comprehensive, overarching Heritage Area program would:</p> <ul style="list-style-type: none"> • Provide guidance and connectivity to the documentation of the area's unique history, traditions, lifeways and landscapes and interpret their relationship and significance as part of the Nation's story. • Identify and prioritize efforts to save or prolong some heritage resources and activities through promotion of public awareness and financial support of existing conservation and cultural heritage oriented programs such as Main Street Programs, Land Trust for the Mississippi Coastal Plain, government sponsored local festivals and Scruggs Nature and Educational Center of Jackson County. • Guide and support development of databases and interpretative programs according to six major themes (waterways of discovery, multi-ethnic nature, traditional lifeways, natural and scenic areas, history, and arts and culture) and two major resources (living heritage and archaeological and historical heritage). • Describe in detail themes and resources through the use of informational materials, directional and interpretative signage, and guided and self-guided tours for the five Heritage Area clusters and eight corridors that connect the clusters and traverse the area's three distinctive physiographic regions and their cultural landscapes. • Make databases available in the form of printed and digital materials, website and educational programs presented by teachers and heritage oriented interest groups and organizations. • Initially establish centralized information gateways at the four existing state welcome centers and allow visitors to customize their tours according to their thematic interests.

CONTINUED

TABLE 4. CONCLUDED.

<p>Conserve Area's Heritage Resources</p>	<p>Existing individual private, non-profit and government programs would continue conservation and environmental quality enhancement efforts for natural and historical resources but there would be no connectivity between these efforts or leveraging of man-power and funds to maximize the results of these efforts.</p>	<p>This alternative would involve a three-pronged effort to:</p> <ul style="list-style-type: none"> • Promote awareness of the Heritage Area's resources, • Assist in enhancing the economic viability of these resources • Collaborate through partnerships to focus action and leverage resources to conserve the individual components as well as the relationships among the natural, cultural, historical and archaeological resources. <p>In addition to providing Heritage Area matching funds for projects that constitute the three-pronged approach (i.e., heritage related festivals, educational workshops and materials, archaeological investigations, native plant restoration and stream bank restoration demonstration projects, acquisition of properties for greenspace, recreation, environmental quality, and public access, adaptive re-use of buildings, Main Street Programs, etc.), the coordinating entity would facilitate awareness and knowledge of funding sources and partnering opportunities to leverage resources and funds and to maximize conservation efforts and results. The initial effort would be to work with existing entities and focus application of funds to activities or projects within the designated clusters and corridors to maximize conservation and educational efforts.</p>
<p>Promote and Market Heritage Area</p>	<p>There would be no concerted or connected effort to develop informational and interpretative programs and materials to promote and market the Heritage Area.</p>	<p>The Heritage Area would be promoted and marketed uniformly and comprehensively by myriad interests using tools developed specifically for the six-county Heritage Area under the guidance of the coordinating entity. These tools would include:</p> <ul style="list-style-type: none"> • A wide range of informational/promotional materials (maps, guidebooks, digital materials, media advertising, public interest programs, etc.) • Marketing of Heritage Area via themed tours documenting cultural, historical, and natural/scenic landscapes and entities within five clusters and along eight corridors • Marking of existing and future visitor corridors (roads; hiking, biking, riding trails and waterways) that illustrate heritage themes and landscapes using interpretative and directional signs • Branding of Heritage Area sites, festivals, workshops, etc. to instill connectivity and ensure quality, and • Use of strategically placed interpretative exhibits within existing state welcome information centers and advertising to enhance Heritage Area awareness for tourists and local inhabitants.

TABLE 5. SUMMARY OF POTENTIAL IMPACTS FOR THE NO ACTION AND THE CORRIDOR-CLUSTER ALTERNATIVES.

FACTOR	NO ACTION	CLUSTER-CORRIDOR
<i>NATURAL ENVIRONMENT</i>		
GEOLOGY	Medium, direct, long-term, adverse effects on condition of landscape during and after extraction of mineral resources in absence of appreciation for need to retain favorable appearance.	Medium, direct, long-term, beneficial effects regarding extraction and processing of minerals in sensitive environments through raising awareness of need to conserve appearance of Heritage Area landscape.
WATER RESOURCES	Medium to high, indirect, long-term, adverse effects on water resources and water quality as result of continuation of development and minimal awareness and implementation of best management practices.	Medium to high, direct and indirect, long-term beneficial effects by heightening awareness of water resources and water quality issues, educating developers and general public on importance of development and enforcement of best management practices, encouraging Smart Growth practices and enhancing a water quality ethic within Heritage Area.
VEGETATION AND WETLANDS	Medium, direct and indirect, long-term, adverse effects related to development.	High, long-term, beneficial effects on vegetation communities in general and wetlands in particular through education regarding Smart Growth, wetlands value and function, measures to conserve especially important vegetation habitats through easements and/or acquisitions and making these areas available for public viewing, and development of guidelines/protocols to prevent over exposure and degradation related to tours.
WILDLIFE AND FISH	Medium to high, indirect, long-term, adverse effects related to development, competition for habitat, deterioration of water quality.	High, long-term, beneficial effects on vegetation communities in general and wetlands in particular through education regarding renewable resources and need for sustainability, Smart Growth, wetlands value and function, and measures to conserve especially important and threatened wildlife and fisheries habitats.
THREATENED & ENDANGERED SPECIES	Low to medium, indirect, long-term and adverse effects through development and habitat destruction.	Medium, indirect, long-term beneficial effects through education and raised awareness regarding species value to society, measures to protect species and preserve habitats with easements and/or acquisitions; development of guidelines/protocols for tours to observe T&E species.
<i>HUMAN ENVIRONMENT</i>		
SOCIO-ECONOMICS	Low, indirect, long-term adverse effects on some historic communities as economic conditions cause rural flight of young people.	Low to medium, direct and indirect, short-term and long-term, beneficial impacts through diverse Heritage Tourism development including tourism related job, crafts/agricultural produce; and Heritage Area related renovations, landscaping, accommodations and tours.
AESTHETICS AND SCENIC RESOURCES	Medium to high, direct and indirect, long-term, adverse environmental effects as development obscures or destroys scenic areas and aesthetic views.	Low to high, direct and indirect, short-term and long-term beneficial effects through development of awareness, appreciation and recognition of value of preserving aesthetic and scenic resources as part of heritage tourism attraction and renewal of sense of pride in place within Heritage Area.

CONTINUED

TABLE 5. CONCLUDED.

RECREATION RESOURCES	Medium to high, direct and indirect, long-term and adverse effect on natural resource recreation through over intense, “unregulated” use.	Medium to high, direct and indirect, short-term and long-term benefits to natural resource recreation opportunities through advertising and education of resources and encouragement of use of resources in least damaging manner; acquisition and development of greenways, piers, trails/boardwalks, etc. for public use.
CULTURAL, HISTORICAL AND ARCHAEOLOGICAL RESOURCES	Medium to high, direct and indirect, long-term, adverse effects through development and neglect in the absence of awareness of value and means to preserve/conservate resources. Loss of opportunity to diversify tourism industry through preservation and conservation of cultural, historical, and natural resources and development of promotional/marketing/educational materials related to these resources.	High, direct and indirect, long-term beneficial effect resulting from overarching/connective programs to promote awareness of value of resources & need to preserve/conservate resources as part of development of heritage identity and promotion of Heritage Area to tourists; facilitation of means to conserve and preserve historical and archaeological resources through studies/excavations/oral histories, re-adaptive use, and/or use as tourist attractions; and support of cultural activities unique to the Heritage Area.
AIR QUALITY	Low, direct, long-term adverse effects related to development and continuance of existing transportation practices and reliance on existing types of fuel.	Low to medium, indirect, long-term benefits associated with awareness of and support for Smart Growth policies that emphasize development of walkable neighborhoods and development and use of public transportation or alternative, more environmentally friendly fuels.
NOISE	Medium, direct, short-term and long-term adverse effects associated with development as usual.	Low to medium, direct, short-term adverse effects where tourism activities use motorized boats or airboats. Medium, direct and indirect, short-term and long-term beneficial effects where Smart Growth facilitates walking and biking in neighborhoods and guided tours are conducted using protocols that minimize noise levels in natural areas, including restrictions on airboats and other types of loud motors, and heavily visited tourist attractions.
HAZARDOUS, TOXIC, RADIOACTIVE WASTES	Low, indirect, long-term, adverse effects in absence of incentives and means to clean existing, contaminated sites.	Medium to high, direct, long-term beneficial effects related to focus on need to and facilitation of funding to clean-up of hazardous waste sites in historic areas because of added value realized from re-adaptive uses and heritage tourism opportunities.

Coastal Terraces – This area contains flat, coastal terraces with numerous poorly drained depressions and occasional sandy ridges. As in the Pine Hills, streams dissect the terrace lands. The terraces support pine forests and pine savanna wetlands, and the stream valleys contain bottomland hardwoods. Except for river flooding this is a passive province.

Active Shore Zone – This province consists of the active coastal landforms and habitat types within the interface between terrestrial and marine processes. The province includes river mouth estuaries, the Mississippi Sound, the bay-

sound shore, and the barrier islands and tidal passes. This zone is subject to high intensity processes related to tropical and frontal storms, tidal movement, and influxes of sediment charged river floodwater.

Offshore – This province includes the near-shore Gulf beyond the barrier islands, continental shelf, shelf edge, and continental slope. It is subject to active marine processes.

Only three miles of this large and resource rich area lie within the official state boundary. Coastal Mississippi is the platform from which the Gulf’s resources are harvested for the benefit

of the Nation. This offshore province, although not entirely within the legal boundary of the state, is an integral part of the cultural heritage of South Mississippi.

The Heritage Area is characterized by a humid, subtropical climate having mild winters and warm summers. Weather conditions in the coastal areas are dictated by the location of the Bermuda High Pressure System. During spring and summer, a high-pressure system moves north into the Gulf of Mexico and is associated with southerly and southeasterly winds, humid air, and frequent heavy rainfalls. In fall and winter, the high-pressure system retreats to the southeast and the Continental Pressure System moves south towards the Gulf of Mexico. While the latter is associated with cooler and drier northerly winds, periods of high precipitation occur during the passage of fronts.

The range of temperature fluctuations within the coastal area can best be described as moderate with an average summer high of 82 degrees Fahrenheit (°F) and a winter low of 54° F. The average annual temperature is 68° F. The first occurrence of 32° F in the fall is generally around December 12 and the last occurrence in the spring is around February 21. Rainfall averages 64 inches per year with the wettest period occurring in July to September and the driest period in October to February. Hail, snow and sleet are infrequent occurrences.

3.2 GEOLOGY

The land of Southern Mississippi was created by deposition of sediment along the northern margin of the Gulf of Mexico. Relict islands, beach trends and river mouth features that were in the active shore zone when they formed, are now in the terrace uplands or on the continental shelf, providing evidence of the constant seaward and landward shifts of the shore zone in response to the rise and fall of sea level. These changes were driven by episodes of continental glaciations that occurred during the formation of the land.

The surface geology of the Mississippi Gulf Coast consists of three sedimentary units: Pascagoula/Hattiesburg Formations, the Citronelle Formation, and Coastal Deposits (Figure C.2 in Appendix C). The Pascagoula/Hattiesburg Formation unit is the oldest and is found in the northern section of the Mississippi Gulf Coast National Heritage Area along the local river channels. The Citronelle Formation lies on top of the Pascagoula/Hattiesburg Formations and caps the areas of high elevations. The Coastal Deposits are the youngest of the units and make up the beaches and barrier islands, as well as the

bottom deposits of the Mississippi Sound, the various bays and estuaries, and the continental shelf.

The Pascagoula/Hattiesburg Formations are Miocene in age and are made up of clay and silt with lenses of sand. They are members of the Vicksburg group. These formations are recognized in outcrops by their bluish-gray color. In some areas these clays form a barrier to groundwater creating a high water table that may support wetland habitats.

The Citronelle Formation is Pliocene/Pleistocene in age and caps the tops of hills and terraces. It is composed primarily of sand and gravel with lenses of clay throughout. Surface quarries have produced large quantities of silt, sand, and gravel that have been used in road construction and ground fill.

The Coastal Deposits are Holocene in age, and are represented by the Biloxi Formation, the Prairie Formation, and the Gulfport Formation. The Biloxi Formation is composed of clay, fine sand, and sandy clay. The Prairie Formation consists of sands and muddy sands, while the Gulfport Formation is a sand unit and is dredged from the Mississippi Sound to replenish the man-made beaches between Pass Christian and Biloxi.

Oligocene and Eocene sediments that underlie the younger, surficial deposits consist of several hundred feet of clay and limestone that define the Jackson and Vicksburg groups. Many aquifers used for water supply are found within these sediments.

Other notable formations include the Upper Cretaceous Tuscaloosa and Washita-Fredericksburg, and the Jurassic Cotton Valley that are the area's primary producer of oil and natural gas. Other formations that have a potential to produce oil and gas are the Wilcox and Norphlet Formations.

3.3 WATER RESOURCES AND WATER QUALITY

3.3.1 GROUNDWATER

Underground aquifers are the primary source of high-quality, potable water within the Heritage Area. The Mississippi Coastal Region is underlain by thousands of feet of freshwater-bearing Miocene and Pliocene sands that dip to the south or southwest. Throughout the area there is one

unconfined aquifer lying near the surface, with several confined aquifers lying below.

The Miocene Pascagoula Formation is a major source of water for the cities of Gulfport, Biloxi, Moss Point, and Pascagoula. Potential fresh water resources in the Pascagoula Formation are greater than any other ground water source on the Gulf Coast. Aquifer depths for the Miocene range up to 4,000 feet below the surface, and the recharge zone extends from the northern parts of the three coastal counties to well above Hattiesburg, Mississippi.

The other major source of groundwater on the coast is the Pliocene Formations. The Graham Ferry and Citronelle Formations are exposed on the surface across most of the six southern counties. This recharge zone provides excellent aquifer deliverability from the subsurface at depths of up to 250 feet. The Pliocene aquifers tend to have a higher percentage of dissolved solids with the highest concentrations in Jackson County.

In the Heritage Area, Jackson County is the primary consumer of surface water, which is used for industrial and commercial activities. A total of nearly 58 million gallons of surface water is used daily. Hancock and Harrison County surface fresh water withdrawals amount to only 180,000 and 40,000 gallons daily, respectively.

3.3.2 SURFACE WATER

There are three major river basins within the confines of the Heritage Area: Pascagoula River, Coastal Streams, and the Lower Pearl River (Figure C.3 in Appendix C). Within these basins are thirty smaller sub-basins (Table D. 1 in Appendix D). The rivers within these basins have been lifelines for the inhabitants of the area since the area was first occupied and they have facilitated exploration, trade, transportation, food harvesting and recreation. Three of the rivers in the Heritage Area are also designated as Wild and Scenic Rivers: Wolf River, Black Creek and Pascagoula River.

The Pascagoula River Basin is the second largest basin in Mississippi. It is approximately 164 miles long and 84 miles wide. The river system drains an area of about 9600 square miles, comprising most of southeast Mississippi and a small portion of southwestern Alabama. The Pascagoula River forms at the confluence of the Leaf and the Chickasawhay Rivers in Greene County. The Pascagoula River is the last

unimpeded major river system in the continuous United States and empties directly into the Mississippi Sound. Near the Gulf Coast the drainage areas are low-lying flatlands, forested wetlands, and marshlands. Along the northern portion of the National Heritage area the basin consists primarily of gently rolling hills and broad, flat floodplains.

According to the State of Mississippi Water Quality Criteria for Intrastate, Interstate and Coastal Waters, the majority of the water bodies found in the Pascagoula River Basin are classified as fish and wildlife streams. Waters within this classification are intended for fishing and for the propagation of fish, aquatic life and wildlife and secondary, or incidental contact recreation. There are also a number of streams that are classified as recreational streams, which are waters that are required to be of a quality that is suitable for contact recreational purposes such as swimming and water skiing. In general, water quality is good to excellent with only localized contamination problems. Historically, industrial point sources and urban runoff near major population centers have caused water quality problems.

The Coastal Streams Basin comprises the majority of the Mississippi coastline from the Alabama State Line to the west, with the exception of the Pascagoula River. This river system drains all or part of five counties: Pearl River, Stone, Hancock, Harrison, and Jackson, and encompasses approximately 1,545 square miles. The Coastal Basin also includes the Mississippi Sound, a barrier island chain consisting of Cat, Ship, Deer, Horn, Round, Petit Bois Islands, and two nearshore islands, Deer and Round. Channels within the Coastal Streams Basin do not flow into a single truck stream, but rather discharge directly into the Mississippi Sound. The topography within this basin ranges from pine forest covered, low, rolling hills in the northern portion of the basin to low-lying flatlands and salt marshes on the coast.

According to the State's water quality standards, the majority of these water bodies are classified as fish and wildlife streams. However, portions of the Jourdan and Wolf Rivers and all of the Tchoutacabouffa River and Tuxachanie Creek are classified for recreation. Most of the streams are shallow and have clear water with generally good-to-excellent water quality. However, near the coast the water quality is only fair to good due to many point and non-point sources of contamination near the major population centers.

The Pearl River Basin is located in east-central and southwest Mississippi and in the southeastern part of Louisiana. The

river is approximately 490 miles long, and drains an area of 8,760 square miles. The lower Pearl River sub-basin includes parts of Hancock and Pearl River Counties in southwestern Mississippi, and includes the Hoblochitto Creek Basin within the Heritage Area. The Lower Pearl sub-basin is characterized by water bodies that generally have a fast, deep base flow. Near the Mississippi Gulf Coast, the Pearl River becomes estuarine where it is surrounded by salt marsh and is tidally influenced. The land in the Lower Pearl sub-basin is generally much flatter than the land in the upper region.

The water quality for the Lower Pearl River sub-basin is generally fair to good. According to the State of Mississippi Water Quality Criteria for Intrastate, Interstate, and Coastal Waters, the majority of the waters in the Pearl River Basin are classified as fish and wildlife streams.

3.3.3 WATER QUALITY

The Mississippi Department of Environmental Quality, Mississippi Department of Marine Resources, US Geological Survey, and US Environmental Protection Agency have been studying various water quality parameters of the surface water in Mississippi. Pathogens, eutrophication, organic enrichment/low dissolved oxygen, siltation, and pesticides are among the major environmental threats to water quality in Southern Mississippi. Urban development is the primary cause of diminished water quality along the surface waters, by creating non-impervious surfaces that do not allow for the natural flow and cleansing of runoff into the water bodies. The data indicate that the water bodies are becoming stressed due to increased pollution that arises from urban development. These water bodies have, thus far, been able to retain a balance within the ecosystem, but as development occurs, additional runoff from impervious surfaces could negatively affect water quality. As water quality worsens, the water bodies will become over-stressed and thus, unable to maintain an ecosystem balance.

3.4 VEGETATION AND WETLANDS

There are seven major land use/land cover categories (Figure C.4 in Appendix C) (MARIS 2000) within the 2.7 million-acre Heritage Area:

Habitat Type	Area(Ac)
Developed	91,958
Agriculture	255,645
Bottomland Forest/Swamp	730,759
Upland Forest	1,075,410
Barren/Sand	32,352
Tidal Marsh	56,223
Surface Water	502,629
<i>Total:</i>	<u>2,744,976</u>

The Upland Forest category located on higher, better-drained land contains seven habitat types: deciduous, mixed, pine and maritime forests, scrub-shrub, cut-over/burned, and sand/barren. The Bottomland Forest/Swamp category located on lower lying, poorly drained land contains three habitat types: Pine/Pine Savannah, Bottomland Hardwood/Swamp and Bayheads. The emergent wetlands consist of vegetation communities with salinity tolerances that grade from fresh in the interior to saline along the coast and barrier island shoreline. Table D.2 in Appendix D identifies vegetation species most common to these habitat types in the Heritage Area.

Upland Deciduous Forest habitats are found in cool, moist areas that do not burn as often as pine or mixed forests. Upland Mixed Forests are primarily mid-successional secondary forests that are found in drier sites that have been harvested for timber or have not been burned. Smaller trees thrive in this type of habitat creating a dense forest. Upland Pine Forests are found on well-drained soils, and are characterized by widely dispersed pine trees with little mid-story vegetation. This type of forest is very prone to fires, which helps keep the smaller trees and shrubs from overgrowing an area and creating an Upland Mixed Forest. Upland/Wet Scrub Shrub habitats are found along wet shorelines of lakes and ponds, and are dominated by fast growing plant species. Upland/Wet Cutover/Burned habitats are those areas that have been recently logged or burned and are in the first stages of re-growth. Under normal conditions, these areas undergo a successional re-vegetation from herbaceous and shrub species to mature forests over time. Upland/Wet Sand/ Barren Land ecosystems are areas that are characterized by significant amounts of exposed mineral soil. These areas may be naturally occurring, such as beaches that may support some dune grasses and scattered small scrubs, or disturbed inland areas that do not support vegetation.

Maritime Forests are narrow bands of forests on old coastal dunes called cheniers. They serve as critical habitat for migratory birds following their trans-oceanic or trans-gulf migrations. Wet Pine Forest/Pine Savanna habitats have an open canopy with trees spaced far apart, and the soils are usually acidic. The Mississippi Sandhill Crane National Wildlife Refuge in the Southwestern part of Jackson County has a large amount of this type of habitat. Bottomland Hardwood Forest/Swamps are common throughout much of the Heritage Area along the rivers in the Coastal Terraces physiographic region and the upper portion of the Active Shore Zone. The vegetation species that characterize this habitat type have adapted to seasonally flooded and saturated soils. Bottomland hardwood forests/swamps are extremely productive areas because of the high amount of organic matter and dissolved nutrients that are deposited during floods. They are extremely important in maintaining water quality, regulating floods and stream recharge, and they provide important habitat for fish and wildlife. Bayheads are small vegetation communities found at the head of creeks, the base of slopes, in narrow bottoms of small perennial or intermittent streams, in acid depressions in pine flatwoods, and along borders of other swamp communities throughout the south-central and southeastern parts of the state. These habitats help maintain water quality, regulate flooding, serve as stream recharge areas and provide habitat for fish and wildlife.

Coastal or tidal emergent wetlands are found next to estuaries, where seawater is mixed with fresh water, while inland or non-tidal wetlands are commonly found on floodplains along rivers and streams. Other inland wetlands can be found where precipitation saturates the soil or groundwater reaches the soil surface, where depressions are surrounded by dry land, and along the margins of lakes and ponds. Emergent Wetland/Marsh habitat lacks trees or dominant woody vegetation and is dominated by emergent herbaceous vegetation that grows above the water line most of the year. This vegetation community is present in fresh, brackish, and saltwater environments and in hypersaline salt flats. These wetlands serve several important functions including: spawning and grow-out areas for many species of fish that are essential to both recreational and commercial fisheries, protection from powerful storms that come in from the Gulf of Mexico, and filtration to retain and degrade many types of pollutants coming from upland areas. Many recreational activities such as hunting, fishing, bird watching, hiking, and boating take place in emergent wetlands.

Commercial fishing, a large economic resource in the Heritage Area, depends largely on the estuary-coastal marsh system. Vegetation common to freshwater wetlands includes: spikerushes, bullrushes, lizard's tail, sedges, wild rice, marsh fleabane and knotweeds (Eleuterius 1998). Intermediate to brackish salinity marshes contain black needlerush (*Juncus roemerianus*), common reed, sawgrass, knotweed and cordgrass (Eleuterius 1998). The most common species present in the saline tidal marshes in Mississippi is black needlerush.

The 56,223 acres of tidal marshes within the Heritage Area are located in Jackson, Harrison and Hancock Counties, with the majority of the acreage concentrated almost equally between Hancock and Jackson Counties. Between 1972 and 2000, the total area of tidal wetlands decreased by approximately 33 percent, with the largest loss (16,300 acres or 37 percent) being in Jackson County (COE and TetraTech 2005). Hancock County lost 7,200 acres (26 percent) and Harrison County lost 3,600 acres (35 percent) (COE and TetraTech 2005). Primary causes of tidal wetland loss are erosion and dredging and filling operations associated with development (i.e., navigation channels, port /shipbuilding/ marina infrastructure, and residential and commercial development).

Seagrass beds are generally found in isolated patches that are less than several hundred acres in size and are in shallow waters rarely deeper than 6 feet Anderson et al. (2005). Most of the seagrass acreage in the Mississippi Sound is shoal grass (Moncreiff et al. 1998). Widgeon grass is present in patches along the coastline and is a component of shoal grass communities in some areas of the Mississippi Sound behind the barrier islands (Moncreiff et al. 1998). Surveys of seagrass beds conducted after Hurricane Katrina (Heck and Byron 2006) revealed that there was a 100 percent loss of seagrass coverage along West Ship Island and a 57 percent decrease at East Ship Island. There was a 14.8 percent increase at Horn Island and a 72.5 percent increase at Petit Bois Island. The dramatic seagrass loss occurring around West and East Ship Islands "occurred from areas on the islands that were devoid of trees and appear to be a result of over-wash from the large storm surge that was associated with this storm" (Heck and Byron 2006). Heck and Byron (2006) reported that the seagrass beds were probably buried as a result of the loss of land and sediment from the islands and that these plants may emerge from the overlying sediments with time.

3.5 WILDLIFE AND FISH

3.5.1 TERRESTRIAL WILDLIFE

The moderately undeveloped condition of the Heritage Area, especially outside of the coastal zone, and the varying diversity of habitat types support a wide variety of terrestrial wildlife. The common terrestrial species that would often be found within the Heritage Area include: white-tailed deer (*Odocoileus virginianus*), gray squirrel (*Sciurus carolinensis*), fox squirrels (*S. niger*), red fox (*Vulpes vulpes*), coyote (*Canis latrans*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), opossum (*Didelphis virginiana*), cottontail rabbit (*Sylvilagus floridanus*), swamp rabbit (*S. aquaticus*), bobcat (*Lynx rufus*), American alligator (*Alligator mississippiensis*), beaver (*Castor canadensis*), otter (*Lutra canadensis*), mink (*Mustela vison*), muskrat (*Ondatra zibethicus*), nutria (*Myocastor coypus*), eastern chipmunk (*Tamias striatus*), several species of bats, many species of perching birds, ducks, geese, herons, owls, hawks, and many species of turtles, snakes, and frogs.

3.5.2 BIRDS AND WATERFOWL

The wide variety of habitats in the Heritage Area provide feeding, resting and/or nesting for at least 387 species of birds and waterfowl at various times during the year (Table D.3 in Appendix D) (Mississippi Coast Audubon Society 2007). The recently designated Mississippi Coastal Birding Trail and published map depicts key habitats where the public has an opportunity to view these species within the Heritage Area (Audubon Mississippi 2005).

Recreational sand beaches with associated small craft harbors and piers have permanent species such as the brown pelican, osprey, willet, laughing gull, and black skimmer. The least tern can be found in this habitat in the summer. In the winter, species such as the common loon, horned grebe, great egret, bufflehead, black-bellied, piping, and semipalmated plovers, ruddy turnstone, dunlin, sanderling, herring, ring-billed, and Bonaparte's gulls, Caspian, royal, and Forester's terns can be found in this habitat type. During migration, spotted and semipalmated sandpipers, sandwich, common, and black terns may be seen.

Fresh swamp and hardwood bottomlands have resident species such as the great blue heron, great egret, black-crowned night heron, white ibis, black vulture, wood duck,

red-shouldered hawk, barred owl, hairy and pileated woodpeckers, Carolina wren, brown thrasher, common yellowthroat, common grackle, and American crow. The yellow-crowned night-heron, Mississippi kite, swallow-tailed kite, broad-winged hawk, yellow-billed cuckoo, chimney swift, ruby-throated hummingbird, Acadian flycatcher, red-eyed vireo, barn swallow, wood thrush, northern parula, prothonotary warbler, Swainson's warbler, summer tanager, and indigo bunting can be found in this habitat in the summer. In the winter, species such as the yellow-bellied sapsucker, eastern phoebe, winter wren, and gray catbird can be found in this habitat type. During migration, insectivorous songbirds may also be seen.

Open pine or mixed woodlands have resident species such as the northern bobwhite, downy woodpecker, Carolina chickadee, eastern bluebird, northern mockingbird, pine warbler, common yellowthroat, eastern towhee, northern cardinal, and Bachman's sparrow. The common nighthawk, chuck-wills-widow, eastern wood-pewee, prairie warbler, yellow-breasted chat, and orchard oriole can be found in this habitat in the summer. In the winter, the house wren, chipping sparrow, and dark-eyed junco can be found in this habitat type. During migration, almost any species may be expected.

Wet pine forest/pine savanna has resident species such as sandhill crane, eastern bluebird, and pine warbler. The great-crested flycatcher and summer tanager can be found in this habitat in the summer. In the winter, the American woodcock, common snipe, sedge wren, LeConte's sparrow, Henslow's sparrow, and grasshopper sparrow can be found in this habitat type. Additional species are likely during migration.

A mix of habitats adjacent to and including saltwater bays and inlets has permanent species such as the mottled duck, osprey, bald eagle, clapper rail, American oystercatcher, Forester's tern, belted kingfisher, fish crow, seaside sparrow, painted bunting, red-winged blackbird, and boat-tailed grackle. The least bittern, gull-billed tern, barn swallow, and cliff swallow can be found in this habitat in the summer. In the winter, the pied-billed grebe, American white pelican, double-crested cormorant, white-faced ibis, varied waterfowl, northern harrier, peregrine falcon, Merlin, American kestrel, tree swallow, yellow-rumped warbler, Savannah sparrow, and song sparrow can be found in this habitat type. During migration, a wide variety of species from shorebirds to passerines may be expected (Audubon Mississippi 2005).

3.5.3 FISH RESOURCES

Fish and shellfish are among the most recognizable and important renewable resources in the Heritage Area. These fisheries resources are dependent upon the large expanse of estuarine systems that constitute Estuarine Fisheries Habitat (EFH), as defined under the Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267) (COE & Tetra Tech 2005). Estuaries form where fresh water from rivers mingle with saline waters from the Gulf of Mexico and they provide spawning, nursery and adult feeding areas for many of the region's recreational and commercial fisheries, as well as habitat environmentally important for reef communities. Major commercial species harvested are white, brown, and pink shrimp (*Penaeus setiferus*, *Penaeus aztecus*, *Penaeus duorarum*), oysters (*Crassostrea virginica*), crabs (*Callinectes sapidus*), and menhaden (*Brevoortia patronus*). Important recreational species include: sand and spotted seatrout (*Cynoscion arenarius*, *Cynoscion nebulosus*), red and black drum (*Sciaenops ocellatus*, *Pogonias cromis*), grouper, southern flounder (*Paralichthys lethostigma*), cobia, shark, pompano, and Spanish mackerel (*Scomberomorus maculatus*).

Oysters are another of the Heritage Area's more valuable fisheries resources both in terms of harvesting and function. The reefs they form in these estuarine environments filtrate water, provide spawning habitat for fish, and protect shorelines from erosion. There are approximately 12,000 acres of oyster grounds in coastal Mississippi, with approximately 526 acres under lease to seven different leaseholders, and approximately 800 acres available for commercial harvest (Bradley Randall per. comm. 2007). The acreage open to commercial harvesting and public tonguing varies depending on water quality and regulatory oversight.

Oyster reefs can be found in many areas throughout the Mississippi Coast, but are concentrated in the western part, south of Pass Christian. Hurricane Katrina destroyed between 90 to 95 percent of the commercially harvestable oysters growing on approximately 10,000 acres in this area (Bradley Randall, per. comm. 2007). The Mississippi DMR Shellfish Bureau has a five-year recovery plan that includes: cultch planting in each spring and fall, reef cultivation, oyster relays, oyster lease rehabilitation, the Oyster Stewardship program, weather station monitoring, and sanitary surveys.

3.6 THREATENED AND ENDANGERED SPECIES

Within the Heritage Area, US Fish and Wildlife Service's (USFWS 2007) most recent list of endangered species includes one plant, Louisiana quillwort (*Isoetes louisianensis*), and seven animals: Alabama red-bellied turtle (*Pseudemys alabamensis*), Mississippi sandhill crane (*Grus canadensis pulla*), red-cockaded woodpecker (*Picoides borealis*), Kemp's (Atlantic) Ridley turtle (*Lepidochelys kempi*), brown pelican (*Pelecanus occidentalis*), dark gopher frog (Mississippi gopher frog) (*Rana capito sevosa*) and West Indian manatee (*Trichechus manatus*).

Eleven animals are listed as threatened: Gulf sturgeon (*Acipenser oxyrinchus desotoi*), loggerhead sea turtle (*Caretta caretta*), piping plover (*Charadrius melodus*), green turtle (*Chelonia mydas*), eastern indigo snake (*Drymarchon corais couperi*), gopher tortoise (*Gopherus polyphemus*), yellow-blotched map turtle (*Graptemys flavimaculata*), bald eagle (*Haliaeetus leucocephalus*), ringed map turtle (*Graptemys oculifera*), inflated heelsplitter (*Potamilus inflatus*), and Louisiana black bear (*Ursus americanus luteolus*). The black pine snake (*Pituophis melanoleucus ssp. lodingi*) and Pearl darter (*Percina aurora*) within the Pascagoula River system are candidate species being considered for listing. The bald eagle is no longer on the List of Endangered and Threatened Species but is still protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. Table D.4 in Appendix D depicts scientific names, Federal status and species distribution by county (USFWS 2007, Chandler 2007).

The eastern indigo snake, gopher tortoise, red-cockaded woodpecker, Mississippi gopher frog and black pine snake inhabit fire-dependent, upland longleaf pine forests (COE and TetraTech 2005). The threatened gopher tortoise digs borrows for shelter and nesting in well-drained sandy soil and the burrows are sometimes also inhabited by the threatened eastern indigo snake (Chandler 2007). The endangered Mississippi sandhill crane is found in a small area of wet pine savannahs west of the Pascagoula River and critical habitat has been designated on and adjacent to the Mississippi Sandhill Crane National Wildlife Refuge in Jackson County (Chandler 2007). The Louisiana black bear frequents bottomland hardwood forests but ranges into other types of

habitats. Brown pelicans feed in coastal waters and nest on small islands along the coast. Bald eagles nest near shorelines and feed near open water areas. West Indian manatees can be found infrequently in large bodies of fresh to saline water in coastal Mississippi.

The threatened yellow-blotched map turtle is present in the Chickasawhay, Leaf and Pascagoula Rivers, while the threatened ringed map turtle inhabits the Pearl River. The endangered Alabama red-bellied turtle is present in the lower Pascagoula River, Bluff Creek, Escatawpa River, Old Fort Bayou, Tchoutacabouffa River, Biloxi River and Back Bay of Biloxi. Stream modification and clearing along stream banks have adversely impacted the habitat of these species (Chandler 2007).

The Gulf sturgeon migrates between large coastal rivers and estuarine areas of the Gulf Coast. The USFWS has designated critical habitat for the threatened Gulf sturgeon along the Mississippi Gulf Coast and in the Pearl, Leaf and Pascagoula Rivers (Chandler 2007). The green sea turtle, Kemp's Ridley sea turtle and loggerhead sea turtle are present in the coastal marine and estuarine waters of Mississippi. The yellow-blotched map turtle inhabits large rivers and creeks and the Alabama red-bellied turtle is found in submerged aquatic vegetation in freshwater and brackish coastal channels. The Pearl darter is present only in areas of the Pascagoula River system that have sand and gravel bottoms and flowing water (COE & TetraTech 2005).

The piping plover migrates to the Gulf Coast during the winter season and rests and feeds on washover areas along barrier islands and coastal beaches. The USFWS designated 9,525 acres (127.6 miles) of shoreline in Coastal Mississippi as critical habitat for the piping plover (COE & TetraTech 2005:4-217-218). This critical habitat area includes the barrier islands (Cat, Ship, Horn, Petit Bois), Deer Island, Round Island and segments of the mainland coast (Lakeshore to Bay St. Louis, Pass Christian to the east end of Gulfport, excluding the port facility, Ocean Springs, and Grand Bay National Wildlife Refuge).

3.7 SOCIO-ECONOMIC CONDITIONS

3.7.1 DEMOGRAPHICS

The Heritage Area had a population of 445,375 in 2000, which was approximately 16 percent of the state's population. The most populous counties were Harrison and Jackson, which are

home to about three-quarters of the Heritage Area's residents. The three southern most counties contain over 80 percent of the Heritage Area's residents. Population within the Heritage Area is concentrated in incorporated communities primarily along the coast with the largest being Gulfport and Biloxi (Figure C.5 in Appendix C). Documented and projected population values for the six counties, over a 22-year period from 1990 to 2012, are included in Appendix D, Table D.5. All of the counties experienced strong growth (14 to 35 percent) between 1990 and 2000; however, the growth rates decreased significantly (2 to 10 percent with Harrison County being flat at 0 percent) between 2000 to the beginning of 2005. Pre (January) and post (October) 2005 Hurricane Katrina population numbers depict an average loss of 11 percent of residents in the three coastal counties with a 3 percent average increase by January, 2006. Census projections indicate that population levels in the three coastal counties will eventually exceed pre-Hurricane Katrina levels between 2007 and 2012. The census data indicate that the three northern counties grew by an average of 24 percent in the two months directly following the storm with outward exodus from the counties by January, 2006. Even though none of the three county populations fell below its respective pre-Katrina level, only limited growth is projected through January 2012.

While the three counties adjacent to the Mississippi Sound had the largest number of housing units for 1990 and 2000, a comparison of the number of housing units within the six counties indicates that Stone County and Pearl River County had the highest percent change at 14 percent each (Table D.6 in Appendix D.) Overall, the counties along the coast showed a five percent increase between 1990 and 2000 but the northern three counties experienced an 11 percent increase in housing units. As a result of the devastation caused by Hurricane Katrina in August 2005, housing units in Jackson, Harrison and Hancock Counties decreased by 10 percent but the northern three counties experienced an 8 percent increase in housing units. Rebuilding is occurring in the three coastal counties and is projected to increase by seven percent by January 2012. The three northern counties are expected to increase by 25 percent by January 2012.

In 2000, the population of the Heritage Area consisted of approximately 77.7 percent white, 18.1 percent African American, 2.2 percent Hispanic, and the remainder being other races (Appendix D, Table D.7.) For comparison during the same time period, the State of Mississippi was comprised of approximately 61.4 percent white, 36.3 percent African American, and 1.4 percent Hispanic. Harrison County, the

most populous of the six counties, is also the most ethnically diverse.

The most prominent demographic trend in the 1990s and continuing in recent years, particularly in response to work opportunities arising in the aftermath of Hurricane Katrina in 2005, has been the influx of Hispanics into the area. While there are no current estimates, the Gulf Coast Latin American Association had estimated that 30,000 Hispanics had moved to the Louisiana, Mississippi, and Alabama coasts by November of 2005 (Donato and Hakimzadeh, 2006). It is reasonable to assume that this number has increased, possibly significantly, since that time in response to the demand for construction jobs.

3.7.2 ECONOMY AND TRENDS

Enactment of Federal and State laws has had positive effects in the post-Katrina recovery process. Congressional passage of the Gulf Opportunity (GO) Zone Act of 2005 provides a range of federal tax incentives for private and public sectors that can be applied to storm related losses and rebuilding (Mississippi Development Authority 2006). Action by the Mississippi Legislature enabled the casinos to rebuild landward 800 feet from the shoreline instead of returning to their former sites on floating barges. This revision in the law enabled the coast's casinos to rebuild quickly and successfully secure insurance policies that would have been difficult to obtain for the former locations, and by relocating at higher elevations, decrease susceptibility to damages from future storms (www.mississippibeyondkatrina.com 2006). As of March 2007, ten casinos are open, one is under construction, and all of the coast's golf courses have reopened (Jones, per. comm. 2000).

The Governor's Commission on Recovery, Rebuilding, and Renewal, created in the wake of Hurricane Katrina by Governor Haley Barbour, articulated a goal to make the Mississippi Gulf Coast a Tier 1 Destination by 2010, by having 30,000 first class hotel rooms and 600,000 square feet of exhibit space available, increasing air service at the Gulfport–Biloxi International Airport, and providing several major destination attractions. While the goal appears attainable, successful development of the tourism industry is absolutely essential in order to generate tax revenues required to pay for the plan (www.mississippibeyondkatrina.com 2006). As of March 2007, the inventory includes 10,500 motel/hotel rooms, compared to the pre-Katrina level of 17,400 rooms (Hornsby, per. comm. 2007).

Not surprising, the rate of recovery is a direct function of geographic location and the degree of damage inflicted by the storm. Large capitol improvement projects such as casinos and condominiums are being constructed along US HWY 90 between Gulfport and Biloxi. Economically, all of the major corporate employers are returning to the coast (Faures, per. comm. 2007). A number of businesses that were near the coast and destroyed by the storm have relocated near I-10 interchanges with the I-10/US 49 interchange, “becoming the region's ‘main-main’ center of commerce” (Gibbs 2006). The migration of housing northward from the coast is likely and could be supported by a new east-west corridor between Pass Road and I-10 that is currently being evaluated (Faures, per. comm. 2007).

The lack of housing continues to be the largest challenge even though some enclaves of development are coming back (Faures, per. comm. 2007, Eaton, per. comm. 2007). Higher-end residential construction projects are progressing at a much faster rate than housing that is affordable to most of the coast's residents who are waiting on insurance settlements, grants, and loans before initiating rebuilding efforts (Eaton, per. comm. 2007). The high valuation of residential lots continues to make affordable housing, priced between \$80,000 and \$120,000, a scarce commodity (Eaton, per. comm. 2007). In addition, the shortage of a large transient residential construction work force can be directly attributed to a lack of housing or places for the workers to stay overnight (Eaton, per. comm. 2007).

Tourism on the coast continues to struggle (Hornsby, per. comm. 2007, Jones, per. comm. 2007). Hotel/motel occupancy rates in the three coastal counties temporarily surged during post storm related recovery activities, but the trend reversed as documented by fewer rooms being sold in January 2007, than in January 2006 (Hornsby, per. comm. 2007).

3.7.3 AESTHETIC AND SCENIC RESOURCES

There are numerous aesthetic and scenic resources located throughout the Heritage Area. Aesthetic and scenic resources are often defined as those natural resources, landscapes, and even man-made features that are a joy to experience. The Mississippi Gulf Coast has long been known for its uniqueness, beauty, and character as well as for the hospitality of its people. The three northern counties, located in the Piney Woods — a nickname given to the economically important southern yellow pine forests found in the region, are bisected by small creeks and rivers that are lined with white sand point

bars, beaches, and bottomland hardwood forests. The coast is typified by a pleasing blend of large oaks trees, lush lawns and flowering shrubs, white sand beaches, and waterways, including rivers, creeks and bayous, the Bay of St. Louis and Back Bay of Biloxi and their estuaries, and the Mississippi Sound. The Mississippi Sound, usually a calm expanse of water because of its protected location between the mainland and barrier islands to the south, offers peaceful and tranquil vistas, enjoyed by visitors and residents alike.

A prominent, easily accessible, man-influenced vista is the scenic drive on US HWY 90 along the coast that provides expansive views of the 26-mile long, man-made beach and the Mississippi Sound. The beauty of three streams, Wolf River, Black Creek, and Pascagoula River, has been recognized and provided regulatory protection through their designation as Wild and Scenic Streams. The islands of the Gulf Islands National Seashore, Petit Bois, Horn and East and West Ship, and Cat, as well as the mainland headquarters on Davis Bayou, are natural scenic resources with wilderness qualities. Davis Bayou is an aquatic wilderness and Horn and Petit Bois are undisturbed barrier islands that were designated as wilderness areas under the 1978 Wilderness Act. A wide array of aesthetic and scenic resources are prominent in three national wildlife refuges, Mississippi Sandhill Crane, Bogue Chitto, and Grand Bay; six wildlife management areas, Old River, Little Biloxi, Red Creek, Pascagoula, Ward Bayou and Wolf River; and six preserves owned by The Mississippi Nature Conservancy, Mike's Island, Willie F. Brown, Sweet Bay Bogs, Herman Murrah, Charlie Deaton, and Old Fort. The Crosby Arboretum and Pinecote Pavilion provide easy access to very scenic natural and architectural resources that highlight the Heritage Area's pine savannah and pitcher plant bog communities. Many of the places listed as National Historic Register Sites and National Historic Register Districts were very scenic and aesthetically pleasing prior to their battering by Hurricane Katrina and efforts are being undertaken to restore their beauty, where practicable.

3.7.4 RECREATION RESOURCES

The Heritage Area is rich in both natural and man-made recreational resources (See Appendix A). Figure C.6 in Appendix C illustrates the general distribution of recreational/tourism services that were available to serve heritage tourists prior to Hurricane Katrina's passage in 2005. The more developed services are concentrated presently in the coastal zone between I-10 and US HWY 90, but more rustic accommodations are available throughout the Heritage Area

at the many wildlife management areas, DeSoto National Forest, state and local parks and private campgrounds. Bordering the Mississippi Sound is the longest (26 miles), publicly accessible, man-made, white sand beach in the world. This beach, backed by a stepped, concrete seawall and walking path, provides expansive recreational opportunities for tourists and residents alike because of its accessibility and space sufficient to accommodate many different users. Shoreline activities include sunbathing, exercise, bird watching, fishing, swimming, wading, and water sports. More adventuresome and traditional water-related activities include deep-sea fishing, diving, sailing, and excursions to Ship Island or other barrier islands. In addition, the demand for eco-tourism has resulted in the establishment of new businesses that offer river/eco-tours, most notably on the Pascagoula River, Biloxi Bay area, and Grand Bay area. Numerous canoe and kayak rental tours are available for coastal areas and on interior streams such as Wolf River, Red Creek and Leaf River (Jones, per. comm. 2007).

Shopping, dining, sightseeing, and water sports were the cornerstones of tourism on the coast long before the legalization and return of casinos in the early 1990s and the passage of Hurricane Katrina in 2005. These activities continue to return as recovery efforts progress. Special events and festivals can also be expected to increase with the passage of time (See Appendix A). The encouragement of gaming by the casinos includes attractive amenities including, but not limited to, golf, tennis, fishing, shows, and concerts. The casinos can be expected to continue to provide and upgrade these amenities in order to recruit new customers and inspire repeat trips with emphasis on becoming a destination that can accommodate the whole family.

Numerous publicly owned refuges, parks, wildlife management areas, Gulf Estuarine Management Sites, and a national forest within the Heritage Area provide opportunities for various recreational activities including hiking, camping, bird and wildlife watching, hunting, fishing, boating, horseback riding, and ATV, bicycle and motorcycle riding (Table D.8 in Appendix D). The Mississippi Sandhill Crane National Wildlife Refuge (NWR) and the Grand Bay National Wetland Reserve/National Estuarine Research Reserve contain pine savannah and tidal marsh habitat with the latter providing habitat for the endangered Mississippi sandhill crane. The Bogue Chitto NWR consists of a bottomland hardwood forest traversed with numerous sloughs and bayous where hunting is not permitted. Seven wildlife management areas are present in the Heritage Area that allow hunting in addition to

other recreational activities: Old River WMA, Little Biloxi WMA, Red Creek WMA, Pascagoula River WMA, Ward Bayou WMA, Wolf River WMA, and the Pearl River WMA. There are also six state parks or recreational areas, the DeSoto National Forest, and Gulf Islands National Seashore. A mainland headquarters area, Davis Bayou in Ocean Springs; East and West Ship, Horn, and Petit Bois Islands along with two areas of Cat Island are a part of the Gulf Islands National Seashore. Horn and Petit Bois Islands are designated wilderness islands that receive the highest level of protection afforded by the Federal government.

Recreational opportunities related to bird watching and education regarding native plants and wildlife are also provided by the Mississippi Coastal Birding Trail, the Crosby Arboretum in Picayune and the annual Wild Wing River and Nature Festival headquartered in Moss Point. The later festival is a weeklong ecotourism event organized by the Institute for Compatible Development and the Pascagoula River Audubon Center and designed to educate the public regarding the Pascagoula River ecosystem and migratory birds using this corridor.

3.8 CULTURAL, HISTORICAL AND ARCHAEOLOGICAL RESOURCES

3.8.1 HISTORIC OVERVIEW AND SIGNIFICANCE

The abundant resources of the Mississippi Gulf Coast have attracted settlers for thousands of years. The first Native Americans came to the coast over 10,000 years ago, and their descendants explored and settled along the area's rivers and bays and the Mississippi Sound (Blitz and Mann 2000). Many of these former homes and villages are marked by shell middens along the shores of the area's bays, islands and estuaries. The Native Americans of the coast used rivers as trading routes to bring goods from all over North America back to their villages and ceremonial centers. These centers consisted of earthen mounds built at special ceremonial sites on the Pearl and Pascagoula Rivers and on the Mississippi Sound.

In 1699, the Mississippi Gulf Coast became the colonial capital of a European empire. The calm waters of the Mississippi Sound and a natural harbor near Ship Island attracted early French explorers, who were searching for the mouth of the

Mississippi River (McWilliams 1981:5, Weinert 1969). The anchorage of these first ships in Mississippi waters marked the birth of France's Louisiana colony, which spread to encompass much of the area that was to become the southeastern United States and to include major cities such as Mobile and New Orleans (Howell 1973). This colonial episode also marked the first sustained contact between the French and the native inhabitants of Mississippi, an event that would have profound consequences for both groups. The French built a fort and founded a settlement on Biloxi Bay that makes this area one of the oldest, continuously occupied communities in the Nation. The French settlement at Biloxi Bay, which briefly served as the colony's capital, and the harbor at Ship Island in the Mississippi Sound served as the entry points for people moving to the colony (Weinert 1969:275).

The Mississippi Gulf Coast was part of three colonial empires—France, Britain, and Spain—before becoming part of the United States in the early 1800s (Haynes 1973, Holmes 1973, Kynerd 1973, Sullivan and Powell 1999:21-35). It was not long before the waterways of the Mississippi Gulf Coast were witness to important events in the history of this new country. In 1814, during the War of 1812, the Mississippi Sound was taken over by what has been called the largest amphibious invasion force ever to enter American waters. Dozens of British warships occupied the Sound and thousands of British soldiers encamped on Ship Island in preparation for an attack on New Orleans (Weinert 1969:280). While the British were amassing off the coast, Andrew Jackson marched an American army overland across south Mississippi to defend New Orleans (Sullivan and Powell 1999:38-39). Legend has it that the British arrested a local Frenchman living on Cat Island to conscript him as a guide through the tricky passes of the Mississippi Sound and the marshes of Louisiana that led to the Mississippi River (Meadows 1998:23). His refusal, along with a brief naval battle between the British and the Americans in the Mississippi Sound, supposedly delayed the British forces long enough for Jackson to entrench his army and stop the invasion at the Battle of New Orleans.

Ship Island and the Mississippi Gulf Coast again saw military action during the Civil War. In 1859, to provide protection of the shipping lanes and the naturally deep-water anchorage at Ship Island, the U. S. Army Corps of Engineers began building a brick fort on Ship Island that was part of the United States' system of coastal fortifications (Weinert 1969:281). Ship Island served as a staging ground for ships and thousands of troops before the Union attack on New Orleans in 1862, and

later in 1864, before the attack on Mobile Bay (Burns 1971:19, Weinert 1969:300). Ship Island was also used during the war as a prison for captured Confederate soldiers and as a detention center for Confederate sympathizers from New Orleans (Burns 1971:23, Weinert 1969:301). During the Civil War, Union troops stationed on Ship Island included the Louisiana Native Guards, African-American militia units composed of freeman of color and former slaves (Bears 1984). The 2nd regiment of the Native Guards met Confederates in battle in Pascagoula and consequently, became the first African-American unit on the Gulf Coast to suffer and inflict casualties.

Waterways are the lifeblood of the Mississippi Gulf Coast, and the history and modern culture of the coast have been shaped by the opportunities they have provided. Fishing, trading, logging, shipbuilding, and tourism all have long histories here and each is dependent on the area's innumerable waterways. Native Americans fished the waters of the coast and farmed its riverbanks for thousands of years before the first European set foot on Mississippi soil (Blitz and Mann 2000). The seafood industry developed along the Mississippi Gulf Coast in the 1800s, and the harvesting and processing of seafood have been a critical part of the economy and identity of the region for well over a century (Gutierrez 1984, Schmidt 1995). The seafood industry profoundly shaped the history and culture of the coast by attracting immigrant groups-Slavonians, Cajuns, and Vietnamese-to the area, making the Mississippi Gulf Coast of today a melting pot of people and traditions.

Trade and commerce along coastal waterways began as early as 3000 years ago when Native Americans on the Pearl River acquired exotic stone from all over North America to make tools and ornaments. The importance of shipping and waterways continued throughout the coast's early history as the natural harbor at Ship Island served as a port-of-entry for colonists entering Louisiana (Weinert 1969). As American settlers moved into the interior of the southeastern United States in the early 1800s, towns were established along the coast's rivers to serve as ports where raw materials from the interior were shipped to mills and markets. The economic significance of waterways naturally led to the importance of boat building along the Mississippi Gulf Coast. Boats have been built on the coast for thousands of years, from the prehistoric dugout canoes of Native Americans to the modern ships constructed today in Pascagoula for the United States Navy (Stowe 1974, Ziglar 1974). From the 1800s through the early 1900s, sailing ships known as schooners-the working

boats of both the seafood industry and river commerce-were a constant sight along the coast's rivers and the Mississippi Sound. Local craftsmen built these schooners, called "White Winged Queens" for their beauty when under full sail, specifically for the conditions of the Mississippi Gulf Coast (Scholtes 1998). This kind of boat is known as the Biloxi Schooner, a type officially recognized by the United States Naval Institute. During both world wars, the shipyards of the Mississippi Gulf Coast were bustling with construction activity supporting the national war effort (Ziglar 1974). Many women worked in these shipyards during World War II, after thousands of men were mobilized for military service. The contribution of these Mississippi women was vital, and in 1942, Vera Anderson from Pascagoula was named Champion Woman Welder of the World (Birmingham 1998:315).

Timber was an important commodity early in the coast's history (Fickle 2004, Hickman 1962). While the soils of the Mississippi Gulf Coast are too poor to support intensive agriculture, they originally supported a canopy of towering, widely spaced longleaf pines (Hickman 1962:1-3). The forests of the Mississippi Gulf Coast produced masts, planks, and naval stores for colonial ships and those of the early United States (Hickman 1962:15-16). In the early 1800s, logs were floated down local waterways to be processed at mills on the Pascagoula River and the Pearl River (Hickman 1962:17). Lumber and other forest products such as charcoal were then loaded into schooners for delivery to New Orleans or out to ocean-going vessels in the Mississippi Sound for transportation to markets around the world (Pearson 2001:78, Sullivan and Powell 1999:140). A lumber boom occurred along the Mississippi Gulf Coast around the end of the nineteenth century at a time when the region's longleaf-pine forests were becoming accessible to railroads, and when loggers were moving into the Mississippi Piney Woods from the depleted forests of the Northeast and Great Lakes regions (Fickle 2004:xiii, Hickman 1962). The logging boom along the Mississippi Gulf Coast saw the rise and fall of a number of logging towns across the Piney Woods region as mills were moved when local stands of timber were exhausted (Fickle 2004:xiv). The felling of the longleaf pine forests of the Mississippi Gulf Coast was one chapter in the story of the almost complete destruction of a unique ecosystem that once existed across the Coastal Plain of the entire southeastern United States.

Prior to the lumber boom, settlers who worked small family farms and raised free-range livestock resided in the Piney Woods of the Mississippi Gulf Coast (Hickman 1962:10). Their

lifestyle presented a sharp contrast to that of the large plantations and cotton-based economy that dominated much of the rest of Mississippi and the Deep South (Bolton 1998:16). The legacy of the logging boom was determining what to do with miles and miles of deforested land that could grow trees but not much else. One of the primary ways in which this problem was addressed was through the growing of pine species for paper production, a transition that began in the Moss Point area in the early 1900s. This conversion was successful, and forestry and forest products continue to be an important part of life along the coast (Fickle 2004:xiv).

3.8.2 CULTURAL RESOURCES

The cultural resources of the Mississippi Gulf Coast include sites dedicated to artists, both past and present, as well as events and places that express the area's unique heritage. The culture of the Mississippi Gulf Coast is the product of a unique blend of ethnic groups that is the result of multiple waves of immigration and migration to the area over the course of the past 300 years. Many of the coast's modern cultural resources are directly related to these immigrant groups. These resources include businesses, social halls, and sacred places that are important to ethnic groups as well as annual events and festivals where coastal traditions are expressed. The sacred places include the coast's numerous cemeteries that exhibit variability in the traditional treatment of gravesites, and churches, where art and architecture reflect the distinctive backgrounds of their congregations.

The Mississippi Gulf Coast has been and continues to be home for a number of distinguished artists. The works of contemporary painters, sculptors, and potters can be viewed in numerous privately owned galleries and studios across the coast (Figure C.7 in Appendix C). The Hancock County Library in Bay St. Louis has been designated a National Literary Landmark because it was used by the author and historian Stephen Ambrose to research many of his books. The library also exhibits a sculpture by Richmond Barthe, a world-renowned artist from Bay St. Louis. Additionally, three museums celebrate the works of nationally acclaimed artists who have called the Mississippi Gulf Coast home. One of these is the Alice Moseley Folk Art and Antique Museum in Bay St. Louis, which is located in the former home of the folk artist and self-taught painter Alice Moseley. The Ohr-O'Keefe Museum of Art in Biloxi is dedicated to the life and works of George Ohr, the internationally known "Mad Potter of Biloxi" who was known for the complex forms of his pots and their

beautiful glazes. In Ocean Springs, the Walter Anderson Museum of Art presents the works of Walter Anderson who spent his life capturing the beauty of the plants, animals, and landscapes that surrounded him on the Mississippi Gulf Coast.

The cultural resources of the Mississippi Gulf Coast also include the many local events and festivals that celebrate the area's distinctive traditions through music, food, and various activities. Culturally based festivals are held throughout the year across the entire heritage area. Local festivals include celebrations of the seafood industry, the timber industry, rural lifeways, ethnic traditions, historical events, and local artists. Significant local events include Mardi Gras, the season of carnival balls and parades that precedes Lent (Bielenberg 1998, Powell 1998), and the Blessing of the Fleet, which includes activities surrounding the day when the working boats of the fishing fleet are blessed by a priest (Ellis 1998, Ryle 1998).

3.8.3 HISTORIC RESOURCES

A number of the historic properties on the coast are listed on the National Register of Historic Places (NRHP) and many others have been designated Mississippi Landmarks by the Mississippi Department of Archives and History (MDMR-CRMP & CEI 2005) (See Appendix A and Appendix B, MDAH 2002, 2005 a, b, c). Surveys indicate that many more properties, although not listed, are eligible for inclusion on the NRHP (CEI-CRMP 2005). Additionally, the Rocket Propulsion Test Complex at NASA's Stennis Space Center in Hancock County and Beauvoir in Biloxi, have been designated National Historic Landmarks.

A total of 135 properties have been listed on the NRHP in the Heritage Area (Appendix B, Figure C.7 in Appendix C). These include National Historic Districts, individual structures, archaeological sites, Multiple Property Submissions, and Multiple Resource Areas (MRA). Virtually all of the NRHP listings are located in the three southern counties. George, Pearl River, and Stone Counties each have only one property listed. Hancock County contains 18 NRHP properties, most of which occur within the Bay St. Louis MRA, which includes approximately 700 individual buildings located in four historic districts: Beach Boulevard, Main Street, Sycamore Street, and Washington Street. Harrison County contains 46 NRHP properties, which includes six historic districts: West Beach in Biloxi, West Central in Biloxi, Biloxi Downtown, Biloxi Veteran's Administration Medical Center, Scenic Drive in Pass Christian, and Harbor Square in Gulfport. Jackson County

contains 68 NRHP properties, including nine historic districts. Historic districts located in Ocean Springs include Indian Springs, Lover's Lane, Marble Springs, Old Ocean Springs, Shearwater, and the Sullivan-Charnley. Pascagoula has three historic districts: Krebsville, Orange Avenue, and Front Street.

3.8.4 ARCHAEOLOGICAL RESOURCES

Professional archaeologists have consistently cited the Mississippi Gulf Coast as the least well-known region of the Gulf Coast (Blitz and Mann 2000:1, Davis 1984:125, Lewis 1988:109). Reasons given for this include the absence of active, university-based archaeological programs in the area and the lack of large-scale cultural resource management projects. The low level of archaeological knowledge of the Mississippi Coast is not due to the absence of archaeological resources, because it is clear from the little work that has been done that the area contains a long, rich archaeological record of sites that date to periods of Native American, European, and American occupation. An archaeological sequence that encompasses the entire span of human occupation has been developed for the southeastern United States (Smith 1986, Steponaitis 1986), and each of the periods in this sequence are represented by archaeological sites on the Mississippi Gulf Coast (Blitz and Mann 2000:Figure 7.1). The major periods in this sequence and their associated dates for the Mississippi Gulf Coast are: Paleo-Indian (10,000 to 8000 B.C.), Archaic (8000 to 800 B.C.), Woodland (800 B.C. to A.D. 1000), Mississippian (A.D. 1000 to 1550), Protohistoric (A.D. 1550 to 1699), Early Historic (A.D. 1699 to 1775), and Late Historic (A.D. 1775 to present) (Blitz and Mann 2000).

Native Americans have occupied the Mississippi Gulf Coast since before the sea stabilized at its current level, which occurred approximately 4000 years ago (Coastal Environments 1977:1; Gagliano 1984:17; Lewis 1988:111). Therefore, many of the archaeological sites that date to the earliest human occupation of the area—the Paleo-Indian and early Archaic periods—are probably submerged in the shallow waters of the Mississippi Sound (Coastal Environments 1977, Gagliano 1984:17, Lewis 2000:530-531). Sites that date to the Middle Archaic period and later are found across the entire region in various environmental settings that include barrier islands, tidal marshes, beach ridges, prairies, and uplands (Blitz and Mann 2000, Lewis 2000).

Archaeological sites from each of the major prehistoric cultural periods have been identified on the Mississippi Gulf Coast. These sites are of national and regional significance

for understanding the history and lifeways of Native Americans in the southeastern United States. Two ceremonial centers have been identified on the Pearl River in Hancock County that date to the Late Archaic period, approximately 1500 to 600 B.C. These two sites, Cederland and Claiborne, are important, local manifestations of the region-wide Poverty Point culture, named after the enigmatic Poverty Point site in northeast Louisiana (Blitz and Mann 2000:20, Coastal Environments 1977:250-265, Gagliano and Webb 1970, Webb 1982:34-36). The concentration of tools made from non-local stone at Cederland and especially Claiborne shows that materials from all over North America were being used at these sites and suggests that the Pearl River was a major corridor for trade over 3000 years ago (Boudreaux 1999).

There are several known Woodland period sites on the Mississippi Gulf Coast that were significant regional centers and provide evidence for long-distance trade. The presence during the Middle Woodland period (100 B.C. to A.D. 200) of copper artifacts in the form of regionally significant symbols at the Greenwood Island site in Jackson County indicates that interaction continued between natives of the Mississippi Gulf Coast and distant groups (Blitz and Mann 2000:16). Slightly later, between A.D. 200 and 400, a ceremonial center was built at the mouth of the Pearl River. This site, known as the Jackson Landing/Mulatto Bayou site, consists of a low earthen mound and a semicircular earthen wall that is 1500 feet long and in some places 12 feet high (Blitz and Mann 2000:39-41, Williams 1987). Another important site that possibly also dates to the Middle Woodland period is the Graveline Mound site, a major ceremonial center consisting of a rectangular platform mound and at least six smaller conical mounds located near the mouth of Graveline Bayou in Jackson County (Blitz and Mann 2000:35).

Two Mississippian regional centers have been documented on the Mississippi Gulf Coast. The Singing River site is located on the Pascagoula River within Pascagoula's Front Street Historic District (Blitz and Mann 2000:48). The site consists of one mound and a large trash deposit located nearby. Important artifacts that have been found at the site include a large ceramic smoking pipe in the shape of a kneeling person, a form that links the Singing River site to other Mississippian mound sites across the southeastern United States. The other Mississippian mound site is located on Deer Island, just offshore from Biloxi in Harrison County (Blitz and Mann 2000:53). The Deer Island site consisted of at least one mound and an extensive trash deposit located nearby (Blitz and Mann 2000:54, Kraus 1985:59). Artifact styles represented at the

Deer Island site indicate that its occupants were interacting with people to the east around Mobile Bay and to the north around the Moundville site in northwest Alabama.

The known archaeological sites that date to the Colonial period (A.D. 1699 to 1810) along the Mississippi Gulf Coast consist of two French sites and a few Native American settlements. A largely uninvestigated area in Ocean Springs on the bluffs along the east side of Biloxi Bay is the probable location of Fort Maurepas and Vieux Biloxi, the short-lived capital of the Louisiana colony from 1719 to 1721 (Blitz and Mann 2000:65, Blitz et al. 1995, Connaway 1981:63-68). Another area on high ground in Ocean Springs, just south of the mouth of Biloxi Bay, is the location of another French site, possibly a brickworks (Blitz and Mann 2000:66). Several burials discovered near the lighthouse in Biloxi probably represent a French colonial cemetery that was associated with the settlement of Nouveau Biloxi (Carter et al. 2004). Underwater archaeologists have investigated a shipwreck in Biloxi Bay that is likely a small ship that dates to the French colonial period (Krivor 2001). The few other Colonial-period archaeological sites along the Mississippi Gulf Coast represent Native American settlements. Archaeological excavations at the Old Spanish Fort/Krebs House in Pascagoula show that the house, which was constructed around 1775, was built on top of a Native American site that dates to between 1750 and 1775 (Waselkov and Silvia 1995:32-34). Another site on the west side of the West Pascagoula River probably represents the remains of houses that were part of a Pascagoula Indian community that was visited by the French (Blitz and Mann 2000:69-74). The Jackson Landing/Mulatto Bayou site in Hancock County on Mulatto Bayou near the mouth of the Pearl River contains an Early Historic-period component that has produced French trade goods and Indian pottery (Williams 1987).

Few archaeological studies have been conducted on Mississippi Gulf Coast sites that date to after 1775. The studies that have taken place primarily have been investigations of shipwrecks. One of these was the documentation of the nineteenth-century steamboat Josephine in waters near Horn Island (Ball et al. 2001). Other studies documented several partially submerged nineteenth and early twentieth-century wrecks along the lower Pearl River in Hancock and Pearl River Counties and adjacent portions of Louisiana (Pearson 2001). The wrecks investigated include a sidewheel steamboat, a schooner and a barge near the now-abandoned community of Logtown in Hancock County, and a sidewheel launch near Walkiah Bluff in Pearl River County.

3.8.5 THREATS TO CULTURAL, HISTORIC AND ARCHAEOLOGICAL RESOURCES

There are several factors that threaten the cultural, historic, and archaeological resources of the Mississippi Gulf Coast National Heritage Area. The major threat to the region's heritage resources has been industrial, commercial, and residential development. Current economic and development pressures within the Heritage Area have resulted in a period of unprecedented growth and change for the Mississippi Gulf Coast (MRMR-CRMP & CEI 2005:1-2). These changes are marked by dramatic increases in developed land use and population growth. Significant amounts of recent and projected residential, commercial, and infrastructure construction have or will occur to accommodate the growing population and increased number of visitors. Average home values on the Mississippi Gulf Coast had increased significantly since dockside gaming was legalized in 1990, but they rose even more dramatically following the destruction of thousands of homes by Hurricane Katrina in 2005. As property values continue to rise, there is an increased danger that historic structures and traditional sites important to the identity of the coast will be destroyed as properties are sold for re-development.

Development has destroyed some and continues to threaten other archaeological, historical, and cultural resources within the Heritage Area. The clearing and soil disturbance necessary for new construction endangers archaeological sites and historic structures that are present within areas to be developed. In many cases, the land most desirable for modern commercial and residential development-high ground near waterways-is also the land that was most likely to have been used by Native Americans and early Euro-American settlers. Numerous archaeological and historic sites on the coast, many of which were nationally significant and either on or eligible for the National Register of Historic Places, have been destroyed or threatened in the last 30 years. Many more sites will be threatened with destruction in the next 10 years.

A considerable portion of development along the coast is from the construction of casinos and casino-related structures, such as hotels and parking garages (Meyer-Arendt 1998). The most dramatic changes, up to this point, have been concentrated primarily on the waterfront in certain areas of Harrison and Hancock Counties. The construction of high-rise hotels and condominiums on the waterfront has significantly altered the viewsheds of many sections of Bay St. Louis, Biloxi,

d'Iberville, and Gulfport. This is a trend that will likely accelerate in the future. For example, the eastern end of Biloxi, known as Point Cadet, has been transformed from a district of shrimp boats and seafood processing plants to a complex of casinos now marketed as "Casino Row" (Meyer-Arendt 1998:293). In this case, the places and symbols of the city's rich maritime past have been replaced by high-rise hotels and parking garages. While development has involved many physical modifications to the area's heritage resources, not all changes and threats involve tangible entities such as structures, archaeological sites, or landscapes. The dramatic emphasis on new economic opportunities across the entire coast, coupled with the significant influx of people from outside the area, could also result in the loss or devaluation of the Mississippi Gulf Coast's past and living heritage (Meyer-Arendt 1998:303). Occupations, traditions, and knowledge associated with traditional lifeways—such as within the seafood, shipbuilding, or timber industries—could disappear relatively quickly. Consequently, the qualities once unique to the coast could be destroyed or forgotten.

At least two other factors, in addition to development, have significantly affected the heritage resources of the Mississippi Gulf Coast in a negative way. First, the looting of archaeological sites by relic collectors has destroyed a number of the area's most important sites, rendering them largely or completely useless for investigation by professional archaeologists. Second, natural processes, such as storms and erosion, also threaten the area's heritage resources. The recurrent, destructive wind and waves of numerous hurricanes have damaged or claimed countless buildings and archaeological sites. For example, Hurricane Katrina in 2005 destroyed or damaged hundreds of structures that were listed on the NRHP, and thousands more that were eligible for inclusion on this list. Previously, Hurricane Camille in 1969 destroyed numerous structures that undoubtedly would have been eligible for listing on the NRHP as well. In addition to the destructive power of storm surges associated with large storms, many archaeological sites have disappeared due to chronic erosion resulting from factors such as increases in runoff and boat traffic as well as wetlands losses.

3.8.6 NATIVE AMERICAN RESOURCES

Executive Order 13175 requires consultation and coordination with Indian Tribal Governments when planning projects requiring Federal regulatory compliance. While there are numerous archaeological sites containing Native American resources in the Heritage Area, an initial review of a map of

Native American properties prepared by MARIS did not reveal any properties in the Heritage Area that are Indian Trust Lands. However, the Mississippi Band of The Choctaw Indians may own a small parcel of land in Jackson County, on MS HWY 57 near I-10. Twelve Federally recognized Native American tribes with cultural interests in southern Mississippi include: Muscogee (Creek) Nation of Oklahoma, Eastern Band of the Cherokee Nation, Choctaw Nation of Oklahoma, Tunica-Biloxi Tribe of Louisiana, Cherokee Nation of Oklahoma, Coushatta Tribe of Louisiana, Tribal Council of the Mississippi Band of Choctaw Indians, Miccosukee Tribe of Indians of Florida, Seminole Nation of Oklahoma, Seminole Tribe of Florida, Poarch Band of Creek Indians, and The Chickasaw Nation (COE and Tetra Tech 2005). A representative of the Mississippi Band of Choctaw Indians is a member of the Oversight Commission for the Heritage Area and will be consulted regarding potential impacts of any specific proposed actions to Native American Resources including trust lands.

3.9 AIR QUALITY

The Clean Air Act requires the EPA to set National Ambient Air Quality Standards for pollutants that are considered to be harmful to the public's health and the environment. Two types of national air quality standards were established: Primary standards and Secondary standards. Primary standards set limits to protect public health, which include the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, which include the protection against decreased visibility, damage to animals, crops, vegetation, and buildings (USEPA 2006).

The EPA Office of Air Quality Planning and Standards (OAQPS) has set National Ambient Air Quality Standards for six principal pollutants. These "criteria" pollutants are carbon monoxide, lead, nitrogen dioxide, particulate matter (PM₁₀ and PM_{2.5}), ozone, and sulfur oxides (Table D.9, Appendix D). Mississippi is one of only three states east of the Mississippi River that is meeting all of the standards set forth by the EPA (MDEQ 2005). The Mississippi Department of Environmental Quality (MDEQ) monitors all of the criteria pollutants except lead, although only ozone, particulate matter, nitrogen dioxide, and sulfur dioxide is monitored within the Mississippi Gulf Coast Region (Table D. 10 in Appendix D).

3.10 NOISE

Noise is described as the "unwanted sound that interferes with normal human activities." Stationary sources such as

ongoing commercial operations and mobile sources like heavy equipment, trucks, and automobiles are examples of the several types of noise sources.

Noise is one of the most pervasive pollutants today. Sounds from road traffic, jet planes, construction equipment, manufacturing processes, lawnmowers, and stereo systems are among the noise routinely broadcast into the air. Noise has a negative impact on the health and well-being of both humans and wildlife in many ways.

The decibel is the basic unit used to represent given sound levels (Table D.11 in Appendix D). Responses to noise vary, depending on the type and characteristic of the noise, level of noise, distance between the noise source and the receptor, the receptor's sensitivity, and the time of day. Hearing loss and hearing impairment are the most conspicuous problems related to noise.

Within the Heritage Area urbanization is the major cause of noise pollution. Increases in land development, population, tourism, vehicle, rail, and air traffic have all contributed to the increase in the ambient noise levels of moderate-to-highly populated urban areas. High traffic transportation corridors, such as I-10 and the Gulfport-Biloxi International Airport are highly susceptible to increasing ambient noise levels due to urban growth and development.

Vehicular traffic on the high-volume roadways, US HWY 90, US HWY 49, Pass Road, and I-10 are the primary mobile noise sources in the Heritage Area. These roadways preceded much of the area's development, and there have been very few complaints related to vehicular noise from these roadways. The Gulfport-Biloxi International Airport, Stennis Space Center, and Keesler Air Force Base are the primary stationary sources of noise within the Mississippi Gulf Coast National Heritage Area. The Gulfport-Biloxi International Airport is the major passenger airport in the study area. The total number of passengers increased four-fold during the period of 1992 to 2000. Total commercial operations also increased during the same period. Stennis Space Center is a NASA rocket testing facility along the western edge of the study area. Noise pollution has always been an issue with the facility. To lessen the impact of noise pollution associated with rocket testing, NASA purchased all lands within the 125-dB acoustical boundary and prohibits human habitation within the 110dB acoustical boundary.

Keesler Air Force Base is located in the city of Biloxi. The primary source of noise associated with the base is normal base operation and aircraft usage and maintenance. Noise generated from aircraft flight operations represents the most substantial noise source on the base.

3.11 HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE

The MDEQ, Office of Pollution Control (OPC), Hazardous Waste Division (HWD) regulates hazardous waste statewide. The HWD manages the assessment and remediation of abandoned and responsible party sites where hazardous or toxic substances have been released to the environment, and also provides support to the Environmental Permits Division (EPD) and Environmental Compliance and Enforcement Division (ECED) in regulating the management of hazardous waste under the Resource Conservation and Recovery Act (RCRA).

Table D.12 in Appendix D lists the number and types of regulated sites within the six coastal counties of Mississippi. These six counties contain 1274 underground storage tanks (USTs), with 406 of these reported as leaking underground storage tanks (LUSTs) (MDEQ 2007a). The MDEQ maintains an online list containing Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and Uncontrolled Sites, which identifies a total of 208 sites in the six coastal counties (MDEQ 2007b). The EPA lists a total of three National Priorities List (NPL) Sites. Of this number, one site is on the final NPL List, one site is proposed for the NPL List, and one has been removed from the NPL list (USEPA 2007).

4.0 ENVIRONMENTAL EFFECTS

As discussed in Section 1.8.2, environmental effects can be described in relative terms of intensity (low, medium, high), relationship (direct or indirect), duration (short-term or long-term) and value (beneficial or adverse). By virtue of the goals envisioned to be accomplished through the designation of the Heritage Area and implementation of the Management Plan, the Corridor-Cluster alternative is intended to have beneficial rather than adverse effects on the natural and human environment. This alternative is conceptual at this initial stage of development, but includes strategies considered supportive of achieving the primary goals for the 2.7-million

acre Heritage Area: 1) Strengthen the Sense of Heritage Identity, 2) Conserve the Area's Heritage Resources, and 3) Promote and Market the Heritage Area.

4.1 GEOLOGY

The No Action alternative would result in a continuation of current trends and practices related to the use of geologic resources, especially with regard to extraction and processing of non-renewable resources such as oil, gas, sand and gravel. These practices could have a medium, direct, long-term, adverse effect on the geologic resources and landscape.

Implementation of the Corridor-Cluster alternative could have medium, direct, long-term, beneficial effect on geologic resources and landscapes by raising awareness of the importance of undertaking extraction and processing in an environmentally sound manner without leaving unsightly scarring on the landscape.

4.2 WATER RESOURCES AND WATER QUALITY

The No Action alternative would result in a continuation of current trends and practices related to water resources and water quality. With an increase in population and demands on water resources, there is a potential for conflict to arise over competing demands and for a decrease in water quality. Selection of the No Action alternative could have a medium to high, indirect, long-term, adverse effect on water resources and water quality.

Implementation of the Corridor-Cluster alternative could have both medium to high, direct and indirect, long-term beneficial effects by a heightening awareness of water resources and water quality issues through a description of historic and current uses, impacts, and the need to conserve these resources for the maximum benefit and enjoyment of all users. The increase in recreational activities involving water resources is expected to grow in coastal Mississippi and education activities undertaken as part of Heritage Area sponsored or supported programs could help promote more responsible use of water resources and maintenance or enhancement of water quality that support recreational uses, such as primary contact and harvesting of fish and shellfish. The strategy of promoting Smart Growth policies could also maintain or improve water resources and water quality through actions taken by government and individual developers. The establishment of the Heritage Area also

assists other groups to leverage funds to acquire wetlands and riparian habitat for water quality protection, enhancement, and greenspace views, as evidenced by some of the projects approved for CIAP funding in 2007.

4.3 VEGETATION/WETLANDS

The No Action alternative would result in a continuation of current trends and practices related to vegetation and wetlands. Such action could have a medium, indirect, long-term, adverse effect on vegetation communities and wetlands.

Implementation of the Corridor-Cluster alternative could have a high, long-term, beneficial effect on vegetation communities in general and wetlands in particular through: (1) education regarding past activities that had an adverse environmental effect (e.g., clear cut logging at the turn of the century), (2) promotion of Smart Growth policies that demonstrate sustainable renewable resources harvesting and sustainable land use practices, and (3) assistance to partnering entities for conservation of unique, rare or valuable vegetation communities through purchase or easement and improvement of connectivity among existing natural conservation areas.

4.4 FISH AND WILDLIFE RESOURCES

The fate of fish and wild resources is directly tied to the extent and quality of habitat (e.g., vegetation and water quality) and to a somewhat lesser extent on limits imposed on catch and kill numbers. The No Action alternative would result in a continuation of current trends and practices related to fish and wildlife resources that could result in medium, long-term adverse effects. In some parts of the Heritage Area, development pressures have led to a decrease in habitat area and water quality and the demands for land and access to water is expected to increase in the future. The No Action alternation could have a medium to high, indirect, long-term, adverse effect on fish and wildlife resources.

Implementation of the Corridor-Cluster alternative could have a high, long-term, beneficial effect on wildlife and fisheries resources because of proposed strategy mechanisms directed towards strengthening the sense of heritage identity and conserving the area's heritage resources. For example, Mississippi has a rich heritage of seafood harvesting which is dependent on maintenance of not only high quality habitat and renewable resources, but also on shore-based support infrastructure, such as marinas, loading docks, and marketing and seafood processing establishments. Highlighting this

heritage through development of educational and promotional materials and supporting maintenance of the facilities to meet both fishermen and heritage tourist interests keeps the focus on sustaining fisheries resources. Assisting in identification of eco-tour corridors and supplemental educational materials promotes awareness of the area's diversity of wildlife, and the attraction of heritage tourists, in addition to the enhancement of local interests, puts emphasis on the need to conserve these resources for future enjoyment.

4.5 THREATENED AND ENDANGERED SPECIES

The No Action alternative would result in a continuation of current trends and practices related to threatened and endangered species. Existing environmental laws pertaining to the listing and protection of threatened and endangered species would continue in force but there would be no additional benefits that could be derived from implementation of additional opportunities to raise an awareness of the need to protect these species and their habitat. The impact of the No Action alternative would be low to medium, indirect, long-term and adverse.

The most positive aspect of the implementation of the Corridor-Cluster alternative is the ability to network entities interested in the preservation of wildlife species and their habitat, especially those on the threatened or endangered species list, and to develop educational materials and awareness of the value of saving these species and their habitat, as well as other species that may be listed in the future. The synergistic educational and conservation actions of the network of special interests (wildlife and fisheries, threatened and endangered species, wetlands and wildlife and fisheries habitat, historians, tour groups, scientists, educators, Smart Growth proponents, etc.) working under the Heritage Area umbrella can result in a high, long-term, beneficial effect for threatened and endangered species.

The USFWS concurred that while "the main goals of the Heritage Area Management Plan would involve activities that include little or no earth disturbance, such as development and dissemination of information, some activities, such as the support of acquisition and infrastructure construction by other entities with a common interest, have the potential for disturbing listed species" but that "we understand that projects will be evaluated individually over the course of this Management Plan (Chandler 2007). Information on "federally listed species that could be affected by any potential future

habitat disturbing activities" (Chandler 2007, Appendix G) was presented in Section 3.6 and incorporated into Table D.4 in Appendix D which denotes Federally listed threatened and endangered species, their Federal status and recorded locations by county the Mississippi Gulf Coast National Heritage Area.

4.6 SOCIO-ECONOMIC ENVIRONMENT

4.6.1 POPULATION AND ECONOMY

The No Action alternative would result in a continuation of current trends and practices related to the socio-economic environment. The No Action alternative could have a low, indirect, long-term adverse effect on employment opportunities, especially in the more rural portions of the National Heritage Area, because opportunities for heritage tourism related employment would not be available. Many former towns, especially those related to the lumber industry, disappeared in the late nineteenth and early twentieth centuries as the jobs disappeared. Some small areas may be losing population today as young people move to the larger metropolitan areas seeking employment.

Based on the results of implementation of Heritage Area programs in other areas, it is anticipated that the Corridor-Cluster alternative could have a low to medium, direct and indirect, long-term, beneficial impact on population and employment type and opportunities in the vicinity of Heritage Area attractions because of the strategies required for strengthening the sense of heritage identity, conserving heritage resources, and promoting and marketing the Heritage Area. A few positions may develop related to the development and dissemination of informational materials and educational/docent programs. Opportunities for restoration/repair activities related to conserving historic resources or readapting historic structures to modern uses could provide direct, short-term employment opportunities and longer-term employment opportunities related to their re-adaptive uses. The development of recreational/eco-/heritage tours could result in both additional seasonal and longer-term employment opportunities in both the highly developed coastal zone and the less developed northern portions of the Heritage Area. This latter action could aid in retaining, and possibly recruiting, young people in historically rural, undeveloped areas and enhancing their pride and awareness of additional employment/entrepreneurial opportunities. Heritage Tourism would also benefit local artists by providing

a new venue for showing and selling their products. Heritage Area related employment and business related opportunities would also add to the diversity of an area's economy, especially in more rural areas.

4.6.2 AESTHETIC AND SCENIC RESOURCES

The No Action alternative would result in a continuation of current trends and practices related to land use practices. Pressure for development, especially in sensitive coastal and riverine areas could have medium to high, direct and indirect, long-term, adverse environmental effects.

Implementation of the Corridor-Cluster alternative would have low to high, direct and indirect, short-term and long-term beneficial effects depending upon the type and location of projects and activities associated with implementation of the Heritage Area Management Plan. An increased awareness and appreciation of the benefits of preserving aesthetic and scenic resources, as part of a larger strategy to promote and market to attract heritage tourists, could aid the conservation of these resources through increased availability of heritage generated and heritage affiliated funds.

4.6.3 RECREATION RESOURCES

The No Action alternative would result in a continuation of current trends and practices related to recreation. There could be medium to high, direct and indirect, long-term and adverse environmental effects depending upon the type of recreational activity impacted. Demand for development, privatization and increase in number of private users of waterfronts could diminish the opportunities for the general public and tourists to participate in water-based recreation, such as fishing from a public pier, launching a private craft at a public launch site or accessing a public beach, waterfront, or marina. There would also be fewer venues for acquiring funds for developing greenways for recreation and educational programs designed to spread knowledge about the values and functions of natural resources in communities, such as the existing greenways in Lucedale and Hancock County that are being enhanced slowly as money becomes available.

The Corridor-Cluster alternative would have medium to high, direct and indirect, short-term and long-term beneficial effects for recreation depending upon the type and location of the recreational activity. Development or support of development of maps, tour guides, listings of types of recreational opportunities and associated amenities, directional and

interpretative signage, and educational brochures on natural flora, fauna, and habitats and marketing of recreational opportunities would facilitate exploration of the natural and scenic resource areas, which in turn would focus attention on the importance of conserving, preserving and restoring such areas for future public use. Other beneficial aspects of the Corridor-Cluster alternative could include the use of matching funds for re-adaptation of buildings within clusters for use as galleries, museums, education/interpretation centers or for development of interpretation programs and centers or support of docents to educate local inhabitants and visitors about a specific area, thereby enhancing the opportunities for recreational activities related to heritage related sightseeing, shopping, and entertainment. Leveraging of Heritage Area funds with other governmental, private and non-profit entities would help preserve and / or enhance more areas for nature trails, and public access to waterways, beaches and barrier islands for fishing and other water-oriented recreational activities. Such actions enhance the number and diversity of recreational opportunities within the Heritage Area and help secure these opportunities for the future.

4.7 CULTURAL, HISTORIC, AND ARCHAEOLOGICAL RESOURCES

The No Action alternative would result in a continuation of current trends and practices that are likely to have medium to high, direct and indirect, long-term, adverse effects on cultural, historic and archaeological resources. Without progressive, focused and funded support for research to identify and document both known and unknown resources there is a greater potential for loss from development activities and destruction or deterioration of natural areas.

The Corridor-Cluster alternative would have a high, direct and in-direct, long-term beneficial effect on the conservation of cultural, historic and archaeological resources through the raising of an awareness of the importance of these resources. Appendices A and B identify heritage resources associated with communities within the identified clusters. Heritage Area strategies for strengthening the sense of heritage identity would inspire and support documentation of history and culture through archival, document and archaeological research, interpretation, and report production; recordation of people's experiences of traditional lifeways; and development of educational materials and programs to convey this knowledge to local inhabitants, tourists, and especially young people. The Heritage Area could provide the incentive, overarching organizational network, and supplemental

funding to initiate and promote festivals celebrating traditional lifeways, folkways, arts, and culture unique to the area. The promotion and marketing of the Heritage Area would give added value and economic incentives for local private, non-profit and governmental interests to conserve the heritage related resources and support actions to strengthen heritage identity. It is anticipated that with knowledge and awareness there would be renewed respect for these resources and a desire to conserve them. Without Heritage Area programs and support for the arts (galleries, museums, music) there could be less incentive for re-adaptation and redevelopment in historic town centers. Networking heritage activities within and among cluster communities enhances the overall benefits of the program, provides a broader range of opportunities for the heritage tourists and maximizes the ability to articulate and promote the stories of the Mississippi Gulf Coast that have national importance.

The corridors identified in the Corridor-Cluster alternative are not only important links among the clusters of communities but they also have cultural, historic and archaeological resources that need further research and are worthy of interpretation. These corridors provide a means to convey the story of historic land use practices, such as lumbering, and provide access to the Heritage Area's bountiful recreational and scenic resources.

The goals of the Heritage Area are: (1) to strengthen people's sense of heritage identity, (2) to conserve the area's heritage resources, and (3) to promote and market the heritage area (MDMR-CRMP & CEI 2005). Strengthening the sense of heritage identity involves identifying, recording, and presenting to the public the components of the heritage area. Identifying heritage resources and educating the public about them should help to conserve them indirectly by making developers, policy makers, elected officials, and the general public aware of their existence and significance. Heritage resources may be conserved more directly through partnerships between the Heritage Area and conservation groups such as The Nature Conservancy or the Land Trust for the Mississippi Coastal Plain. Education and conservation efforts may also reduce the threat to archaeological sites posed by looters as more people are educated about the significance of sites and as more sites are acquired and directly protected by conservation groups. While the efforts of the Heritage Area cannot protect historic buildings and archaeological sites from destructive natural forces, the

Heritage Area can spearhead efforts to document these resources before any more are lost forever.

The Heritage Area can play a crucial role in guiding the region through the current period of unprecedented change. The Heritage Area provides the means for connecting various Federal, State, and private entities into a system of people and places that can collectively tell the story of the area. The Mississippi Gulf Coast was designated a Heritage Area because of its unique natural and cultural qualities. This official designation can now provide the organizational and monetary means to forefront these unique qualities and make sure that they are a benefit to the people of the area, in both an economic sense through heritage tourism and as a source of community identity and pride. In the absence of the Heritage Area, the factors negatively affecting heritage resources will continue or likely accelerate their destruction of the sites, buildings, landscapes, and traditions that make the Mississippi Gulf Coast unique. With the Heritage Area in place, it can play a role in guiding the changes that are occurring along the coast so that these changes enhance the area's unique natural and cultural qualities. Conservation of the area's cultural, historic and natural resources is essential for preservation of the Heritage Area's identity. While no area remains static through time, the efforts of the Heritage Area can insure that the economic growth and viability of this area is achieved by considering conservation and heritage elements in planning for new development and not obliterating all vestiges of the past.

There has been close consultation and coordination with the Mississippi Department of Archives and History (MDAH) regarding identification of heritage resources (MDAH 2002, 2005 a, b, c), documentation of the condition of historic and cultural resources post-Katrina, development of the Management Plan and identification of components of the Corridor-Cluster alternative. The Act establishing the Mississippi Gulf Coast National Heritage Area specifically designated the MDAH as a state agency with whom the MDMR was to consult on development and implementation of the Management Plan. The Deputy State Historic Preservation Officer is on the Heritage Area Oversight Commission and stated upon review of the documents that "MDAH enthusiastically endorses the primary goals and strategies for addressing cultural and historical resources, as expressed in the Management Plan for the Mississippi Gulf Coast National Heritage Area. We concur that the proposed actions will not have an adverse impact on those resources, but rather should

do much toward enhancing and preserving the resources” (P’Pool 2008, Appendix G).

4.8 AIR QUALITY

The No Action alternative would result in a continuation of current trends and practices that could be expected to have low, direct, long-term adverse effects on air quality related to development and continuance of existing transportation practices and reliance on existing types of fuel. Mississippi is currently meeting all of the standards for air quality as set forth by the EPA.

The Corridor-Cluster alternative could have a medium, indirect, long-term beneficial effect on air quality through the support and awareness of Smart Growth policies that emphasize development of walking neighborhoods and more reliance on public transportation. These practices would benefit both old neighborhoods being rebuilt after the destruction caused by Hurricane Katrina and newer communities developing in the vicinity of major highway interchanges along the coast.

4.9 NOISE

The No Action alternative would result in a continuation of current trends and practices related to noise and could result in medium, direct, short-term and long-term adverse effects in areas experiencing high rates of development and expansion of the area and level of transportation facilities and services.

The Corridor-Cluster alternative could also have a low to medium, direct, short-term and long-term adverse effect on noise in some areas depending upon the type of activity. Increased levels of tourism, especially activities requiring motorized boats or airboats, have the potential to increase noise levels along waterways and marshland. Promotion of Smart Growth development, including neighborhoods and recreational areas that facilitate walking and bicycling, and public transportation could decrease the rate of increase in traffic noise that is expected to occur with continued growth of development and transportation corridors, especially along the lower Gulf Coast.

4.10 HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE

The No Action alternative would result in a continuation of current trends and practices related to hazardous, toxic and

radioactive waste with the potential for low, indirect, long-term, adverse effects resulting from lack of incentives or means to clean up existing sites.

The Corridor-Cluster alternative could potentially have medium to high, direct, long-term beneficial effects should clean-up of hazardous waste sites be inspired or supported through development or re-adaptive use as a result of interest and/or funding generated through the Heritage Area Management Plan implementation.

4.11 ENERGY REQUIREMENTS AND CONSERVATION

The No Action alternative would result in a continuation of current trends and practices regarding energy consumption and would not result in conservation of energy resources.

The Corridor-Cluster alternative could increase energy requirements, especially with regard to fuel consumption, if there is a substantial increase in heritage tourism involving more driving of personal vehicles, and motorized vessels for tours. Conversely, Smart Growth principles being championed by the Heritage Area could reduce energy requirements and result in overall energy conservation, if various “green measures” are undertaken, such as concentrating residential-business-commercial in walkable neighborhoods, encouraging planting of shade trees in business and commercial as well as residential areas, developing more biking and walking connections, and promoting the development and use of public transportation. The Heritage Area could also promote and provide information on energy conservation and energy alternatives as part of educational programs.

4.12 NATURAL OR DEPLETABLE RESOURCES

The No Action alternative would result in a continuation of current trends and practices regarding natural and depletable resources.

The Corridor-Cluster alternative includes more educational components regarding environmental awareness designed to foster sustainable harvesting of natural resources and protection of the environmental quality needed to support these resources. Two major stories or themes being developed that help define the Mississippi Gulf Coast National Heritage Area and illustrate this concept are the total extraction of the long leaf pine forests and the intense

harvesting of seafood around the turn of the century. In both cases intense extraction lead to a rapid growth in communities, affiliated businesses, professions specialized in extracting resources beyond the point of sustainability, and great wealth for some individuals. Adjustments had to be made as the resources diminished or disappeared, that resulted in environmental degradation and human suffering.

4.13 CUMULATIVE IMPACTS

No issues were raised during this planning effort that indicated any potential for conflict and / or adverse cumulative impacts associated with the Corridor-Cluster alternative in particular, or management of the Heritage Area in general, with reference to ongoing programs and activities.

Within the six-county Heritage Area there are numerous agencies, non-profit / volunteer organizations and programs focused on enhancing awareness of and respect for the natural and cultural resources; marketing these resources for tourism derived benefits and preserving and conserving a broad spectrum of natural and cultural resources. The following are representative examples of these types of actions that were evaluated with regard to identifying potential cumulative impacts on the natural and human environments:

Natural Environment

MS Department of Marine Resources:

- Comprehensive Resource Management Plan: Plan and sustain Mississippi's coastal resources and provide for a healthy economy in the coastal area.
- Mississippi Coastal Reserve Program: Initiated in 1992 for acquisition, protection, management of coastal wetland habitats; conservation of marine interests of state; implementation of management strategies, conducting monitoring and education outreach programs.
- Tidelands Trust Fund Program: Funds derived from lease of state water bottoms and applied as match to Federal funds to purchase lands for conservation and for rebuilding of coastal infrastructure.
- Coastal Impact Assistance Program: Federal funds derived from offshore oil and gas royalties used by coastal states for variety of uses including land acquisition, wetlands restoration, construction of

infrastructure, education outreach programs, etc. Some of these funds are being applied toward projects that directly facilitate Heritage Area Management Plan goals and strategies. (See Appendix F for summary list of projects, applicants, descriptions, costs and locations).

- Coastal Wetland Impact Database Enhancement: Develop two dynamic and effective databases: a) historical aerial photograph digital database for change analysis and b) web-enabled, SQL based GIS specific wetland impact database for use in regulatory compliance. Qualifies for assistance from CIAP because area is within the Heritage Area.
- Documenting and Conserving Heritage Resources of Mississippi Gulf Coast: Create GIS database of known and potential heritage resources to facilitate Heritage Area conservation efforts. Qualifies for assistance from CIAP because area is within the Heritage Area.
- Sustainable Development & Smart Growth Management Initiative in Six Coastal Counties of Mississippi: Create comprehensive program designed to incorporate principles of sustainability and smart growth into day-to-day and public and private development activities that occur in Mississippi Gulf Coast Region. Qualifies for assistance from CIAP because area is within the Heritage Area.

Institute for Compatible Development - Dick and Dianne Scruggs Nature and Educational Center, Moss Point:

- Annual Wild Wing River and Nature Festival: One of sponsors of festival designed to educate the public about value of Pascagoula River watershed and surrounding area, create appreciation of wildlife and enhance local economy by bringing in eco-tourists.
- Received funding from Heritage Area for 2007 Annual Wild Wing River and Nature Festival promoting eco-tourism.

Land Trust for Mississippi Coastal Plain: Non-profit organization for purchase of easements and property for preservation, conservation, education and recreation.

- Replanting of native trees on public lands to replace trees destroyed by Hurricane Katrina. Received funding from Heritage Area in 2007 for acquisition of

properties to be used for green space, recreation, environmental quality enhancement and public access.

- Moss Point EcoTourism Waterfront Development Project and Conservation Lands Acquisition (14 ac) at Old Fort Bayou Preserve. Acquire and manage land in Pascagoula watershed for conservation, education, recreation and water quality enhancement. Qualifies for assistance from CIAP because area is within the Heritage Area.

City of Gautier:

- Coastal Land Conservation: Acquire deed ownership of ~100 acres of islands in Point Clear area of Gautier, create conservation plan and restore natural functions. Qualifies for assistance from CIAP because area is within the Heritage Area.

Mississippi Gulf Coast Audubon Birding Center, Pascagoula: Development of nature trail and educational outreach program.

- Received assistance from Heritage Area Program in 2007 for promotion of birding, ecotourism, and environmental education.

MS Coastal Birding Trail – Power of Flight Program: Sponsored by National Fish and Wildlife Foundation, MS Power Co. and Southern Co.

- Mississippi Coastal Birding Trail: Extends through Heritage Area. Organization developed map and bird list and is seeking community involvement to enhance trail.

Wolf River Conservation Society / Fund: Non-profit organization established to conserve and protect terrestrial and riverine habitats along designated Scenic Wolf River and promote recreational and educational opportunities.

- Received assistance from Heritage Area in 2007 for acquisition of properties adjacent to Wolf River for natural resource conservation and water quality protection.
- Conservation Lands Acquisition for restoration, management and public use: 76-ac Pulitzer property and 140-ac Allison property. Acquisition projects qualify for assistance from CIAP because area is within the Heritage Area.

The Conservation Fund: Non-profit organization dedicated to acquisition of property for conservation.

- Cat Island Acquisition Project: Acquire and permanently protect portions of Cat Island that are privately held in order to transfer to Gulf Coast Barrier Islands National Seashore. Qualifies for assistance from CIAP because area is within the Heritage Area.

The Crosby Arboretum Foundation: Provides for conservation and restoration of pine savannah habitat, education, and recreation.

- The Crosby Arboretum Education Center Project: Part of Crosby Arboretum's Master Plan and involves construction of multi-purpose education center for meetings, research facilities, library and educational programs. Qualifies for assistance from CIAP because area is within the Heritage Area.

Gulf of Mexico Alliance: Program aimed at conservation efforts. Received assistance from Heritage Area in 2007 for development and planning for ecosystem restoration and conservation on a Gulf-wide basis.

University of Southern Mississippi:

- New Beginnings Marine Education Center at Cedar Point. New facility being built to replace J. L. Scott Marine Education Center and Aquarium destroyed by Hurricane Katrina. Facilities for research, teaching, educational programs, libraries and laboratories designed to educate regarding interconnectedness of all species and fragility of watery planet. Qualifies for assistance from CIAP because area is within the Heritage Area.

Mississippi Gulf Coast Community College, Jackson County:

- Native Vegetation & Estuarine Plant Nursery Addition to Pascagoula River Basin Estuarine Education Center. Establish greenhouse nursery and provide training for successful management of coastal natural resources and environment. Qualifies for assistance from CIAP because area is within the Heritage Area.

Mississippi State University Georesources Institute:

- Infinity Center Project, Stennis Space Center at I-10 Exit: Mississippi's first comprehensive science

center and world class facility to educate and expose public to space, marine and earth sciences and local natural and cultural heritage. Would have educational display for Possum Walk. Qualifies for assistance from CIAP because area is within the Heritage Area.

Harrison County Board of Supervisors:

- Turkey Creek Watershed Land Acquisition: Acquire 1000 ft of wetlands & sensitive riparian habitat adjacent to Turkey Creek for protection, restoration and management of sensitive ecological areas. Qualifies for assistance from CIAP because area is within the Heritage Area.

Gulfport-Biloxi Regional Airport Authority:

- Gulfport-Biloxi International Airport Turkey Creek Watershed Protection Project: Implementation of projects to mitigate damage to fish, wildlife or other environmental resources due to airport activities. Qualifies for assistance from CIAP because area is within the Heritage Area.

Mississippi State University

- Deer Island Tree Planting and Master Plan Development for restoration of island. Qualifies for assistance from CIAP because area is within the Heritage Area.

Human Environment

MS Department of Archives and History:

- Community Heritage Preservation Grant Program. Funds allocated by the MS Legislature for use in preservation and restoration of historic courthouses and schools, and in Certified Local Government Communities, for other historic properties.
- MS Archaeological Research Grant Program: Funds for research and archaeological investigations aimed at recording and preserving the history of Mississippi.
- Hurricane Relief Grant Program: \$26 million in Federal funds for restoration of historic properties damaged by Hurricanes Katrina and Rita; first preference going to MS Gulf Coast National Heritage Area.

- Certified Local Government Programs: Federal, state, local government partnership to provide funding and technical assistance from National Historic Preservation Fund to communities dealing with diverse historic preservation needs.

Mississippi Main Street Association: Provides assistance to communities for downtown revitalization. At present, five cities in the Heritage Area are part of the program and have consulted on the Heritage Area Program: Biloxi, Gulfport, Ocean Springs, Pascagoula, and Picayune.

Chamber of Commerce / Cities in Heritage Area: Promotion of tourism, enhancement of awareness of community history, art and culture:

- Biloxi: Assistance from Heritage Area for: Annual Blessing of the Fleet (2006, 2007), Annual 4th of July Celebration (2006, 2007), Memorial Festival on The Green Celebration of Founding of City (2005, 2006).
- Ocean Springs: Walter Anderson Arts Festival: Assistance from Heritage Area (2005, 2006).

Ohr-O'Keefe Museum of Art:

- Ohr-O'Keefe Museum of Art Mississippi Sound Welcome Center: Use \$3.7 million government funded Mississippi State Welcome Center as site for development of Information and Interpretative Center to disseminate information and educate visitors on Heritage Area and its resources. Qualifies for assistance from CIAP because area is within the Heritage Area.

Lynn Meadows Discovery Center, City of Gulfport:

- On the Green Project: Acquisition of land for viewshed and green space for conservation and education. Qualifies for assistance from CIAP because area is within the Heritage Area.

Maritime & Seafood Industry Museum:

- Schooner Pier Complex: Enhance existing facility to serve general public for recreational activities; install interpretative signage on pier to educate public regarding conservation, marine life, and history and culture of surrounding areas; restore and protect sand beach and maritime forest with sand dunes planted with sea oats and facilitate birding activities. Qualifies for assistance from CIAP because area is within the Heritage Area.

City of Biloxi:

- Biloxi Lighthouse Landing Complex: Design and construct visitor and community services center north of Biloxi Lighthouse, a Mississippi Landmark and National Register Site, to promote cultural heritage and recreational resources of the area.
- Biloxi Lighthouse Viewshed Land Acquisition: Land acquisition for lighthouse viewshed to preserve unobstructed views of lighthouse and sand beach. Both projects qualify for assistance from CIAP because area is within the Heritage Area.

City of Gulfport:

- Renewal of Joseph T. Jones Park Educational Pavilion Projects: Develop interpretative and information center related to Mississippi Sound and Outer Continental Shelf heritage resources; develop public boat launch for access to and enhancement of awareness of historic and scenic areas of Mississippi Sound; create educational boardwalk with educational stations on marine environment, commerce, recreation and heritage. Qualifies for assistance from CIAP because area is within the Heritage Area.
- Renewal of Joseph T. Jones Park and Educational Boardwalk: Construct 2062 ft by 20 ft concrete boardwalk along Gulfport Harbor perimeter to connect retail areas with education stations regarding marine environment, marine commerce and recreation and interpret themes of Heritage Area, especially the Gulfport cluster and connected corridors. Qualifies for assistance from CIAP because area is within the Heritage Area.
- Renewal of Joseph T. Jones Park to Increase Public Access to Historical Jones Park, Fort Massachusetts, Ship Island and Cat Island: Construct public boat launch facility, including parking, lighting, utilities, landscaping, dredging and bulkheading, to: a) facilitate public access to Gulf of Mexico / Mississippi Sound recreational and historical resources, b) support tourism, and c) increase awareness of importance of conservation to protect natural and historic resources and heritage. Qualifies for assistance from CIAP because area is within the Heritage Area.

City of Moss Point:

- Working Waterfront Projects # 1 and # 3: Acquisition of properties along waterfront for preservation, conservation and protection and redevelopment for public use using Smart Growth principals. Qualifies for assistance from CIAP because area is within the Heritage Area.

City of Pascagoula:

- The Point Acquisition Project: Acquisition of lot adjacent to The Point Park, construction of public boat launch and park area, and restoration of native plants for stabilization of shoreline. Qualifies for assistance from CIAP because area is within the Heritage Area.

City of Lucedale:

- Lucedale Depot Greenway and Green Space Program: Acquisition of property for conservation of wildlife habitat, water quality enhancement, environmental education and recreation. Additional 34.44-ac property purchase qualifies for assistance from CIAP because area is within the Heritage Area.

City of Pass Christian:

- Pass Christian Harbor Expansion: Double size of existing small craft harbor, primarily for recreational purposes, and promote heritage resources of area by providing catalyst to promote tourism and economic development in community. Qualifies for assistance from CIAP because area is within the Heritage Area.

City of Long Beach:

- Long Beach Harbor Expansion: Double size of existing harbor and promote water oriented recreational opportunities in environmentally sound way through responsible marina and boating practices. Qualifies for assistance from CIAP because area is within the Heritage Area.

City of D'Iberville:

- D'Iberville Municipal Marina Improvements: Expand city's only public marina on Back Bay dedicated to perpetual public access and marine recreation.

Qualifies for assistance from CIAP because area is within the Heritage Area.

- Tchouticabouffa River Park & Preserve: Acquire ~20 ac undeveloped private property along riverfront to create municipal park and nature area for recreation, education and conservation. Qualifies for assistance from CIAP because area is within the Heritage Area.

Hancock County Greenways Plan, Hancock Board of Supervisors:

- Possum Walk Environmental and Historical Trail Linking NASA's Infinity to the Past. Construction of 5-mi primitive trail showcasing unique historical and ecological area and development of Interpretative Center for trail at NASA's Infinity Center at the I-10 state welcome information center.
 - Pearlington and Cedar Point Boat Launch Enhancements: Promote recreational opportunities along waterfront and water ways; linkage between landside paths and trails and freshwater and brackish water trails.
 - Sustainable Comfort Nodes: On beach pathway connecting five waterfront public boat launches (Cedar Point Boat Launch, Washington St Pier, Garfield Ladner Pier, Clermont Harbor Pier, Bayou Caddy) for recreation.
 - Continuation of Hancock Co. Beach Pathway: Improve public access to waterfront.
- All four projects, which are part of comprehensive county Greenway Plan, qualify for assistance from CIAP because the area is within the Heritage Area.

Pearl River County Department of Planning:

- Pearl River County Steep Hollow History Museum: County Board of Supervisors, with assistance from Land Trust for Mississippi Coastal Plain, will establish private, non-profit educational foundation to own and operate history museum and adjacent meeting facility and community center (formerly Steep Hollow Baptist Church) and create restoration, management and public use plans for facility. Would serve as interpretative center for Shaw Cabin and Farm (7 mi away) that is being restored and operated as rural life museum by Land Trust for Mississippi Coastal Plain. Qualifies for assistance from CIAP because area is within the Heritage Area.

George County Board of Supervisors:

- Pascagoula River Ecotourism and Education Trials: Provide public access to water and lands of Pascagoula River and address issues to restore, protect and enhance ecology of river. Qualifies for assistance from CIAP because area is within the Heritage Area.

Stone County Board of Supervisors:

- Old Wire Road Trail Project Corridor: Conduct research, survey route and construct corridor, with interpretative signage, for biking and walking that preserves historical, archaeological and natural resources, promotes preservation of natural resources, strengthens sense of heritage and connects communities along the trail. Qualifies for assistance from CIAP because area is within the Heritage Area.

The 39 CIAP projects described above and in Appendix F represent a total funding request of \$36.3 million and are a profound illustration of how an overarching Heritage Area Management Plan, implemented through the comprehensive Corridor-Cluster alternative can facilitate achievement of the Heritage Area goals through partnering and leveraging of resources by a multitude of individual entities operating independently from the Heritage Area's coordinating entity. The CIAP grants would assist in the implementation of a wide range of Management Plan strategies that only qualify for CIAP funding because they are within the designated Mississippi Gulf Coast National Heritage for which a Management Plan and Environmental Assessment have been prepared. These CIAP projects proposed for implementation by 25 different entities drawn from government and non-profit organizations would adhere to NEPA compliance (e.g., individual Environmental Assessment) under the oversight of the Minerals Management Service, the lead federal agency and funding source. However, these projects represent examples of the extensive range of Heritage Area management strategies that are envisioned for identification, conservation and promotion of the natural and cultural resources within the Heritage Area under the Corridor-Cluster alternative. All of the projects and programs described above also illustrate the various types of mechanisms for partnering and leveraging of funds to implement Heritage Area related projects under the guidance of the Management Plan blueprint using goal related strategies:

- Database development and Heritage Area interpretation
- Dissemination of a variety of materials to enhance knowledge of Heritage Area and means to protect the environment
- Development of interpretative — information centers, displays, trails, signage and programs in various locations throughout the Heritage Area to convey information about and promote appreciation of heritage related resources
- Re-adaptive use of historic buildings and properties of historic and cultural importance
- Acquisition of property to protect historically important or distinctively scenic viewsheds
- Maintenance of working heritage-related landscapes
- Archival and field research projects to uncover and document history and land use
- Assistance in development of new Mississippi State Visitors Center to be used in support of Heritage Area
- Securing of greenspaces and migratory bird corridors for public enjoyment and wildlife uses
- Enhancement of public recreational areas along beachfronts
- Facilitation of public access to natural resource areas, especially waterways, through development and / or enhancement of public boat ramps and marinas
- Support for development of management and restoration plans for conservation lands
- Assistance for research and development of methodologies and plant materials for restoration of coastal wetlands.

4.13.1 NO ACTION ALTERNATIVE

The No Action alternative is a continuation of the status quo. In the absence of an approved Management Plan and Environmental Assessment at least 39 CIAP projects, totaling a funding request of \$36.3 million, and planned specifically to achieve Heritage Area goals would not be implemented, thereby seriously hindering efforts to conserve and showcase the Heritage Area's historical, cultural, and archaeological resources and natural, scenic and recreational resources. Other programs and projects not tied to CIAP funding could have cumulative beneficial environmental effects under the No

Action alternative, but these benefits would be lower than under the Corridor-Cluster alternative because of their limited and often isolated extent.

- **Geology:** Low, direct, long-term beneficial effects associated with government (Mississippi Coastal Reserve Program, Tidelands Trust Fund Program, Gulf of Mexico Alliance) and non-profit actions (Land Trust for Mississippi Coastal Plain) to conserve and restore geological and geomorphological features including wetlands and barrier islands.
- **Water Resources:** Low, direct and indirect, long-term beneficial effects associated with improvement in water quality in areas where riparian lands and wetlands are conserved to prevent erosion and improve uptake of nutrients from land runoff. Improvement in water quality would result from awareness instilled through educational programs and tools available to improve water quality. These actions would be undertaken by the Mississippi Coastal Reserve Program and the Mississippi Department of Marine Resources-Coastal Resource Management Plan.
- **Vegetation and Wetlands:** Low, direct, short-term and long-term beneficial results related to programs that conserve vegetation habitats through acquisition, management and restoration as well as promotion of public education regarding the function and value of individual vegetative habitats and wetlands. The actions would be undertaken by the Tidelands Trust Fund Program, Mississippi Coastal Reserve Program, The Land Trust for the Mississippi Coastal Plain, The Wolf River Conservation Society, The Conservation Fund, The Crosby Arboretum Foundation and the Gulf of Mexico Alliance.
- **Wildlife and Fisheries:** Low, short-term and long-term beneficial effects associated with conservation of habitat and environmental quality to benefit wildlife and fisheries, including acquisition and management of habitat; adherence to Smart Growth policies related to sustainable development; and education related to species value and conservation measures. Such activities would be undertaken by the Mississippi Coastal Reserve Program, Tidelands Trust Fund Program, Institute for Compatible

Development-Dick and Dianne Scruggs Nature and Educational Center, Mississippi Gulf Coast Audubon Birding Center, Mississippi Coastal Birding Trail, and The Conservation Fund.

- **Threatened and Endangered Species:** Low, indirect, short-term beneficial effects related to conservation of habitats and increased educational awareness of the value of these species under existing programs such as Mississippi Gulf Coast Audubon Birding Center, Mississippi Coastal Birding Trail, and The Crosby Arboretum Foundation.
- **Cultural, Historical and Archaeological Resources:** Low, direct, long-term beneficial effects related to enhancement of knowledge of archaeological, historical and cultural resources through funding and support for archival, oral history and field investigations; enhancement of appreciation for and value of preserving heritage resources through educational programs and programs that support re-adaptive uses that generate sustaining income. Existing programs supporting these activities include: Community Heritage Preservation Grant Program, Mississippi Archaeological Research Grant Program, Certified Local Government Programs and Mississippi Main Street Association programs, the Ohr-O'Keefe Museum of Art, and City / Chamber of Commerce sponsored cultural festivals.
- **Socio-economic Conditions:** Low, direct and indirect, short-term and long-term beneficial effects related to existing heritage and ecological tourism related programs and activities (Comprehensive Resource Management Plan, Mississippi Coastal Birding Trail, The Wolf River Conservation Society, Mississippi Main Street Association, and Annual Wild Wing River and Nature Festival).
- **Aesthetics and Scenic Resources:** Low, direct and indirect, short-term and long-term beneficial effects related to acquisition, preservation, and restoration of scenic and natural resources, including barrier islands and stream banks, under existing programs (Tidelands Trust Fund, The Land Trust for the Mississippi Coastal Plain, Mississippi Gulf Coast Audubon Birding Center, The Wolf River Conservation Society).

- **Recreation Resources:** Low, direct and indirect, short-term and long-term beneficial effects related to acquisition, preservation and enhancement of publicly accessible lands under existing environmental and greenway programs (City of Lucedale, Hancock County Board of Supervisors, Mississippi Gulf Coast Audubon Birding Center, Mississippi Coastal Birding Trail, The Wolf River Conservation Society, The Land Trust for the Mississippi Coastal Plain, and The Crosby Arboretum Foundation).
- **Air Quality:** No cumulative impacts are anticipated for the No Action alternative.
- **Noise:** No cumulative impacts are anticipated for the No Action alternative.
- **Hazardous, Toxic and Radioactive Wastes:** No cumulative impacts are anticipated for the No Action alternative.

4.13.2 CORRIDOR-CLUSTER ALTERNATIVE

The Corridor-Cluster alternative, when implemented in conjunction with existing and on-going programs and activities in the Heritage Area, would result in an overall, long-term beneficial cumulative impact with regard to heritage resources and to the natural and human environment. This alternative has three specific goals and associated, well-defined strategies designed to raise awareness and support and to provide a mechanism for sustaining Heritage Area related natural and human resources. Development of both a sense of place and pride in place intuitively encourages people to be good stewards of that place. As good stewards, there is an emphasis on sustainable use and conservation of the heritage resources that shaped and defined that heritage identity. Promotion and marketing of the Heritage Area in turn helps infuse the economic resources and sustain the incentives to be good stewards and conserve the resources. The Corridor-Cluster alternative would benefit from many of the current on-going and proposed actions (i.e., CIAP projects) as a result of partnering efforts that could include funding; sharing of resources, facilities, institutional knowledge and expertise; and promotion of awareness of areas of common interest and concern.

The general overall types of cumulative environmental effects of implementation of the Corridor-Cluster alternative, in conjunction with ongoing and proposed programs and actions, include the following:

- **Geology:** Low to medium, direct, long term beneficial effects associated with conservation and restoration of portions of the coastal plain and riverine environments, including wetlands and barrier islands, and an increase in environmental awareness of the need to conserve these geological / geomorphological features and affiliated functions.
- **Water Resources:** Medium, direct and indirect, long-term beneficial effects related to improvement in water quality in areas where riparian lands and wetlands are conserved and/or restored to prevent erosion and improve uptake of nutrients from land runoff. Improvement in water quality as a result of public awareness instilled through educational programs and tools available for improving water quality.
- **Vegetation and Wetlands:** High, direct, long-term beneficial effects related to efforts to conserve vegetation habitats through acquisition, management and restoration as well as promotion of public education regarding the function and value of individual vegetative habitats and wetlands.
- **Wildlife and Fisheries:** High, direct, long-term beneficial effects associated with projects designed to conserve habitats and environmental quality to benefit wildlife and fisheries, including acquisition and management of habitat; adherence to Smart Growth polices related to sustainable development and environmental conservation; and education related to species value and conservation measures.
- **Threatened and Endangered Species:** Medium, direct, long-term beneficial effects related to conservation of habitats and increased educational awareness of the value of these species.
- **Cultural, Historical and Archaeological Resources:** High, direct and indirect, long-term beneficial effects associated with enhancement of knowledge of archaeological, historical and cultural resources through funding and support for archival, oral history and field investigations; enhancement of appreciation for and value of preserving heritage resources through educational programs and programs that support re-adaptive uses that generate sustaining income. Enhancement of ability to preserve significant structures and landscapes through acquisition of and leveraging of funds.
- **Socio-economic Conditions:** Low to medium, direct and indirect, long-term benefits associated with enhancement in diversity, availability, quality of experience, and economic benefits related to more extensive heritage and ecological related tourism opportunities. Increase in employment opportunities and economic benefits associated with development, and associated personnel needs, of new or expanded heritage sites and tours, eco-tours, educational programs; and construction, landscaping and servicing of facilities restored or re-adapted using Heritage Area affiliated funds.
- **Aesthetics and Scenic Resources:** Low to high, direct and indirect, short-term and long-term beneficial effects related to acquisition, preservation, and restoration of scenic and natural resources, including barrier islands, stream banks and working waterfronts.
- **Recreation Resources:** Medium to high, direct and indirect, short-term and long-term beneficial effects related to acquisition, preservation and enhancement of public parks and trails, boat launches, marinas, beach pathways, museums and educational centers.
- **Air Quality:** Low to medium, indirect, long-term beneficial effects where Heritage Area programs and Smart Growth policies facilitate walking, biking and public transportation use over individual automobile use.
- **Noise:** Low, direct, short-term adverse effects at localized sites experiencing more human activity because of Heritage Area programs (airboat and motorboat eco-tours). Low, direct, short-term beneficial effects would occur in areas where

Heritage Area projects promote walking, biking, and use of public transportation as opposed to private automobiles.

- Hazardous, Toxic and Radioactive Wastes: Medium to high, direct, long-term beneficial effects related to clean up of hazardous sites as part of Main Street Programs, adaptive re-use of abandoned sites and construction of public recreation facilities along waterfronts that may have environmental concerns.

4.14 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

The Corridor-Cluster alternative would involve minimal to no irreversible and irretrievable commitment of resources directly attributable to management of the Heritage Area. There would be no acquisition of resources or construction of infrastructure under direct ownership of the Heritage Area's local coordinating entity. Acquisition and construction undertaken by entities using federal funding available through the Heritage Area Program would be undertaken by individual entities and would require regulatory compliance, including appropriate mitigation measures.

4.15 UNAVOIDABLE ADVERSE ENVIRONMENTAL EFFECTS

Given the conceptual level of the Corridor-Cluster alternative no specific unavoidable adverse environmental effects are identifiable at this stage of the Heritage Area Management Plan. Through regulatory compliance, it is anticipated that any adverse impacts that may accompany a particular action could be mitigated in accordance with NEPA protocol.

4.16 LOCAL SHORT-TERM USES AND MAINTENANCE/ENHANCEMENT OF LONG-TERM PRODUCTIVITY

The premise behind designation of the Heritage Area is the maintenance and enhancement of the area's long-term productivity, in the broadest possible sense. The Heritage Area Management Plan involves the implementation of strategies to strengthen the sense of heritage identity; to

conserve the area's resources, and to promote and market the Heritage Area.

4.17 COMPLIANCE WITH ENVIRONMENTAL REQUIREMENTS

There are numerous other Federal regulatory compliance measures that may be required depending upon the type of action being undertaken as part of implementation of the Management Plan for the Mississippi Gulf Coast National Heritage Area. Specific projects, such as those being implemented with Federal funding under the CIAP, must also prepare Environmental Assessments, unless the actions qualify as categorical exclusions. Examples of regulatory compliance requirements, grouped by category of concern, include the following:

Historic, Cultural, and Archaeological Resources

- Section 106 of the National Historic Preservation Act (16 U.S.C. Sec 470 et seq.)
- Historic Sites Act (1935)
- Archaeological and Historic Preservation Act (1974)
- Archaeological Resources Protection Act (1979)
- Abandoned Shipwreck Act (1987)
- Native American Graves Protection and Reparation Act (Public Law 101-601) (1960)
- Antiquities Law of Mississippi (Chapter 7 of Sec. 39 of Mississippi Code of 1972)

General Environmental

- Clean Water Act, Section 401, 402, 404 (33 U.S.C. Sec. 1251 et seq.)
 - *Section 320*
 - *Section 401*
 - *Section 402*
 - *Section 404*
- Clean Air Act, (42 U.S.C. Sec. 7401 et seq.)
- Rivers and Harbors Act (43 U.S.C. Sec. 403)
 - *Section 10*

Wetland and Coastal

- Coastal Zone Management Act (16 U.S.C. Sec. 1451 et seq.)
- Coastal Barrier Resources Act (16 U.S.C. sec. 3501 et seq.)
- Wetlands E.O. 11990

Social Concerns

- Environmental Justice: E.O. 12898
- Consultation and Coordination with Indian Tribal Governments: E.O. 12898
- Flood Plains E.O. 11988

Plants and Animals

- Endangered Species Act (16 U.S.C. Sec. 1531 *et seq.*)
- Sec 7
- Fishing Conservation and Management Act (16 U.S.C. Sec. 1801 *et seq.*)
- Magnuson-Stevens Fishery Conservation and Management Act, Amended by Sustainable Fisheries Act of 1996 (Public Law 104-297)
- EFH Consultation
- Marine Mammal Protection Act (16 U.S.C. Sec. 1361 *et seq.*)
- Coral Reef Protection E.O. 13089
- Invasive Species E.O. 13112
- Migratory Birds E.O. 13186

Hazardous Materials

- Resource Conservation and Recovery Act (42 U.S.C. Sec. 6901 *et seq.*)
- Comprehensive Environmental Response, Compensation and Liability Act (42 U.S.C. Sec. 6901 *et seq.*)

5.0 ENVIRONMENTAL COMMITMENTS

Development and implementation of the Heritage Area and associated Management Plan components are in the initial phases. No commitments, such as interagency agreements or memorandum of agreement (MOA), have been prepared at this time.

6.0 LIST OF PREPARERS

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7.0 COORDINATION

Preparation of the Environmental Assessment for the Mississippi Gulf Coast National Heritage Management Plan is the latest stage in an ongoing public process to protect the natural and human environment of the Mississippi Gulf Coast while allowing for sustainable development. Starting in the mid-1990s, the MDMR-CRMP initiated a comprehensive resource management planning effort involving eleven Federal agencies, eleven State agencies, twenty-six local and county government agencies, one tribal government, twenty-two private and corporate entities that resulted in creation of a Comprehensive Resource Management Plan (CRMP) endorsed by planning participants (Appendix E.)

Seeking designation of the six-county area as a Mississippi Gulf Coast National Heritage Area was a logical outgrowth of the publicly oriented planning and decision making process initiated under the previous comprehensive resource management planning effort and was actively endorsed by local and county governing agencies, State and Federal congressional delegates and numerous conservation agencies and stakeholders (Appendix E). The MDMR-CRMP holds CRMP meetings approximately every two months in Biloxi to inform the public, government agencies, and other interested parties

regarding issues and actions occurring in coastal Mississippi. These meetings, which are publicized through emails, the MDMR newsletter and local newspapers (*The Sun Herald, Bay Press*) served as a forum to disseminate information and solicit input about the Mississippi Gulf Coast National Heritage Area designation, Management Plan development and Environmental Assessment. The CRMP meetings were held in February, April, August and December in 2005, in February, April, August, October and December in 2006 and in February, April, August, and October 2007.

The comprehensive resource management planning concept has been promoted during the annual Smart Growth conferences organized by MDMR-CRMP in Biloxi since the year 2000. With initiation of the effort in 2003 to have six counties in the Mississippi Gulf Coast declared a National Heritage Area, the MDMR-CRMP has also used the Smart Growth conferences as forums to publicize and establish partnerships for planning within the Heritage Area and implementation of the Heritage Area Management Plan. The *Sun Herald* (May 11, 2006:A-11), reporting on the panel discussion relating to National Heritage Areas in general and the Mississippi Gulf Coast National Heritage Area in particular at the 7th Annual Smart Growth Conference, noted that “A spirited discussion erupted around the role of community stories, places and heritage as a tool in tourism and development.” *The Journal of South Mississippi Business* (2006) also reported on coverage of the Mississippi Gulf Coast National Heritage Management Plan at the 7th Annual Smart Growth Conference by noting that “...South Mississippi’s designation as a National Heritage Area is integral to smart growth planning” and that “...a series of workshops during the second day focused on examples of smart growth principles used in other cities and on the value of historic preservation.”

Several of the sessions at the 8th Annual Conference in May 2007 pertained specifically to goals and strategies identified in the Heritage Area Management Plan: 1) “Main Street Programs and Our Sense of Place: Let’s Talk, Do We Want to Look like Everywhere Else?”, 2) “Bike Paths, Walking Paths and Green Space Conserving Natural Resources While Caring for Our Health”, 3) “Data and Technology Integration: Looking to the Past and Planning for the Future on a Regional Basis”, and 4) “The Economic Impact of Heritage Tourism Spending: Combining Economics and Historic Preservation for the Region—Choosing to Explore, Engage and Experience the Best of Southern Shores” (MDMR-CRMP 2007). During the

Smart Growth conferences, the MDMR-CRMP staff provided information and solicited input on both the Management Plan and the Environmental Assessment.

During development of the Heritage Area Management Plan, beginning in 2005, and the Environmental Assessment in 2007, the MDMR-CRMP presented information at the CRMP meetings on the status of the Mississippi Gulf Coast National Heritage Area, development of the Management Plan and Environmental Assessment and solicited input. Approximately 500 copies of the Management Plan have been distributed at the CRMP meetings, Smart Growth Conferences, and meetings of the Mississippi Gulf Coast National Heritage Area Commission, and mailed or hand-delivered to regulatory or other government agencies, Mississippi delegates to the U.S. Congress and Gulf Coast delegates to the Mississippi Legislature, with request for review and comment.

Copies of the draft Environmental Assessment (June 2007) were delivered to several government agencies (U.S. Army Corps of Engineers, Mobile District; U.S. Environmental Protection Agency, Region 4; U.S. Department of Commerce — NOAA/Coastal Zone Management and Coastal Services Center; USFWS; U.S. Department of the Interior - Office of the Secretary, National Heritage Director, Southeast Regional Office/Park and Community Partnership Division, Minerals Management Service) for review and comment. Copies were also provided to some of the initial participants in the designation and development of the Mississippi Gulf Coast National Heritage Area (Mississippi Department of Marine Resources; Mississippi Gulf Coast National Heritage Area Commission members; Mississippi Department of Archives and History, State Historic Preservation Officer; Mississippi delegates to the United States Congress; and the Mississippi Gulf Coast delegates to the Mississippi Legislature) (See Appendix E for names of individual Commission members and delegates who received documents). Comments on the June 2007 draft Environmental Assessment were received from the USFWS (Chandler 2007, Appendix G) and incorporated into the Environmental Assessment.

With designation of the Mississippi Gulf Coast National Heritage Area in 2004, a 32-member Mississippi Gulf Coast National Heritage Area Commission, consisting of representatives from each of the six counties in the Heritage Area, members of State and local government agencies, elected officials, business and industry representatives, a

representative of the Mississippi Band of Choctaw Indians, members of conservation and tourist-affiliated organizations, environmental consultants and private citizens, was formed to assist the MDMR-CRMP in an oversight capacity for formulation and implementation of the Heritage Area Management Plan. The Heritage Area Commissioners also serve as liaisons between the Heritage Area's coordinating entity and the interests they represent. Heritage Area Commission meetings were held in March 2005 and February 2006. The MDMR-CRMP and its environmental consultant for preparation of the Management Plan and Environmental Assessment solicited input and disseminated information regarding development of the Heritage Area Management Plan and/or Environmental Assessment at these meetings, as well as through individual contacts with Commission members.

Eleven Task Commissioners, representing the six Heritage Area counties, were selected from the 32 member Heritage Area Commission and actively participated in development of the Heritage Area Management Plan's mission statement, goals, strategies, heritage related resources, themes and initial list of projects. They are very familiar with the heritage resources, especially in their counties, and their input aided development of the alternative plan described in the Environmental Assessment. Meetings soliciting input from the Task Commissioners were held at MDMR-CRMP offices in Biloxi in March, April, May, June, and July of 2005, February and May of 2006 and August 2007. Individuals with expertise on particular resources and programs were contacted for information during development of the Environmental Assessment. The Task Commissioners continue to assist with identification of heritage area projects, potential partners for projects, and sources of matching funds and they help grow the Heritage Area within their county and the region. Over the course of plan implementation, it is anticipated that the Task Commissioners will assume specialty roles for focusing attention on issues related to the major components of cultural, historic, archaeological, and natural resources and in soliciting support and funding for strategy related projects that help achieve the Heritage Area's goals.

In the fall of 2005, the MDMR-CRMP staff members actively participated in the Governor's Mississippi Renewal Forum to devise plans for the recovery, rebuilding and renewal of the parts of Mississippi, especially the six coastal counties that compose the Heritage Area, devastated by Hurricane Katrina.

The goals and strategies of the Heritage Area Management Plan were presented at the Renewal Forum meetings. The rebuilding plans for eleven coastal communities in the Heritage Area (Waveland, Pass Christian, Long Beach, Gulfport, Bay St. Louis, Biloxi, Gautier, d'Iberville, Ocean Springs, Pascagoula, Moss Point) included elements taken from the Heritage Area Management Plan and many of these projects were submitted to MDMR-CRMP for selection for funding under the CIAP program managed by the Minerals Management Service.

With approval of the National Park Service, copies of the draft Environmental Assessment and the Management Plan were placed in a public library in each of the six counties on February 11, 2008, for a 30-day public review and comment period along with instructions on where to submit comments:

- Pascagoula Public Library, Pascagoula
- Lucedale-George County Public Library, Lucedale
- Margaret Sherry Memorial Library, Biloxi
- Bay St. Louis-Hancock County Public Library, Bay St. Louis
- Margaret Reed Crosby Memorial Library, Picayune
- Stone County Public Library, Wiggins.

A digital copy of the Environmental Assessment and the Management Plan were put on the MDMR-CRMP web site (<http://www.dmr.state.ms.us/>) and a hardcopy of the documents were placed in the office of the coordinating entity, the MDMR-CRMP, in Biloxi for a 30-day review and comment period beginning on February 11, 2008. Under the Public Notice section of the MDMR web site the following citation *Public Notice: Mississippi Gulf Coast National Heritage Area Draft Environmental Assessment and Management Plan Available* provided information on the Heritage Area, location of hardcopies of the two documents and instructions as to where to send comments or seek additional information (Appendix G). The notice of the availability of the Environmental Assessment for review and comment also was published in *The Sun Herald* newspaper, the most widely distributed newspaper on the Mississippi Gulf Coast, on February 11, 2008 (Appendix G). Five letters were received in response to the public notice and solicitation of comments and all expressed support for the Heritage Area and proposed management (Appendix G).

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APPENDIX A

PRELIMINARY SUMMARY OF RESOURCES FOR COMMUNITIES IN CLUSTERS IN THE MISSISSIPPI GULF COAST NATIONAL HERITAGE AREA

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Cluster Area City Slogan (Settlement - Incorporation)	Historical and Archaeological Resources	Cultural Resources	Natural and Recreational Resources	Festivals	Heritage-Related CIAP Approved Proposals	Visitor Center – Tourist Information
Stennis Space Center – NASA Buffer Zone (1963)	Rocket Propulsion Test Complex ¹ (1965-present)	StenniSphere Museum	Tour of 125,000 ac acoustical buffer zone & America’s largest rocket test complex; swamp to space exhibit Mike’s Island Preserve (TNC ⁵)		Implementation of Hancock Co. Greenways: Possum Walk Environmental & Historical Trail, Linking NASA’s Infinity to the Past Infinity Center Project	Hancock Co. Welcome Center at I- 10 and HWY 607 NASA’s StenniSphere / Launch Pad at Welcome Center
Pearlington	Claiborne Site (1500-800 BC) ^{2,4} S J Mound (AD 350-1000) ² Three Sisters Shell Midden (50 BC-AD 1000) ² Up the Tree Shell Midden (50 BC-AD 1000) ² Williams Site (100 BC-AD 1000) ² Jackson Landing Site ⁴ Mullato Bayou ⁴				Implementation of Hancock Co. Greenways: Pearlington Boat Launch Enhancement	
Waveland <i>The Hospitality City</i> (1888-previously part of Shieldsboro)	Waveland Civic Center (Old Waveland Elementary School) ⁴	Gulfside United Methodist Assembly Historic Waveland City Hall Coleman Avenue (cultural focal point)	Buccaneer State Park & Campground Buccaneer State Park Beachfront Walking & Bike Path at Garfield Ladner Municipal Fishing Pier Lakeshore Savanna Preserve (W of Waveland; TNC ⁵) Willie F. Brown Preserve (N of Waveland, TNC ⁵)	Mardi Gras Parade MS Coast Mustang Club “Spring Show” St. Patrick’s Day Parade Annual Wave Fest Crab Festival City of Waveland Festival of Lights & Santa Parade	Implementation of Hancock Co. Greenways: Sustainable Comfort Nodes on Beach Pathway (also at Clermont Harbor & Lakeshore to west) Implementation of Hancock Co. Greenways: Continuation of Hancock Co. Beach Pathway	
Bay St Louis <i>A Place Apart</i> 1780 (Shieldsborough-	Beach Blvd HD Sycamore HD Washington HD Onward Oaks (1875) ³ Old Bay St Louis High School ⁴ Hancock Co. Historic	Alice Moseley Folk Art Studio & Antiques Museum, Home & Gallery Hancock Co. Historical Society Kate Lobrano House (c 1896)	Bay Hide Away RV Park & Campground Bay St Louis Campground Bay Marina RV Park Hollywood Casino RV Campground	Mardi Gras Parades Celebrity Chef Fest Crab Festival St. Rose de Lima Fair Cedar Rest Annual Cemetery Tour	Implementation of Hancock Co. Greenways: Cedar Point Boat Launch Enhancement Implementation of Hancock Co. Greenways: Sustainable Comfort Nodes on Beach Pathway	Hancock Co. Tourism Development Bureau

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1818) (Bay St. Louis – 1882) Six Sisters: 1827 Steamboat scheduled stop	Courthouse ² Historic L & N Train Depot (c 1928) & District ⁴ Bay St. Louis City Hall ⁴ Webb School ⁴	St. Augustine Catholic Church, Seminary, Grotto Old Town Bay , St Louis (~200 artists in area) St. Rose de Lima Catholic Church & “Christ in the Oak” Mural by Auseklis Ozals	Beachfront Walking & Bike Path-Washington Ave- American Legion Pier (fishing) Jimmy Rutherford Ulman Ave Fishing Pier McLeod Water Park	Cruisin’ the Coast		
		Historic Bay St. Louis City Hall Historic Bay St Louis Depot ³ “The Trust” Bed & Breakfast Inn Tour Hancock Co. Stephen Ambrose Literary Landmark				
Pass Christian <i>The Birthplace of Yachting in the South</i> (1838) Six Sisters: 1827 Steamboat scheduled stop	Old Pass Christian High School ⁴	Palace in the Pass (Historical Home) Nettles Pottery	A1 Trade World Flea Market & RV Park Five Star Resort Campground	Jazz in the Pass Art in the Pass Christmas in the Pass Mardi Gras Parade (St. Paul’s) Annual St. Paul’s Seafood Festival “Frost Bite 50” Annual Barbeque Under the Oaks	Pass Christian Harbor Expansion Conservation Lands Acquisition in MS Coastal Plain – Pulitzer Property Conservation Lands Acquisition in MS Coastal Plain – Allison Property	
Long Beach <i>The Friendly City</i> (1905)	W. J. Quarles House & Cottage (Late 19th C) ² The Friendship Oak	Bodine Pottery & Art Studio Red Creek Inn, Vineyard & Racing Stable	E.O. Hunt Oak of the Happy Oak Magic River Resort Plantation Pines Wolf River Canoe & Kayak	Mississippi Gulf Coast Kite Festival Mardi Gras Parade Celebrate the Gulf	Long Beach Harbor Expansion	

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			Rentals Natural Adventures Touring Kayaks Cat Island Adventures Offshore Fishing Charters Cam-Lo Charters Sandpiper Tours			
Gulfport <i>Where Your Ship Comes In</i> (1898) (Mississippi City-Handsboro: Six Sisters: 1827 Steamboat scheduled stop)	Benton, Thomas and Melinda House (ca 1870) ² G. B. Dantzer House (1924) ³ Hewes Building (1903-04) ² Finley B. Hewes House (Blossom Lodge) (1904) ³ Grass Lawn (Milner House) ^{3, 4} U.S. Post Office and Customhouse (1910-1963) ² Veterans Adm. Medical Center Biloxi (Gulfport Div.) ² Fort Massachusetts (ca 1859-63) ² Carnegie Library ⁴ Gulfport City Hall ⁴ Old Gulfport High School Complex ⁴ Old Hancock Co. Circuit Clerk’s Bldg. ⁴	Gulfport Little Theatre Mississippi Sound Maritime Historical Foundation & Museum Gulfport Centennial Museum Gillespie Art Gallery, William Carey College Grass Lawn ² CEC/Seabee Museum Armed Forces Retirement Home-Museum Lynn Meadows Discovery Center Naval Construction Battalion Center (1942) Naval Construction Battalion Center-Seabee Heritage Museum Gathering Grove Productions (Arts) Gulfport Little Theatre (61 yrs)	Bay Berry RV Park Baywood Campground, Inc. Campgrounds of the South Shields RV Park-NCBC Gulfport Base Mabry’s Red Barn RV Park San Beach RV Park Shields RV Park Offshore & Small Craft Fishing Charters Ship Island Excursions/Historic Fort Massachusetts Ship Island Excursions-Gulf Islander Charters Gulf Islander Charters Mid-South Sailing “Hunter Dealer” Ring Dang Do Charter Thrill Seeker DeSoto National Forest Tuxachanie Hiking Trail (N or Gulfport at Saucier in DeSoto NF) Bethel ATV Trail (N of Gulfport at Saucier in	Gulf Coast Winter Classic (Show Jumping) Bear Creek Blue Grass Festival Annual Mississippi Deep Sea Fishing Rodeo Cajun Country Swamp Pop Music Festival Scottish Games & Celtic Festival Cruisin’ the Coast All Harley Memorial Day Blowout Christmas Festival of Lights	Renewal of Joseph T Jones Park-Educational Pavilion Renewal of Joseph T Jones Park-Increase Public Access to Historical Jones Park, Fort Massachusetts, Ship Island & Cat Island Renewal of Jones Park-Educational Boardwalk Gulfport-Biloxi International Airport Turkey Creek Watershed Protection Project Sensitive Wetlands Acquisition - 1000 ft of Turkey Creek On the Green at Lynn Meadows Discovery Center Acquisition of Cat Island (~500 ac)	Mississippi Gulf Coast Convention & Visitors Bureau

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			DeSoto NF) Bethel Bicycle/Motorcycle Trail (N of Gulfport at Saucier in DeSoto NF) Big Foot Horse Trail (N of Gulfport at Saucier in DeSoto NF) Harrison County Fairgrounds Coasting Inc. Tours & Entertainment Conner Cain Tours & Charters Island View Casino			
Biloxi <i>A Great Deal to Offer</i> 1699 settlement (1838) Six Sisters: 1827 Steamboat scheduled stop	Biloxi Downtown HD West Beach HD West Central HD Harbor Square HD Scenic Drive HD Beauvoir (1852) ^{2,4} Bailey House (1850) ³ E Barq Pop Factory (1989) ² Biloxi Lighthouse (1848) ^{2,4} Biloxi's Tivoli Hotel (1926-27) ² Biloxi Veterans Administration Medical Center (1932-33) ² Bond House (1904) Old Brick House / Biloxi Garden Center ^{2,4} Brielmaier House (Town Green)(1895) ^{3,4} Brunet-Fourchy House (Mary Mahoney's Old French House Restaurant) (1835-36) ²	Maritime & Seafood Industry Museum (destroyed by Hurricane Katrina-Booking Schooner Tours) Beauvoir House Museum, Presidential Library & Gardens Saenger Theatre for the Performing Arts West End Hose Company No. 3 Museum & Fire Education Center St. Michael's Catholic Church The Redding House Old Brick House Biloxi Mardi Gras Museum Moran's Art Studio & French Burial Site	Counselor Oak Ring-in-the-Oak Patriarch Oak Glen Swetman Oak Jefferson Davis Oak Southern Comfort Camping Resort Cajun Oasis RV Park Everbreeze RV Park Fox RV Park Lakeview RV Resort Martin Lake Resort Southern Comfort Camping Resort Majestic Oaks RV Park Parker's Landing RV Park Mazalea Travel Park Cedar Lake Island Restoration in Tchoutacabouffa River	Professional Cowboys Assoc. Finals Biloxi Blues Festival Biloxi Boat & RV Show Annual Mississippi Coast Coliseum Country Cajun Crawfish Festival Confederate Memorial Day Blood & Sand "Biloxi's Beachfront Brawl" Billy Creel Memorial Wooden Boat Show Gorenflo's Annual Cobia Tournament Black Bay Mission	Biloxi Lighthouse Landing Land Acquisition for View Shed of Biloxi Lighthouse & Restoration & Protection of Natural Resources of Coastal Area. Schooner Pier Complex Ohr-O'Keefe Museum of Art Mississippi Sound Welcome Center Deer Island Tree Planting & Master Plan Development	

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	<p>Clemens House (1846-52)² Church of the Redeemer (1873-74)³ Fisherman's Cottage (ca 1900)^{3,4} Gillis House^{2,4} Hermann House (pre-1851)³ 638 East Howard (1898-1904)² Shipwreck Josephine (1867, 1968, 1875, 1880)² Magnolia Hotel (1847)^{2,4} Dorothy Hilzheim (Margaret Emilie) (1912)² Nativity B.V.M Cathedral (1902)² Peoples Bank of Biloxi (1913-14)² Raymond Bass Site (AD 1100-1450)² Redding House (1908)² Pleasant Reed House (ca 1887)³ Richard Site (AD 1450-1700)² Saenger Theater (1928-29)^{2,4} Scherer House (Spanish House) (ca 1845)² Seashore Campground School (ca 1915)² Suter House (ca 1885) Pradat House, Toledano House, Philbrick, Red Brick (Tullis-Toledano House) (1856-57)^{3,4} U.S. Post Office, Courthouse and Custom House (Biloxi City</p>	<p>Ohr-O'Keefe Museum of Art The Glen L. Swetman & The Mike Sekul (Biloxi Oyster Schooners) The Episcopal Church of the Redeemer² Biloxi Lighthouse Old Biloxi Cemetery Hurricane Katrina Tree Sculptures The Biloxi Little Theatre (1946) Center Stage (30 yrs) Hurricane Katrina Memorial USS Biloxi Bell/USS Biloxi Mast (Biloxi City Hall & Guice Memorial Park) KNS Theatre (Saenger Theatre)</p>	<p>(former sawmill community of Vennie) Biloxi Tour Train J L Scott Marine Education Center & Aquarium (destroyed by Hurricane Katrina; relocating to Ocean Springs) Mississippi Coast History Week Deer Island Fishing & Tours Grayline's Antebellum Biloxi Tour Keesler Air Force Base Tour NorthStar Sailing Beau Rivage Casino Grand Biloxi Casino Biloxi Natatorium Boomtown Casino IP Casino Isle of Capri Casino Palace Casino Treasure Bay Offshore & Small Craft Fishing Charters Biloxi Bay Charter & Nature Tours (Deer Island) Biloxi Schooners Tours Biloxi Shrimping Trip/Shrimp Tour Due South Charters Fish-Finder Charters Fish-On Cat</p>	<p>"Fishing Armada" International Spring Festival Gulf Coast Wooden Boat Show Coast Cruisers & Ping Ladies "Hot Rod Saturday" Blessing of the Biloxi Shrimp Fleet & Festival "Vettes by the Shore" Great Biloxi Schooner Race MS Coast Coliseum Summer Fair George E Ohr Festival of Arts Biloxi Seafood Festival Fall Muster Chefs of the Coast Christmas on the Water Boat Parade Festival of Trees & Lights & Parade Mardi Gras Parade² Mississippi Gulf Coast Annual Spring Pilgrimage St. Patrick's Day Parade & Irish Heritage Celebration Old Brick House</p>		

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	Hall) (1908) ^{2, 4} 121 West Water Street (ca 1905) ² Gulf Coast Center for the Arts (Old Biloxi Public Library) ^{2, 4} Glen Sweetman House ^{3, 2} Beauvoir Confederate Cemetery ^{1, 4} Beauvoir-Hayes Cottage ⁴ Creole Cottage (First Biloxi Library) ⁴ Maritime & Seafood Industry Museum (USCG Barracks) ^{3, 4}		Island Breeze Charters Joka’s Wild Charters Miss Check It Charters North Star Sailing Charters T&D Charters Southern Way Charters	Twilight Time Jazz Concert Biannual Tullis Manor Antiques & Collectibles Fair Cedar Rest Cemetery Tour I Love America Mississippi Gulf Coast Billfish Classic		
D’Iberville <i>Down-home Spirit, Uptown Style</i> 1699 settlement (1892; 1988)		Centuries Antique Mall (largest MS Gulf Coast)	Red Creek Wildlife Management Area to North Small Craft Fishing Charters		Tchouticabouffa River Park and Preserve D’Iberville Municipal Marina Improvements	
Ocean Springs <i>The City of Discovery</i> 1699 settlement (1854; 1892) Six Sisters: 1827 Steamboat scheduled stop	Indian Springs HD Lover’s Lane HD Marble Springs HD Ocean Springs Multiple Resource Area Old Ocean Springs HD Shearwater HD Sullivan-Charnley HD French Warehouse (1717- 1725) ² Old Farmers and Merchants State Bank (1913) ² Back Bay of Biloxi shipwreck site ²	Walter Anderson Museum of Art Shearwater Pottery Mississippi Vietnam Veterans Memorial G.I. Museum-“Where Military History Comes Alive” Mary C. O’Keefe Cultural Center Walter Anderson Players Walter Anderson Thematic Group Ocean Springs Community-	Camp Journey’s End Martin’s Lake Resort, Inc. Offshore Fishing Charters Davis Bayou Gulf Islands National Seashore Recreation Horn Island Wildlife Sanctuary Recreation (GINS) Petit Bois Island Wildlife Sanctuary Recreation (GINS) Ship Island East Recreation (GINS)	Mardi Gras Parade Herb, Garden & Music Festival “King’s Feast” Renaissance Faire Art Walk Shedhead Blues Festival Annual Red, White and “Blueberry” Festival Peter Anderson Art Festival Annual Christmas	New Beginnings – Marine Education Center at Cedar Point (Replaces J L Scott Marine Education Center & Aquarium destroyed by Hurricane Katrina)	Ocean Springs Chamber of Commerce –Main Street-Visitors Center Gulf Islands National Seashore (GINS) Visitors Center

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	<p>Louisville and Nashville Railroad Depot at Ocean Springs (The Whistle Shop) (1907)^{2,4} Bertuccini House and Barbershop² Carter-Callaway House² St John's Episcopal Church (1892)² Thomas Isaac Keys House (1910-11)² Halstead Place (ca 1910)³ Cochran-Cassanova House (ca 1880)² O'Keefe Clark Boarding House (ca 1850, moved 1910)² Old Ocean Springs High School (1927)² Vancleave Cottage (ca 1900) Delcastle (Lee House) (1927)² Miss-LA-Bama (ca 1884)² 1112 Bowen Avenue (ca 1890)² 1410 Bowen Avenue (ca 1900)² Hansen-Dickey House (ca 1905)² Old Ocean Springs Public School (1927)² Armstrong-Weider Cottage⁴ Ocean Springs Community Center⁴ Old Ocean Springs High School⁴ Ocean Springs Senior Citizens Center - (Old) City Hall & Fire Station⁴</p>	<p>Walter Anderson's largest mural WWII/USS Tullibee Memorial (Submariners lost & Freedom Boomers built at Ingalls) The Art House (30 artists)</p>	<p>Ship Island West Recreation Sandhill Crane National Wildlife Refuge Recreation (GINS) Old Fort Bayou Preserve (TNC⁵) J L Scott Marine Education Center & Aquarium (destroyed by Hurricane Katrina; relocating to Ocean Springs) Pe' Ro Guides</p>	<p>Tree Lighting & Parade Earth Day Festival- Gulf Islands National Seashore Spring Pilgrimage Re-enactment of Landing of d'Iberville in 1699 Elks Fishing Rodeo French Colonial Living History Re-enactment The Great Storytelling Festival Holiday Open House Ocean Springs Walking & Driving Tour & Live Oaks Bicycle Route</p>		

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<p>Gautier</p> <p><i>Once Visited, You May Never Want to Leave</i></p> <p>(formerly East Pascagoula- Six Sisters: 1827 Steamboat scheduled stop)</p> <p>(1986)</p>	<p>Applestreet Site² Col. Alfred E. Lewis House (Oldfields) (1845; moved 1947)² Graveline Mound Site (AD 0- 350) ²</p>		<p>Indian Point RV Resort/Campground Small Craft Fishing Charters Rock-N-Reel Charter Mississippi Sandhill Crane National Wildlife Refuge Shepard State Park Shepard State Park Trails Boykin Enterprises- Pascagoula River Ecotours Eco-tours of South Mississippi</p>	<p>Gulf Coast Orchid Show & Plant Sale Gautier Mullet Festival</p>	<p>Coastal Land Conservation in Area of Point Clear Native Vegetation & Estuarine Plant Nursery Addition to Pascagoula River Basin Estuarine Education Center</p>	
<p>Pascagoula</p> <p><i>The Flagship City or Singing River City by the Sea</i></p> <p>(1838-community 1870 – Scranton 1904-Pascagoula)</p> <p>Six Sisters: 1827 Steamboat scheduled stop</p>	<p>Front Street HD Krebsville HD Orange Ave HD Lemuel D. Herrick House (Ertz- Berger, Elizabeth House) (1899)² Bellevue (The Longfellow House) (1850)² Capt. Willie Bodden House² (Larry K. Taylor House) (1910)² Cottage by the Sea Tavern (Bobbie J. Fondren House) (1872)² Anna C. Brash House (Paul W Hines, Jr.) (1900)² Pascagoula Central Fire Station #1 (Old Fire Station) (1924)² Clare T. Clark House (Brent E. Smith House) (1899)³ Capt. F. L. Clinton House (Billy</p>	<p>Le Pointe Krebs House-Old Spanish Fort Museum Scranton Nature Center & Theme Gardens Scranton Shrimp Boat Museum First wood duck decoy carving factory in area- 1919-1962</p>	<p>Grand Bay National Wildlife Refuge Grand Bay National Estuarine Research Reserve Shepard State Park Offshore and Small Craft Marsh Fishing Charters Gulf Coast Gator Ranch & Tours</p>	<p>Singing River Rod Association “Rod Run” Mississippi Gulf Coast Blues & Heritage Festival Jackson County Fair Wild Wing Nature & River Festival (Pascagoula River Corridor)</p>	<p>The Point Acquisition Project</p>	

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	<p>R. Anderson House) (ca 1915)² Capt. Herman H. Colle Sr. House (Mrs. W. J. Colle House) (1880)² Colle Company Housing (1895)² DeJean House (1906)² R. A. Farnsworth Summer Home (J. W. Brumfield House) (1898; 1904)² Mayor Ebb Ford House (Wendell Lee House) (1900)² Mayor Ebb Ford House (Wendell Lee House) (1900)² George Frentz House (James H. Frankie House) (1878)² Adam Gautier House (M. L. Hatten, Jr.) (1905)² Eugene Gautier (Virgil C. Gill House) (1906)² Walter Gautier (Warren B. Seely House) (1882)² William Hughes House (Harris Barrett & Michele House) (1899)² Edgar W. Hull House (ca 1851)³ Georgia P. Kinne House (George J. Hollister) (1899, 1907)³ Agnes V. Krebs House (Donald E. Frederic House) (1885)² James Krebs House (Harold A. Thomas House) (1905)² Round Island Lighthouse (1833, 1859)²</p>					

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Cluster Area <i>City Slogan</i> (Settlement - Incorporation)	Historical and Archaeological Resources	Cultural Resources	Natural and Recreational Resources	Festivals	Heritage-Related CIAP Approved Proposals	Visitor Center – Tourist Information
	<p>Leonard Levin House (Grady Baggett House) (1885)² Louisville and Nashville Railroad Depot^{2, 4} Nelson Tenement (Charles Franklin House) (1895)² John C. Nelson House (Jennie Ruth Davis House) (1899)² Old Spanish Fort (Krebs House) (Old French Fort) (ca 1721)^{2, 4} Lena Olsen House (Norma Smith House) (1891)² Old Pascagoula High School^{2, 4} Pascagoula Street Railroad & Power Co. (Pascagoula Ice & Freezer Co., Inc.) (1903)² Randall's Tavern (Hollister House) (1900)³ Dr. Joseph A. Tabor House (M. M. Flechas House) (1906)² George Thompson House (Capt. S. H. Bugge House, Stephen T. Mathis House) (1890)² Laura Westphal House (1896)² Round Island Lighthouse⁴ One of largest lumber ports on Gulf Coast with 18 mills by 1899, all gone by 1939</p>					
<p>Moss Point <i>The River City or The Friendly River City</i></p>	<p>Cudabac-Gantt House (1907) Griffin House (mid-19th C) F. Dantzler House (1906-1915)² St. Mary's by the River (Mhoon</p>	<p>Old Spanish Fort & Museum Scranton Floating Museum</p>	<p>Grand Bay National Wildlife Refuge Grand Bay National Estuarine Research Reserve (GBNERR)</p>	<p>Hurley Old Fashion Day (North of Moss Point) Jackson County Ole Time Festival & Mule</p>	<p>Working Waterfront Project #3: Property Acquisition Adjacent to Pelican Landing Working Waterfront Project #1: Land Acquisition for Development</p>	<p>Jackson Co. Welcome Center I-10 West at Exit 75</p>

APPENDIX A. PRELIMINARY SUMMARY OF RESOURCES FOR COMMUNITIES IN CLUSTERS IN THE MISSISSIPPI GULF COAST NATIONAL HERITAGE AREA.

Cluster Area City Slogan (Settlement - Incorporation)	Historical and Archaeological Resources	Cultural Resources	Natural and Recreational Resources	Festivals	Heritage-Related CIAP Approved Proposals	Visitor Center – Tourist Information
(1901)	Estate) (1929) ² 1 st successful pulp paper mill in US in 1911		Ward Bayou Wildlife Management Area “Moss Point” Trail McCoy’s River and Marsh Tours-Ecotours of Pascagoula River Pascagoula River Audubon Center Gulf Coast Gator Ranch & Airboat Tours Marsh Fishing.com	Pull (in Vancleave)	of Riverfront Recreational Corridor Conservation Lands Acquisition in MS Coastal Plain: Moss Point EcoTourism Waterfront Development Project Conservation Lands Acquisition in MS Coastal Plain (on Old Fort Bayou)	
Picayune <i>New South, Old Charm</i> (1904)	Tiger Hammock Site (AD 400- 1000) ¹ Bertie Rouse School (East Side School) ⁴ McNeil Consolidated School Complex ⁴ Picayune City Hall ⁴ Pinecote Pavilion ⁴ Shay Locomotive	The Crosby Arboretum Heritage Day Crosby Arboretum Mississippi State University Margaret Reed Crosby Memorial Library Brick by Brick Memorial (veterans) Company A, 890th Eng. Bat. Monument (Operation Iraqi Freedom) Pontoon Bridge (veterans)	Walkiah Bluff Water Park Bogue Chitto National Wildlife Management Area & Wildlife Refuge The Crosby Arboretum and Native Plant Center Lacy RV Park Camp Ground Sun Roamers RV Resort “Tung Capital of the World” in 1920s-30s.	Picayune Street Fair Community Christmas in the Park	Pearl River Co. Steep Hollow History Museum The Crosby Arboretum Education Center	Pearl River Co. Welcome Center – I-59 North
Poplarville	Pearl River Community College – Huff Hall & President’s House ⁴	Blue Tara U-Pick Blueberry Farm Promise Land (hiking & driving Belgian horses) 155th Brigade Combat Team Bravo Company Memorial (Iraq) Pearl River Community College Museum	Old River Wildlife Management Area Wolf River Wildlife Management Area Sweet Bay Bogs Preserve (TNC ⁵ , E of Poplarville)	Blueberry Jubilee & Storytelling Festival		

APPENDIX A. PRELIMINARY SUMMARY OF RESOURCES FOR COMMUNITIES IN CLUSTERS IN THE MISSISSIPPI GULF COAST NATIONAL HERITAGE AREA.

Cluster Area <i>City Slogan</i> (Settlement - Incorporation)	Historical and Archaeological Resources	Cultural Resources	Natural and Recreational Resources	Festivals	Heritage-Related CIAP Approved Proposals	Visitor Center – Tourist Information
Wiggins 1904	Stone County Courthouse ⁴ Wiggins Depot (Gulf & Ship Island RR Depot) ³		Flint Creek Water Park South Mississippi Canoe Rental Red Creek Wildlife Management Area Red Creek Canoe Rental Bethel ATV Trail Airey Lake Recreation Area (DNF) POW Lake Fairley Bridge Landing Cypress Creek Landing Club Red's Beachhouse DeSoto National Forest (established in 1930 to study forest management and reforestation after virgin forests were clearcut throughout S Mississippi) Black Creek Wilderness & Hiking Trail in DeSoto NF Little Biloxi Wildlife Management Area (S of Wiggins near McHenry) Big Biloxi Recreation Area (S of Wiggins at Saucier) Country Side RV Park & Trading Post (S of Wiggins at Saucier) Pecan Grove RV Park (S of Wiggins at Saucier) Big Foot Horse Trail (S of Wiggins at McHenry) Tuxachanie National	Magnolia State Bluegrass Festival	Old Wire Road Trail Project Corridor	Stone Co. Economic Development Partnership and Chamber of Commerce

APPENDIX A. PRELIMINARY SUMMARY OF RESOURCES FOR COMMUNITIES IN CLUSTERS IN THE MISSISSIPPI GULF COAST NATIONAL HERITAGE AREA.

Cluster Area <i>City Slogan</i> (Settlement - Incorporation)	Historical and Archaeological Resources	Cultural Resources	Natural and Recreational Resources	Festivals	Heritage-Related CIAP Approved Proposals	Visitor Center – Tourist Information
			Recreation Trail (S of Wiggins at McHenry)			
<p>Lucedale</p> <p><i>Where People and Progress Meet</i></p> <p>1901</p>	<p>Bilbo Basin Shell Deposit (AD 1200-1700) ²</p> <p>George Co. Courthouse⁴</p> <p>Lucedale Schoolhouse⁴</p> <p>Merrill Bridge *GM & N Railroad Bridge)⁴ (NW of Lucedale at Merrill)</p>	<p>Palestine Gardens “A Replica of the Holy Land”</p>	<p>Pascagoula River Wildlife Management Area</p> <p>Lucedale Greenway (education & recreation)</p> <p>Herman Murrah Preserve (W of Lucedale, TNC⁵)</p> <p>Charles M. Deaton Preserve (NW of Lucedale, TNC⁵)</p>	<p>Arbor Day</p> <p>Wizard of Oz Festival</p> <p>Shane Smith Memorial Octoberlite Fly-in</p> <p>Lucedale Christmas Parade</p> <p>Gingham Tree Arts & Crafts Festival</p>	<p>Preservation of Green Spaces in City of Lucedale</p> <p>Pascagoula River Ecotourism and Education Trails (at river headwater NW of Lucedale)</p>	<p>Greater George Co. Economic Development Foundation</p>
<p>¹ National Historic Landmark</p> <p>² National Historic Register Site</p> <p>³ National Historic Register Site Destroyed by Hurricane Katrina</p> <p>⁴ Mississippi Landmark</p> <p>⁵ TNC: The Nature Conservancy</p>						
<p>Sources: MDAH 2002, 2005 a, b, c; DeLorme 2004; MDWFP 2007; MDMR 2007; Mississippi.1.866.SEEMISS (733-6477); Mississippi Gulfcoast Convention and Visitors Bureau 2006 & 2007; Hancock County Tourism Development Bureau 2006 & 2007; Frasier 2006; Federal Writers’ Project of the Works Progress Administration 1949.</p>						

APPENDIX B

HERITAGE RESOURCES (UPDATED JUNE 2007)

HISTORIC RESOURCES

NRHP Historic Districts & Multiple Resource Areas

Location

NRHP Site Condition Post-Katrina

Hancock County

Beach Boulevard Historic District	Bay St. Louis	Structures adjacent to Bay and 5 to 10 houses inland destroyed; those further inland are damaged but restorable.
Historic Resources of Bay St. Louis	Bay St. Louis	Structures damaged but restorable.
Historic Resources of Bay St. Louis; not including district.	Bay St. Louis	Not Quantified
Sycamore Street Historic District	Bay St. Louis	Structures damaged but restorable.
Washington Street District	Bay St. Louis	Structures damaged but restorable.

Harrison County

Biloxi Downtown Historic District (1894, 1896, 1898, 1929)	Biloxi	Structures destroyed on east end of Howard but restorable on west end closer to downtown.
West Beach Historic District	Biloxi	Not Quantified
West Central Historic District	Biloxi	Not Quantified
Historic Resources of Biloxi	Biloxi	Not Quantified
Harbor Square Historic District	Gulfport	Not Quantified
Scenic Drive Historic District	Pass Christian	Virtually entire district destroyed.

Jackson County

Indian Springs Historic District (ca 1850-1930)	Ocean Springs	Not Quantified
Lover's Lane Historic District (ca 1875-1926)	Ocean Springs	Not Quantified
Marble Springs Historic District (ca 1890-1930)	Ocean Springs	Not Quantified
Ocean Springs Multiple Resource Area	Ocean Springs	Not Quantified
Old Ocean Springs Historic District (ca 1850-1935)	Ocean Springs	Not Quantified
Shearwater Historic District (1924-65)	Ocean Springs	Shearwater Pottery and Anderson family homes were destroyed.
Sullivan-Charnley Historic District (1890-1910)	Ocean Springs	Sullivan house destroyed. Heavy damage to Charnley House.
Walter Anderson Thematic Group (Ocean Springs Multiple Resource Area)	Ocean Springs	W Anderson house washed off foundation but intact.
Front Street Historic District (1820-1910)	Pascagoula	2914 & 2916 salvageable.
Krebsville Historic District	Pascagoula	Unknown
Orange Avenue Historic District	Pascagoula	Not Quantified
Historic Resources of Pascagoula, MS	Pascagoula	Not Quantified

NRHP Historic and Pre-Historic Sites

Location

NRHP Site Condition Post-Katrina

George County

Bilbo Basin Shell Deposit Site (AD 1200-1700)	Lucedale	Unknown
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Hancock County

Onward Oaks; Camp Onward (ca 1875)	Bay St. Louis	Destroyed*
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Rocket Propulsion Test Complex (1965-present)	Bay St. Louis	Not Damaged
Diamondhead Shell Midden	Diamondhead	Unknown
Nugent Site (8000 BC-AD 700)	Kiln	Unknown
Jackson Landing Site	Mulatto Bayou	Unknown
Claiborne Site (1500-800 BC)	Pearlington	Unknown
S J Mound (AD 350-600; AD 600-1000)	Pearlington	Unknown
Three Sisters Shell Midden (50 BC-AD 1000)	Pearlington	Unknown
Up the Tree Shell Midden (50 BC-AD 1000)	Pearlington	Unknown
Williams Site (100 BC-AD 1000)	Pearlington	Unknown

Harrison County

Beauvoir (ca 1852)	Biloxi	Structures severely damaged or destroyed. Plan to rebuild.
Bailey House (ca 1850)	Biloxi	Destroyed
E. Barq Pop Factory (ca 1898)	Biloxi	Minor damage
Biloxi Lighthouse (1848)	Biloxi	Minor damage
Biloxi's Tivoli Hotel (1926-27)	Biloxi	SE corner of structure severely damaged; damage on first two floors.
Biloxi Veterans Administration Medical Center (1932-33)	Biloxi	Severe damaged
Bond House (1904)	Biloxi	Moderate damage
Old Brick House / Biloxi Garden Center	Biloxi	Serious structural damage. City plans to restore.
Brielmaier House (1895)	Biloxi	Destroyed
Brunet-Fourchy House (Mary Mahoney's Old French House Restaurant) (1835-36)	Biloxi	Severe damage. Restored for restaurant use.
Clemens House (1846-52)	Biloxi	Minor damage
Church of the Redeemer (1873-74)	Biloxi	Destroyed
Fisherman's Cottage (ca 1900)	Biloxi	Destroyed
Gillis House	Biloxi	Destroyed
Hermann House (pre-1851)	Biloxi	Destroyed*
638 East Howard (1898-1904)	Biloxi	Minor damage
Shipwreck Josephine (1867, 1968, 1875, 1880)	Biloxi	Unknown
Magnolia Hotel (1847)	Biloxi	First floor flooded, but structure is restorable.
Dorothy Hilzheim (Margaret Emilie) (1912)	Biloxi	Unknown
Nativity B.V.M Cathedral (1902)	Biloxi	Minor damage
Peoples Bank of Biloxi (1913-14)	Biloxi	Minor damage
Raymond Bass Site (AD 1100-1450)	Biloxi	Midden exposed
Redding House (1908)	Biloxi	Minor damage
Pleasant Reed House (ca 1887)	Biloxi	Destroyed; archives preserved
Richard Site (AD 1450-1700)	Biloxi	Midden exposed
Saenger Theater (1928-29)	Biloxi	Minor damage
Scherer House (Spanish House) (ca 1845)	Biloxi	Minor damage
Seashore Campground School (ca 1915)	Biloxi	Minor damage
Suter House (ca 1885)	Biloxi	Minor damage
Pradat House, Toledano House, Philbrick, Red Brick (Tullis-Toledano House) (1856-57)	Biloxi	Destroyed
U.S. Post Office, Courthouse and Custom House (Biloxi City Hall) (1908)	Biloxi	Minor damage
121 West Water Street (ca 1905)	Biloxi	Catastrophic damage

Gulf Coast Center for the Arts (Old Biloxi Public Library)	Biloxi	Severe damage
Glen Swetman House	Biloxi	Destroyed
Benton, Thomas and Melinda House (ca 1870)	Gulfport	Survived with minimal water damage.
G. B. Dantzler House (1924)	Gulfport	Destroyed
Hewes Building (1903-04)	Gulfport	Moderate damage
Finley B. Hewes House (Blossom Lodge) (1904)	Gulfport	Destroyed
Grass Lawn (Milner House)	Gulfport	Destroyed. Gulfport plans to rebuild.
U.S. Post Office and Customhouse (1910-1963)	Gulfport	Moderate damage
Veterans Adm. Medical Center Biloxi (Gulfport Div.)	Gulfport	Severe damage
Fort Massachusetts (ca 1859-63)	Gulf of Mexico	Damaged but NPS plans to restore.
W. J. Quarles House & Cottage (Late 19th C)	Long Beach	Moderate damage

Jackson County

Applestreet Site	Gautier	Unknown
Col. Alfred E. Lewis House (Oldfields) (1845; moved 1947)	Gautier	Unknown
Graveline Mound Site (AD 0-350)	Gautier	Unknown
DeGroot Folk House (ca 1880)	Hurley	Unknown
Cudabac-Gantt House (1907)	Moss Point	Unknown
Griffin House (mid-19th C)	Moss Point	Unknown
A. F. Dantzler House (1906-1915)	Moss Point	Survived*
St. Mary's by the River (Mhoon Estate) (1929)	Moss Point	Survived*
French Warehouse (1717-1725)	Ocean Springs	Unknown
Old Farmers and Merchants State Bank (1913)	Ocean Springs	Unknown
Back Bay of Biloxi shipwreck site	Ocean Springs	Unknown
Louisville and Nashville Railroad Depot at Ocean Springs (The Whistle Shop) (1907)	Ocean Springs	Unknown
Bertuccini House and Barbershop	Ocean Springs	Unknown
Carter-Callaway House	Ocean Springs	Unknown
St. John's Episcopal Church (1892)	Ocean Springs	Minor damage
Thomas Isaac Keys House (1910-11)	Ocean Springs	Unknown
Halstead Place (ca 1910)	Ocean Springs	Destroyed*
Cochran-Cassanova House (ca 1880)	Ocean Springs	Unknown
O'Keefe Clark Boarding House (ca 1850, moved 1910)	Ocean Springs	Unknown
Old Ocean Springs High School (1927)	Ocean Springs	OK
Vancleave Cottage (ca 1900)	Ocean Springs	Unknown
Delcastle (Lee House) (1927)	Ocean Springs	Unknown
Miss-LA-Bama (ca 1884)	Ocean Springs	Unknown
1112 Bowen Avenue (ca 1890)	Ocean Springs	Unknown
1410 Bowen Avenue (ca 1900)	Ocean Spring	Unknown
Hansen-Dickey House (ca 1905)	Ocean Springs	Severely damaged*
Old Ocean Springs Public School (1927)	Ocean Springs	OK
Lemuel D. Herrick House (Ertz-Berger, Elizabeth House) (1899)	Pascagoula	Survived*
Bellevue (The Longfellow House) (1850)	Pascagoula	Minor damage
Capt. Willie Bodden House (Larry K. Taylor House) (1910)	Pascagoula	Unknown
Cottage by the Sea Tavern (Bobbie J. Fondren House) (1872)	Pascagoula	Destroyed
Anna C. Brash House (Paul W Hines, Jr.) (1900)	Pascagoula	Moderate damage
Pascagoula Central Fire Station #1 (Old Fire Station) (1924)	Pascagoula	Unknown

Clare T. Clark House (Brent E. Smith House) (1899)	Pascagoula	Destroyed
Capt. F. L. Clinton House (Billy R. Anderson House) (ca 1915)	Pascagoula	Unknown
Capt. Herman H. Colle Sr. House (Mrs. W. J. Colle House) (1880)	Pascagoula	Moderate damage
Colle Company Housing (1895)	Pascagoula	Moderate damage
DeJean House (1906)	Pascagoula	Moderate damage
R. A. Farnsworth Summer Home (J. W. Brumfield House) (1898; 1904)	Pascagoula	Destroyed
Mayor Ebb Ford House (Wendell Lee House) (1900)	Pascagoula	Unknown
George Frentz House (James H. Frankie House) (1878)	Pascagoula	Unknown
Adam Gautier House (M. L. Hatten, Jr.) (1905)	Pascagoula	Unknown
Eugene Gautier (Virgil C. Gill House) (1906)	Pascagoula	Unknown
Walter Gautier (Warren B. Seely House) (1882)	Pascagoula	Unknown
William Hughes House (Harris Barrett & Michele House) (1899)	Pascagoula	Survived*
Edgar W. Hull House (ca 1851)	Pascagoula	Destroyed
Georgia P. Kinne House (George J. Hollister) (1899, 1907)	Pascagoula	Destroyed
Agnes V. Krebs House (Donald E. Frederic House) (1885)	Pascagoula	OK
James Krebs House (Harold A. Thomas House) (1905)	Pascagoula	Unknown
Round Island Lighthouse (1833, 1859)	Pascagoula	Unknown
Leonard Levin House (Grady Baggett House) (1885)	Pascagoula	OK
Louisville and Nashville Railroad Depot	Pascagoula	OK
Nelson Tenement (Charles Franklin House) (1895)	Pascagoula	Unknown
John C. Nelson House (Jennie Ruth Davis House) (1899)	Pascagoula	Survived*
Old Spanish Fort (Old French Fort) (ca 1721)	Pascagoula	Heavy flood damage to contents. Structure still standing.
Lena Olsen House (Norma Smith House) (1891)	Pascagoula	Unknown
Old Pascagoula High School	Pascagoula	Unknown
Pascagoula Street Railroad & Power Co. (Pascagoula Ice & Freezer Co., Inc.) (1903)	Pascagoula	Unknown
Randall's Tavern (Hollister House) (1900)	Pascagoula	Destroyed
Dr. Joseph A. Tabor House (M. M. Flechas House) (1906)	Pascagoula	OK
George Thompson House (Capt. S. H. Bugge House, Stephen T. Mathis House) (1890)	Pascagoula	Minor damage
Laura Westphal House (1896)	Pascagoula	Unknown

Pearl River County

Tiger Hammock Site (AD 400-1000)	Picayune	Unknown
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Stone County

George Austin McHenry (1895, 1901)	McHenry	Unknown
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* Frasier 2006

Mississippi Landmark Buildings

Location

George County

George County Courthouse	Lucedale
Lucedale Schoolhouse	Lucedale
Merrill Bridge (GM & N Railroad Bridge)	Merrill

Hancock County

Bay St. Louis City Hall	Bay St. Louis
Bay St. Louis Depot (Louisville & Nashville RR Depot)	Bay St. Louis
(Old) Bay St. Louis High School	Bay St. Louis
Claiborne Site	Pearlington
Hancock County Courthouse	Bay St. Louis
Jackson Landing Site (A)	Pearlington
Mulatto Bayou (Jackson Landing Site)	Pearlington
Waveland Civic Center ([Old] Waveland Elementary School)	Waveland
Webb School	Bay St. Louis

Harrison County

Beauvoir - Confederate Cemetery	Biloxi
Beauvoir - Hayes Cottage	Biloxi
Biloxi City Hall ([Old] US Post Office)	Biloxi
Biloxi Lighthouse	Biloxi
Creole Cottage (First Biloxi Library)	Biloxi
Dantzer House (Robinson - Maloney House)	Biloxi
Fisherman's Cottage	Biloxi
Gillis House	Biloxi
Gulf Coast Center for the Arts ([Old] Biloxi Public Library)	Biloxi
Jefferson Davis House ("Beauvoir")	Biloxi
Magnolia Hotel	Biloxi
Maritime & Seafood Industry Museum (US Coast Guard Barracks)	Biloxi
"Old Brick House" (Biloxi Garden Center)	Biloxi
Paul W. Brielmaier House (Town Green)	Biloxi
Saenger Theater	Biloxi
Tullis - Toledano House	Biloxi
Carnegie Library	Gulfport
Grass Lawn	Gulfport
Gulfport City Hall	Gulfport
Gulfport Depot (L & N Railroad Depot)	Gulfport
(Old) Gulfport High School Complex	Gulfport
(Old) Harrison County Circuit Clerk's	Gulfport
(Old) Pass Christian High School	Pass Christian

Jackson County

Armstrong - Weider Cottage	Ocean Springs
L & L Railroad Depot	Ocean Springs
Ocean Springs Community Center	Ocean Springs
(Old) Ocean Springs High School	Ocean Springs
Ocean Springs Senior Citizens Center ([Old] City Hall & Fire Station)	Ocean Springs
Krebs House (Old Spanish Fort)	Pascagoula
Pascagoula Depot (Louisville & Nashville Railroad Depot)	Pascagoula
(Old) Pascagoula High School	Pascagoula
Round Island Lighthouse	Pascagoula

Pearl River County

Bertie Rouse School (East Side School)	Picayune
McNeil Consolidated School Complex	Picayune (vic.)
Picayune City Hall	Picayune
Pinecote Pavilion (Crosby Arboretum)	Picayune (vic.)
Buck Branch School	Poplarville (W of)
Pearl River Community College - Huff Hall	Poplarville
Pearl River Community College - President's House	Poplarville

Stone County

Stone County Courthouse	Wiggins
Wiggins Depot (Gulf & Ship Island RR Depot)	Wiggins

Sources: MDAH 2002, 2005 a, b, c.

NATURAL RESOURCES

Public Recreation Areas/Resources

Location

National Wildlife Refuges

Mississippi Sandhill Crane NWR	Jackson Co.
Bogue Chitto NWR	Pearl River Co.
Grand Bay NWR	Jackson Co.

Wildlife Management Areas

Old River WMA	Pearl River Co.
Little Biloxi WMA	Stone & Harrison Co.
Red Creek WMA	Harrison, Stone & George Co.
Pascagoula River WMA	George & Jackson Co.
Ward Bayou WMA	Jackson Co.
Wolf River WMA	Pearl River Co.
Pearl River WMA	Pearl River Co.

National Forests

DeSoto National Forest	Stone, George, Harrison, Pearl River & Jackson Co.
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National Parks

Gulf Islands National Seashore	Harrison & Jackson Co.
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State Parks / Other Recreation Areas

Buccaneer SP	Waveland
Shepard SP	Pascagoula
Flint Creek Water Park	Wiggins
McLeod Park	Kiln

Walkiah Bluff Water Park
 Crossroads Water Park

Picayune
 N of Picayune

Gulf Ecological Management Sites (GEMS)

Bayou La Crois	Hancock Co.
Bayou Portage	Harrison Co.
Bellefontaine Marsh	Jackson Co.
Biloxi River Marshes	Harrison Co.
Cat Island	Harrison Co.
Davis Bayou	Jackson Co.
Deer Island	Harrison Co.
Escatawpa River	Jackson Co.
Grand Bay	Jackson Co.
Grand Bayou	Hancock Co.
Graveline Bay	Jackson Co.
Hancock County Marshes	Hancock Co.
Horn Island	Jackson Co.
Jourdan River	Hancock & Harrison Co.
Old Fort Bayou	Jackson Co.
Pascagoula River	Jackson Co.
Petit Bois	Jackson Co.
Round Island	Jackson Co.
Sandhill Crane Refuge	Jackson Co.
Ship Island	Harrison Co.
Wolf River	Harrison Co.

Famous Live Oak Trees

Counselor Oak	Biloxi
Ring-in-the-Oak	Biloxi
Patriarch Oak	Biloxi
Glen Swetman Oak	Biloxi
Jefferson Davis Oak	Biloxi
Friendship Oak	Long Beach
E. O. Hunt Oak of the Happy Oak	Long Beach

Sources: DeLorme 2004, MDMR 2007, MDWFP 2007

CULTURAL RESOURCES

Historic Lodgings, Educational Facilities, Festivals

Location

Historic Lodgings and Restaurants

Father Ryan House Bed & Breakfast Inn	Biloxi
Green Oaks Bed & Breakfast	Biloxi
The Old Santini House Bed & Breakfast	Biloxi
Mary Mahoney's Old French House Restaurant	Biloxi
Martha's Tea Room	Ocean Springs
Harbour Oaks Inn	Pass Christian

Educational Attractions, Museums, Art Galleries, and Libraries

John C. Stennis Space Center	Bay St. Louis
Kate Lobrano House (Hancock County Historical Society)	Bay St. Louis
Historic Hancock County Courthouse	Bay St. Louis
Hancock County Library-Stephen Ambrose Literary Landmark	Bay St. Louis
Alice Moseley Folk Art & Antique Museum	Bay St. Louis
Historic Bay St. Louis Depot	Bay St. Louis
Historic Bay St. Louis City Hall	Bay St. Louis
Old Town Bay St. Louis (200 Resident Artists)	Bay St. Louis
St. Augustine Catholic Church, Seminary & Grotto	Bay St. Louis
St. Rose de Lima Catholic Church ("Christ in the Oak" Mural)	Bay St. Louis
Beauvoir-Jefferson Davis Home & Presidential Library	Biloxi
Biloxi Light House	Biloxi
The Episcopal Church of the Redeemer	Biloxi
J. L. Scott Marine Education Center	Biloxi
The Glenn L. Swetman & The Mike Sekul Schooners	Biloxi
Ohr-O'Keefe Museum of Art	Biloxi
The Maritime & Seafood Industry Museum	Biloxi
Moran's Art Studio and French Burial Site	Biloxi
Biloxi Mardi Gras Museum	Biloxi
Old Brick House	Biloxi
The Redding House	Biloxi
Saenger Theatre for the Performing Arts	Biloxi
St. Michaels Catholic Church	Biloxi
Tullis-Toledano Manor	Biloxi
West End Hose Company No. 3 Museum & Fire Education Center	Biloxi
Lynn Meadows Discovery Center	Gulfport
Armed Forces Retirement Home-Museum	Gulfport
CEC/Seabee Museum	Gulfport
Grass Lawn	Gulfport
Gillespie Art Gallery, William Carey College	Gulfport
Gulfport Centennial Museum	Gulfport
Mississippi Sound Maritime Historical Foundation & Museum	Gulfport
Ship Islands Excursions	Gulfport
Fort Massachusetts	Gulf Islands National Seashore
Bodine Pottery & Art Studio	Long Beach
Friendship Oak	Long Beach
Palestine Gardens	Lucedale
Gulf Islands National Seashore Visitors Center	Ocean Springs
Shearwater Pottery	Ocean Springs
Le Pointe Krebs House-Old Spanish Fort Museum	Pascagoula
Old Spanish Fort & Museum	Pascagoula
Scranton Museum (Commercial Shrimp Boat)	Pascagoula
Palace in the Pass (Historical Home)	Pass Christian

Margaret Reed Crosby Memorial Library	Picayune
The Crosby Arboretum	Picayune
Gulfside United Methodist Assembly	Waveland
Historic Waveland City Hall	Waveland

Annual Festivals

Professional Cowboys Association Finals	Biloxi	January
Mardi Gras Parade	Ocean Springs	January
Carnival Association of Long Beach Mardi Gras & Parade	Long Beach	February
Mississippi Coast History Week	Biloxi	February
Jackson County Ole Time Festival & Mule Pull	Vancleave	February
Gulf Coast Carnival Association Mardi Gras	Biloxi	March
Herb and Garden Fest	Ocean Springs	March
Mississippi Gulf Coast Spring Pilgrimage	Biloxi	March
Spring Pilgrimage	Ocean Springs	March
St. Patrick's Day Parade & Irish Heritage Celebration	Biloxi	March
Mississippi Gulf Coast Spring Pilgrimage	MS Gulf Coast	March-April
Old Brick House Twilight Time Jazz Concert	Biloxi	March-April
Jazz in the Grove	Bay Springs	April
MS Coast Coliseum Country Cajun Crawfish Festival	Biloxi	April
Re-enactment of Landing of d'Iberville in 1699	Ocean Springs	April-May
Biannual Tullis Manor Antiques & Collectibles Fair	Biloxi	April/October
Confederate Memorial Day	Biloxi	April
Blessing of the Biloxi Shrimp Fleet	Biloxi	April
Picayune Street Fair	Picayune	April
Earth Day Festival	Ocean Springs	April
Annual Renaissance Faire-St. John's Episcopal Church	Ocean Springs	April
Ocean Springs Pilgrimage	Ocean Springs	April
Celebrate the Gulf	Long Beach or Pass Christian	Spring
Billy Creel Memorial Wooden Boat Show	Biloxi	May
Jazz in the Pass	Pass Christian	May
Elks Fishing Rodeo	Ocean Springs	June
Blueberry Jubilee & Storytelling Festival	Poplarville	June
Magnolia State Bluegrass Festival	Wiggins	June
Mississippi Arts Fair for the Handicapped	Biloxi	June
Christmas in July Arts and Craft Show	Biloxi	July
I Love America (Patriotic Music & Fireworks)	Biloxi	July
Crab Festival	Bay St. Louis	July
Crab Festival	Waveland	July
Mississippi Deep Sea Fishing Rodeo	Gulfport	July
Art in the Pass	Pass Christian	September
Biloxi Seafood Festival	Biloxi	September
Mississippi Gulf Coast Blues and Heritage Festival	Pascagoula	September
St. Rose de Lima Fair	Bay St. Louis	September
Wave Fest	Waveland	September
Biloxi Seafood Festival	Biloxi	September
Art Walk	Ocean Springs	September

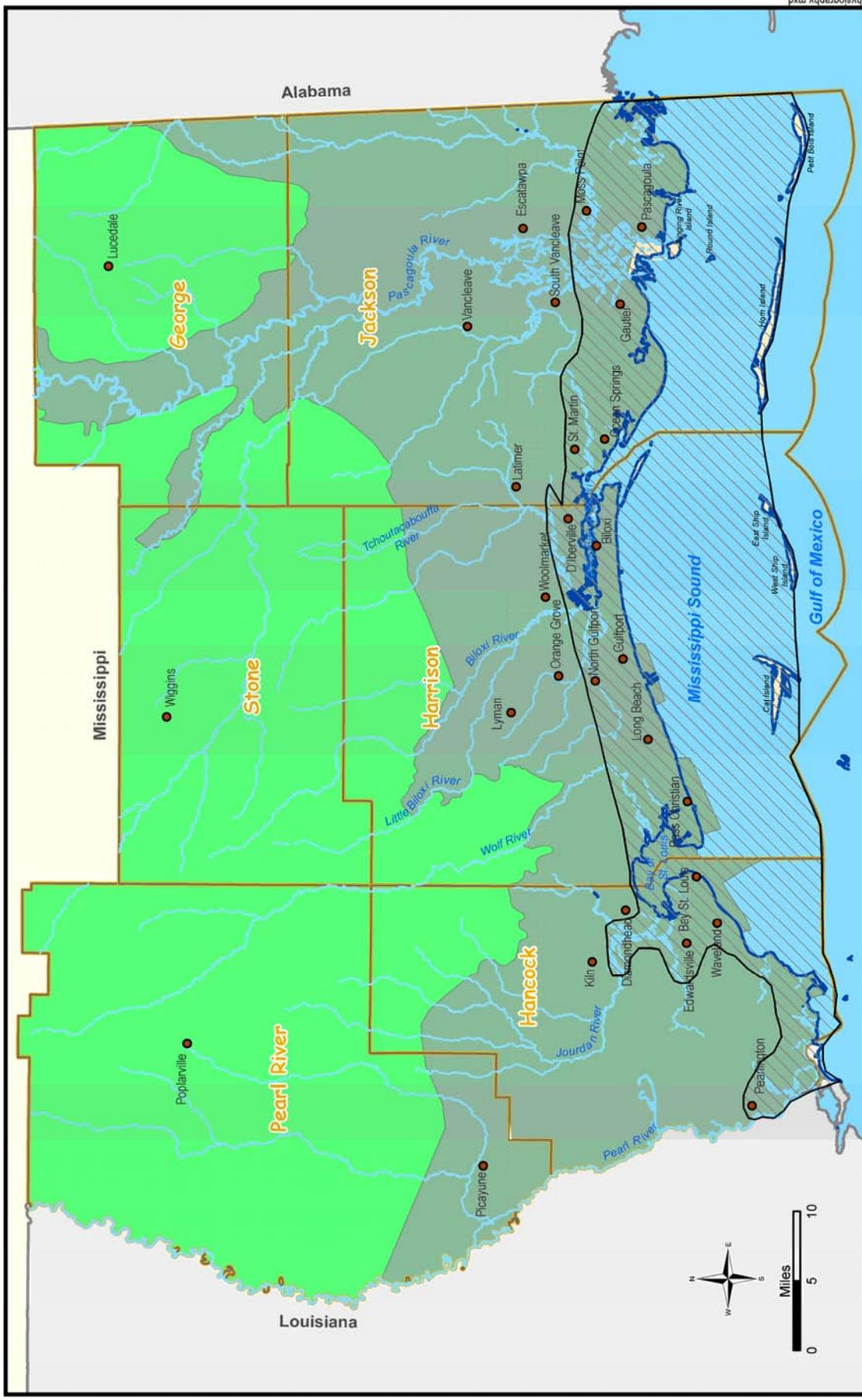
Beauvoir Fall Muster	Biloxi	October
Biloxi Highlands & Islands Scottish Games and Celtic Festival	Biloxi	October
Shane Smith Memorial Octoberlite Fly-In	Lucedale	October
Cedar Rest Cemetery Tour	Bay St. Louis	October
George E. Ohr Festival	Biloxi	October
Fall Muster - Beauvoir	Biloxi	October
Jackson County Fair	Pascagoula	October
French Colonial Living History Re-enactment	Ocean Springs	October
The Great Storytelling Festival	Ocean Springs	October
Cruisin' the Coast	Area wide	October
Peter Anderson Memorial Arts, Crafts & Food Festival	Ocean Springs	November
Picayune Street Fair	Picayune	November
Gingham Tree Arts & Crafts Festival	Lucedale	November
Highlands and Islands Scottish Games & Celtic Festival	Gulfport	November
Christmas on the Water	Biloxi	December
Ethnic Christmas Trees of Tullis	Biloxi	December
Festival of Trees & Lights & Parade	Biloxi	December
Lucedale Christmas Parade	Lucedale	December
Holiday Open House	Ocean Springs	December
Christmas in the Pass	Pass Christian	December
Christmas Festival of Lights	Gulfport	December-January
City of Waveland Festival of Lights & Santa Parade	Waveland	December

Sources: Mississippi.1.866.SEEMISS (733-6477) 2006 & 2007; Mississippi Gulf Coast Convention and Visitors Bureau 2006 & 2007; Hancock County Tourism Development Bureau 2006 & 2007.

APPENDIX C

SELECTED RESOURCE MAPS FROM ENVIRONMENTAL INVENTORY

**(MISSISSIPPI DEPARTMENT OF MARINE RESOURCES-COMPREHENSIVE
RESOURCE MANAGEMENT PLAN
AND COASTAL ENVIRONMENTS, INC. 2005)**



Source: County and Statewide Data, MARIS.

MS Gulf Coast National Heritage Area

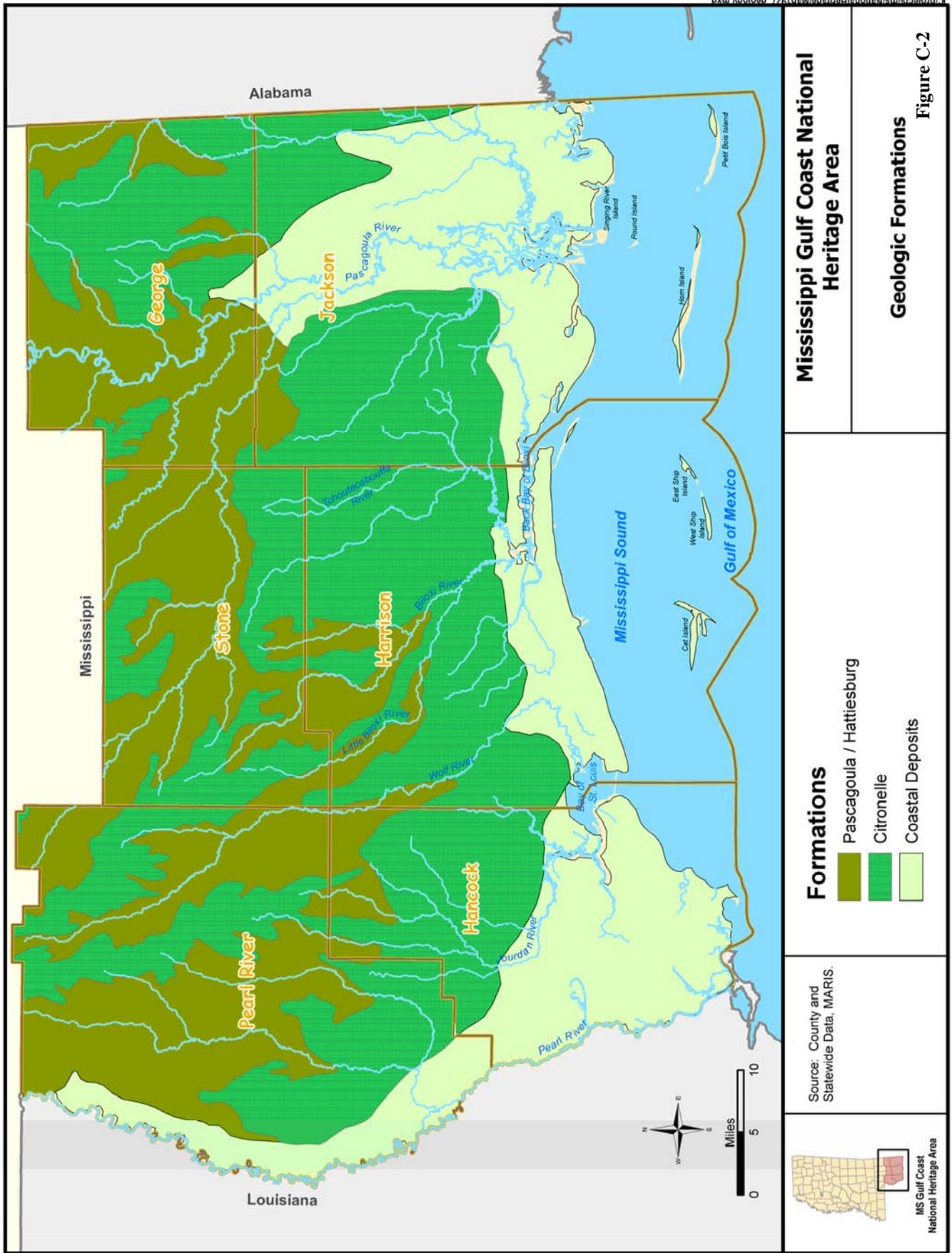
Physiographic Regions

- Coastal Terraces
- Active Shore Zone
- Pine Hills
- Offshore
- Shoreline

Mississippi Gulf Coast National Heritage Area

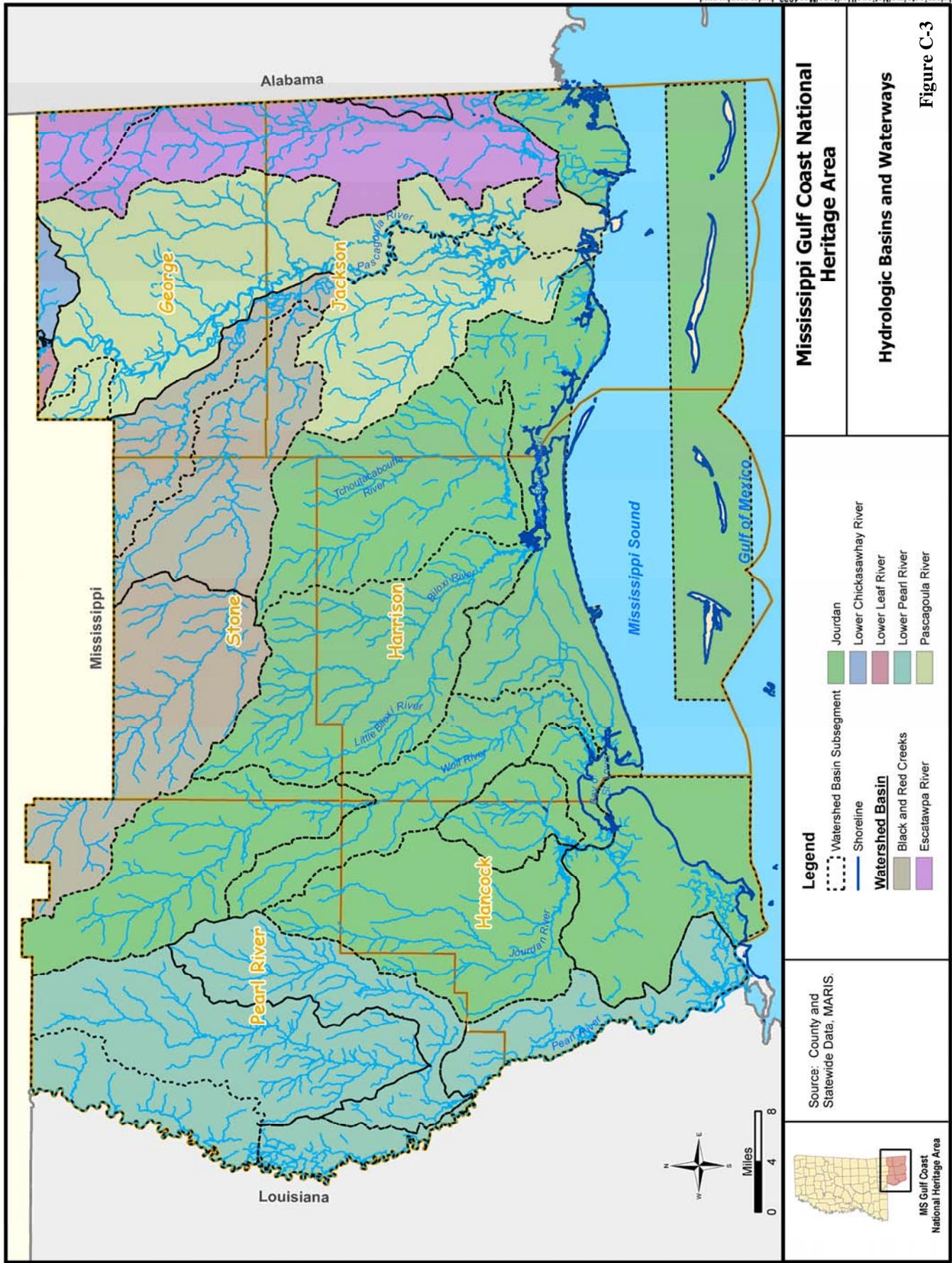
Physiographic Regions

Figure C-1

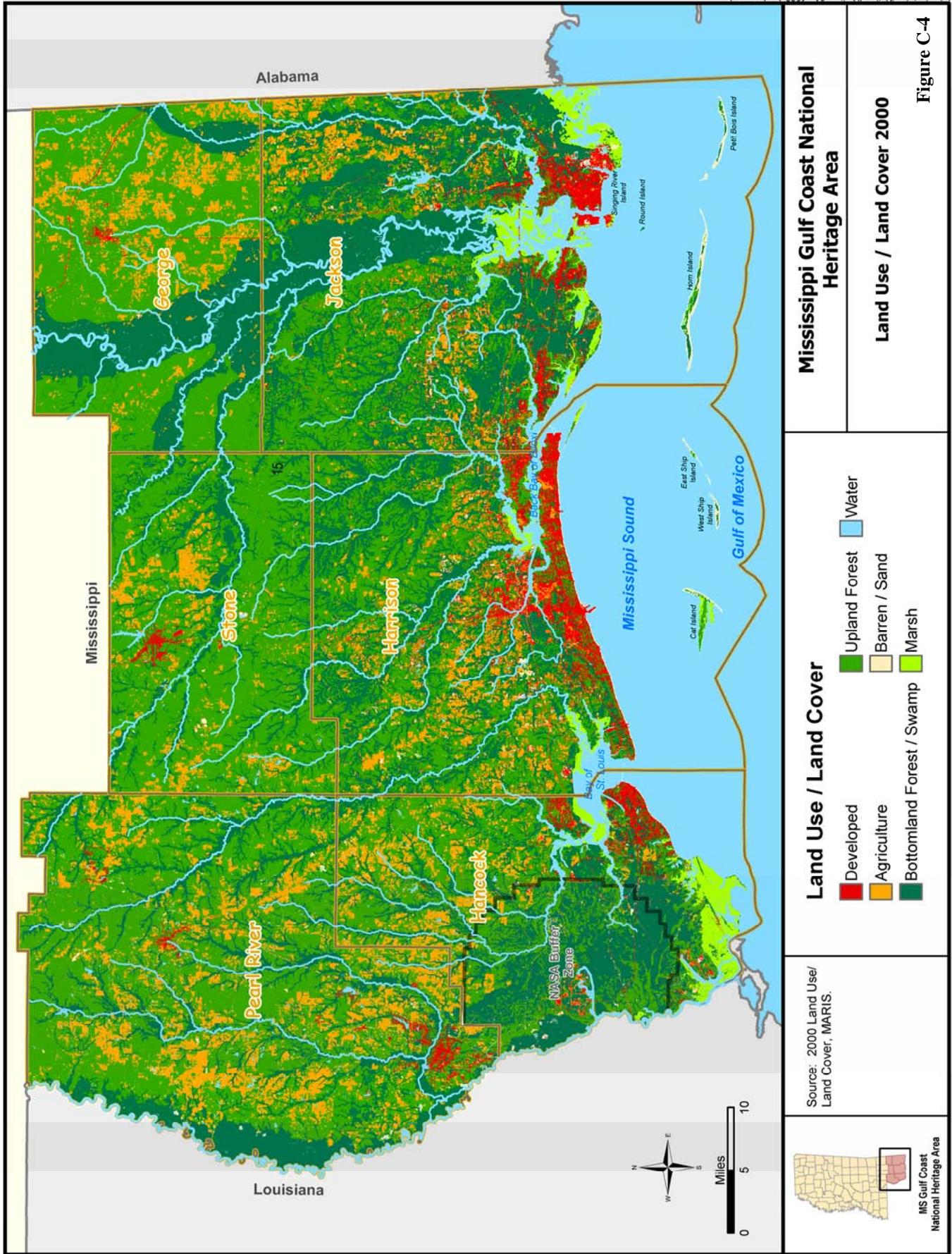


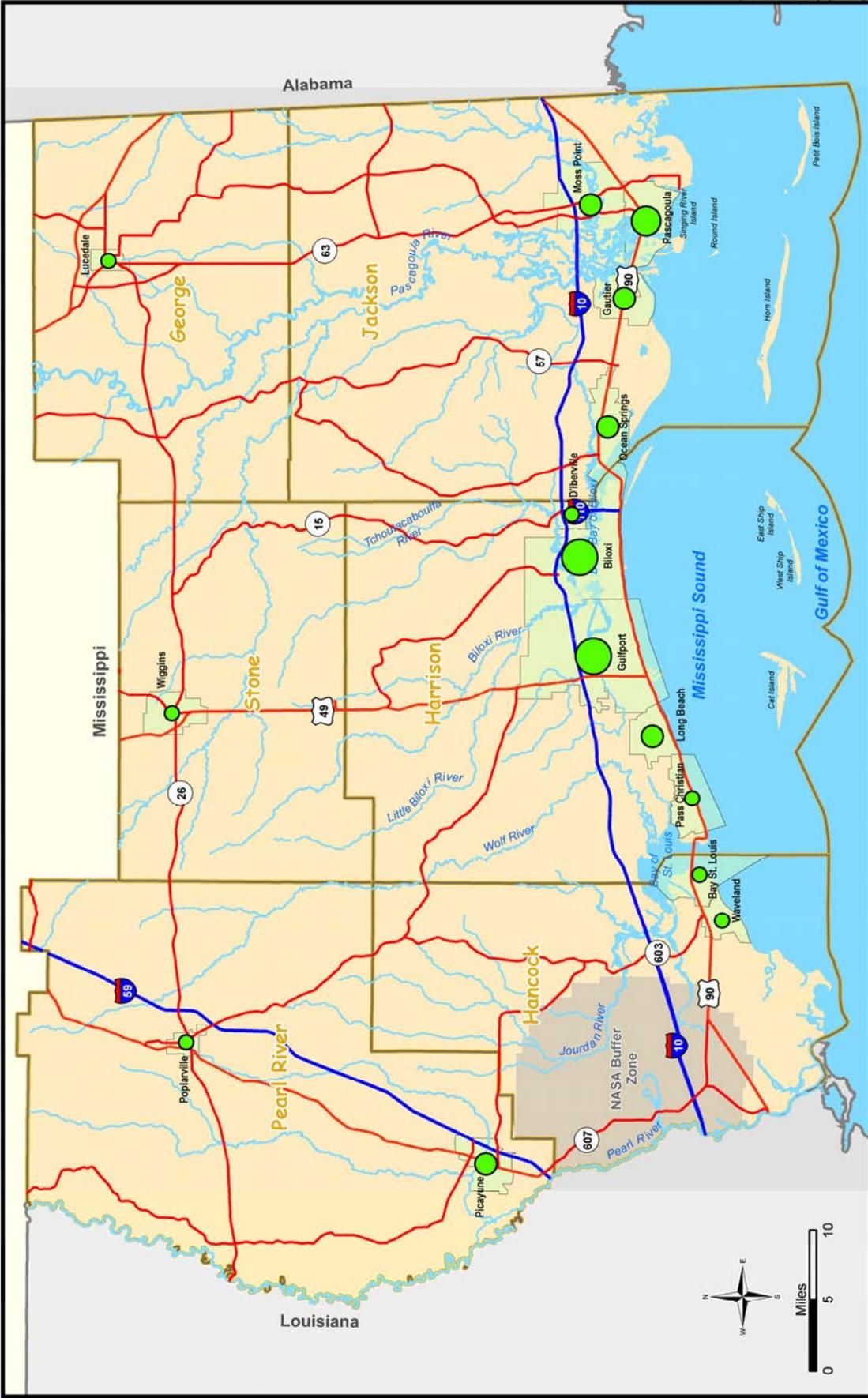
Mississippi Gulf Coast National Heritage Area

Geologic Formations
Figure C-2



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Mississippi Gulf Coast National Heritage Area

Incorporated Areas

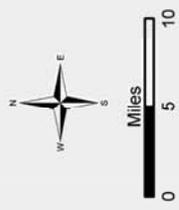
2000 Total Population

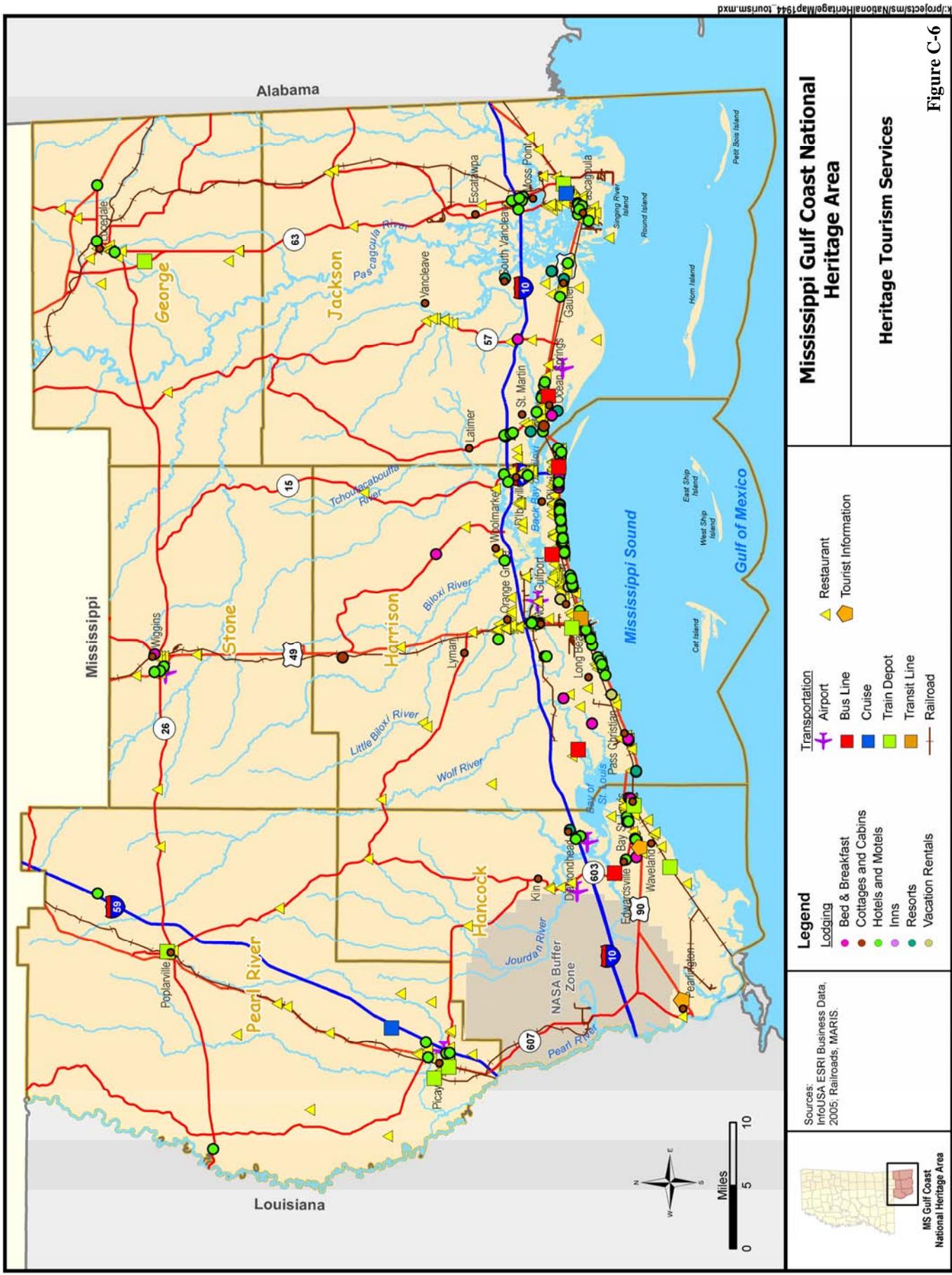
Figure C-5

Legend

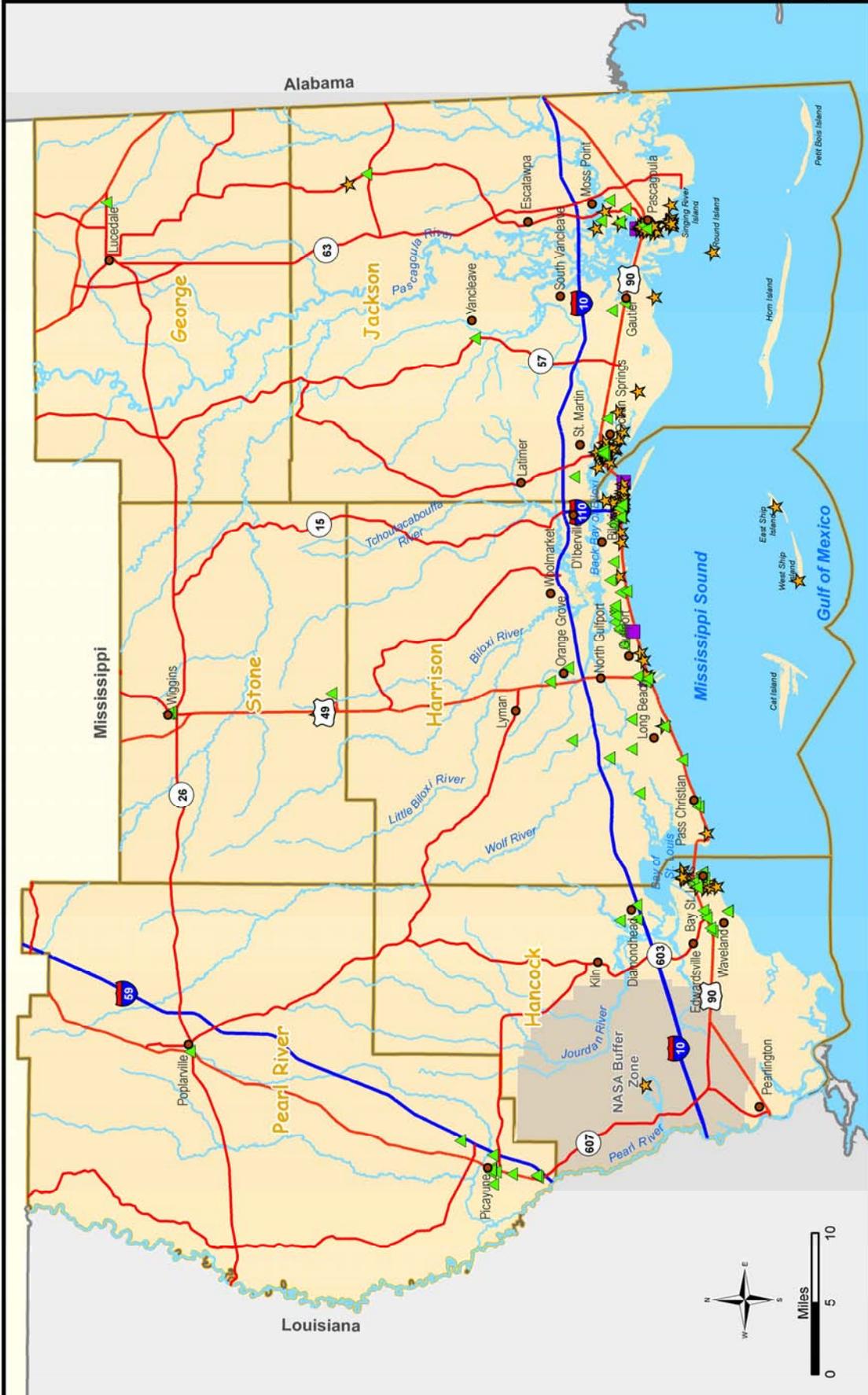
- Incorporated Area
- Less than 1001
- 1001 - 10,000
- 10,001 - 25,000
- 25,001 - 50,000
- 50,001 - 71,127

Source: InfoUSA ESRI Business Data, 2005





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Mississippi Gulf Coast National Heritage Area

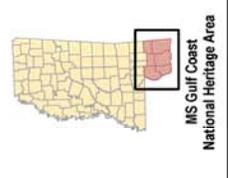
Cultural Resources

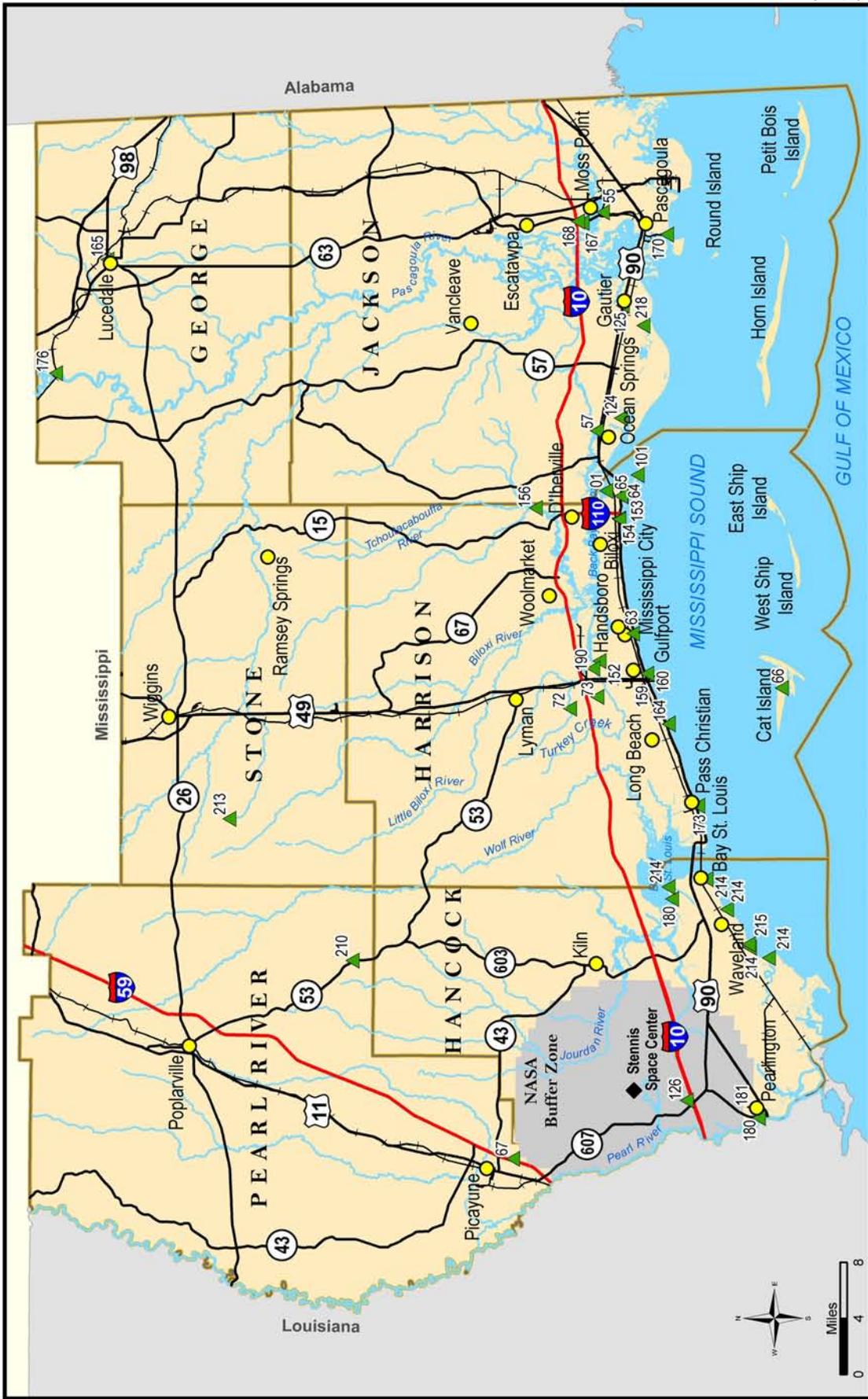
Figure C-7

Legend

- ▲ Art and Antique Galleries/Dealers
- ★ National Register Site
- Museum

Sources:
 Info USA ESRI Business Data,
 May 2005; National Historic
 Registry Sites, MARIS, 1998.





Source: County and Statewide Data, MARIS. CIAP Projects: MS Department of Marine Resources, 2007.



MS Gulf Coast National Heritage Area

Legend

- Interstate
- Federal Hwy
- State Hwy
- Railroad
- City
- CIAP Project

Mississippi Gulf Coast National Heritage Area

Coastal Impact Assistance Program Approved Projects - 2007

Figure C-8

APPENDIX D

TABLES RELATIVE TO HERITAGE AREA RESOURCES

TABLE D.1 RIVER BASINS AND MAJOR TRIBUTARIES IN THE MISSISSIPPI GULF COAST NATIONAL HERITAGE AREA (STROM 1988).

River Basin	Major Tributaries
Pascagoula River	
	Chunky River
	Chickasawhay River
	Buckatunna Creek
	Big Creek
	Gains Creek
	Thompson Creek
	Bogue Homom
	Talahala Creek
	Leaf River
	Okatoma Creek
	Bowie Creek
	Little Black Creek
	Black Creek
	Red Creek
	Escatawpa Creek
Pearl River	
	Strong River
	Yockanookany River
	West Hobolochitto Creek
	Bahala Creek
	Tuscolameia Creek
Coastal Streams	
	Wolf River
	Catahoula River
	Hickory Creek
	Bayou Bacon
	Jourdan River
	Bayou la Croix
	Little Biloxi River
	Biloxi River
	Tuxanchanie Creek
	Tchoutacabouffa River

TABLE D.2. TERRESTRIAL HABITATS AND REPRESENTATIVE VEGETATION (COE & TETRA TECH 2005, MS DEPT. OF MARINE RESOURCES 2004).

Habitat	Common Name	Scientific Name
<i>Upland Deciduous Forest</i>		
	American beech	<i>Fagus grandifolia</i>
	Southern magnolia	<i>Magnolia grandiflora</i>
	Oaks	<i>Quercus spp.</i>
	Maples	<i>Acer spp.</i>
	Blueberry shrubs	<i>Vaccinium spp.</i>
	Greenbriar shrubs	<i>Smilax spp.</i>
	Tulip poplar	<i>Liriodendron tulipifera</i>
	Swamp black gum	<i>Nyssa biflora</i>
	Sweetgum	<i>Liquidambar styraciflua</i>
	Loblolly pine	<i>Pinus taeda</i>
	Red maple	<i>Acer rubrum</i>
	Sweet gallberry	<i>Ilex coriacea</i>
	Pepperbush	<i>Clethra alnifolia</i>
	Buttonbush	<i>Cephalanthus occidentalis</i>
	Ferns	<i>Osmunda spp., Woodwardia spp.</i>
	Peat moss	<i>Sphagnum spp.</i>
	White oak	<i>Quercus alba</i>
	Water oak	<i>Quercus nigra</i>
	Laurel oak	<i>Quercus hemisphaerica</i>
	Sand hickory	<i>Carya pallida</i>
	Paw paw	<i>Asimina triloba</i>
	American holly	<i>Ilex opaca</i>
	Flowering dogwood	<i>Cornus florida</i>
	Grapevine	<i>Vitis rotundiflora</i>
	Virginia creeper	<i>Parthenocissus quinquefolia</i>
	Poison ivy	<i>Toxicodendron radicans</i>
	Cross-vine	<i>Bignonia capreolata</i>
<i>Upland Mixed Forest</i>		
	Loblolly pine	<i>Pinus taeda</i>
	Southern red oak	<i>Quercus falcata</i>
	White oak	<i>Quercus alba</i>
	Post oak	<i>Quercus stellata</i>
	Black oak	<i>Quercus velutina</i>
	Flowering dogwood	<i>Cornus florida</i>
	Hop-hornbean	<i>Ostrya virginiana</i>
	Black cherry	<i>Prunus serotina</i>
	Winged elm	<i>Ulmus alata</i>
	Sourwood	<i>Oxydendrum arboreum</i>
	Witch hazel	<i>Hamamelis virginiana</i>
	Wax myrtle	<i>Myrica cerifera</i>
	Blueberry	<i>Vaccinium spp.</i>

TABLE D.2. CONTINUED.

Habitat	Common Name	Scientific Name
	Grapevine	<i>Vitis rotundiflora</i>
	Longleaf spikegrass	<i>Chasmanthuim sessiliflorum</i>
	Slash pine	<i>Pinus elliotii</i>
	Longleaf pine	<i>Pinus palustris</i>
	Live oak	<i>Quercus virginiana</i>
	Sand live oak	<i>Quercus geminata</i>
	Laurel oak	<i>Quercus hemisphaerica</i>
	Yaupon	<i>Ilex vomitoria</i>
	Saw palmetto	<i>Serenoa repens</i>
	Wax myrtle	<i>Myrica cerifera</i>
	Greenbriar shrubs	<i>Smilax spp.</i>
Upland Pine Forest		
	Turkey oak	<i>Quercus laevis</i>
	Blue-jack oak	<i>Quercus incana</i>
	Sand live oak	<i>Quercus geminata</i>
	Sand post oak	<i>Quercus margareta</i>
	Little bluestem	<i>Schizachyrium scoparium</i>
	Three-awn grass	<i>Aristida spp.</i>
	Broom snoutbean	<i>Rhynchosia cytisoidea</i>
	Longleaf pine	<i>Pinus palustris</i>
	Southern red oak	<i>Quercus falcata</i>
	Water oak	<i>Quercus nigra</i>
	Flowering dogwood	<i>Cornus florida</i>
	Black gum	<i>Nyssa sylvanica</i>
	Red bay	<i>Persea borbonia</i>
	Blueberries	<i>Vaccinium spp.</i>
	Hollies	<i>Ilex spp.</i>
	Wax myrtle	<i>Myrica cerifera</i>
	Horse sugar	<i>Symplocos tinctoria</i>
	Grasses	<i>Aristida spp., Schizachyrium sp.</i>
	Sunflowers	<i>Asteraceae</i>
	Meadow-beauty	<i>Rhexia alifanus</i>
Upland/Wet Scub/Shrub		
	Black willow	<i>Salix nigra</i>
	Buttonbush	<i>Cephalanthus occidentalis</i>
	Sweetgum	<i>Liquidambar styraciflua</i>
	Red maple	<i>Acer rubrum</i>
	Stunted oak	<i>Quercus spp.</i>
	Yaupon	<i>Ilex vomitoria</i>
	Black needlerush	<i>Juncus roemarianus</i>
	Slash pine	<i>Pinus elliotii</i>
	Live oak	<i>Quercus virginiana</i>
	Sand live oak	<i>Quercus geminata</i>
	Wax myrtle	<i>Myrica cerifera</i>

TABLE D.2. CONTINUED.

Habitat	Common Name	Scientific Name
	Saw palmetto	<i>Serenoa repens</i>
	Salt bush	<i>Baccharis halimifolia</i>
	Black titi	<i>Cliftonia monophylla</i>
	Shining fetterbush	<i>Lyonia lucida</i>
	Blasphe-me-vine	<i>Smilax laurifolia</i>
	Longleaf pine	<i>Pinus palustris</i>
	Pitcher plants	<i>Sarracenia spp.</i>
	Bladderwort	<i>Utricularia sp.</i>
	Beakrush	<i>Rhynchospora sp.</i>
Bottomland Hardwood Forest/Swamp		
	Water tupelo	<i>Nyssa aquatica</i>
	Swamp black gum	<i>Nyssa biflora</i>
	Bald cypress	<i>Taxodium distichum</i>
	Green ash	<i>Fraxinus pennsylvanica</i>
	Black willow	<i>Salix nigra</i>
	Ironwood	<i>Carpinus caroliniana</i>
	Fetterbush	<i>Leucothoe racemosa</i>
	Titi	<i>Cliftonia spp.</i>
	Lizard's tail	<i>Saururus cernuus</i>
	Poison ivy	<i>Toxicodendron radicans</i>
	Cross-vine	<i>Bigonia capreolata</i>
	Planer tree	<i>Planera aquatica</i>
	Pepper-vine	<i>Ampelopsis arborea</i>
	Sweetbay	<i>Magnolia virginiana</i>
	Bayberry	<i>Morella spp.</i>
	Slash pine	<i>Pinus elliotii</i>
	Red maple	<i>Acer rubrum</i>
	Sweetgum	<i>Liquidambar styraciflua</i>
	Tulip poplar	<i>Liriodendron tulipifera</i>
	Loblolly pine	<i>Pinus taeda</i>
	Fetterbush	<i>Lyonia lucida</i>
	Titi	<i>Cyrilla racemiflora</i>
	Pepperbush	<i>Clethra alnifolia</i>
	Ferns	<i>Osmunda spp., Woodwardia spp.</i>
	Sedges	<i>Carex spp.</i>
	Beakrush	<i>Rhynchospora sp.</i>
	Louisiana quillwort	<i>Isoetes louisianensis</i>
Wet Pine Forest/ Pine Savannah		
	Longleaf pine	<i>Pinus palustris</i>
	Slash pine	<i>Pinus elliotii</i>
	Gallberry	<i>Ilex glabra</i>
	Pitcher plants	<i>Sarracenia alata, Sarracenia psittacina</i>
	Sundews	<i>Drosera sp.</i>
	Toothache grass	<i>Ctenium aromaticum</i>

TABLE D.2. CONTINUED.

Habitat	Common Name	Scientific Name
	Beakrush	<i>Rhynchospora chapmani</i>
	Gulf chaffhead	<i>Carphephorus pseudoliatris</i>
	Sunflowers	<i>Asteraceae</i>
	Milkworts	<i>Polygala spp.</i>
	Sedges	<i>Carex spp.</i>
Emergent Wetlands		
	Spikerushes	<i>Eleocharis spp.</i>
	Bullrushes	<i>Scirpus spp.</i>
	Wild rice	<i>Zizania aquatica</i>
	Lizard's tail	<i>Saururus cernuus</i>
	Marsh fleabane	<i>Pluchea purpuraascens</i>
	Knottweeds	<i>Polygonum spp.</i>
	Black needlerush	<i>Juncus roemarianus</i>
	Common reed	<i>Phragmites communis</i>
	Sawgrass	<i>Cladium jamaicense</i>
	Knotweed	<i>Sagittaria lancifolia</i>
	Cordgrass	<i>Spartina patens, Spartina alterniflora</i>
	Sea lavender	<i>Limonium carolinianum</i>
	Salt marsh aster	<i>Aster tenuifolius</i>
	Annual glasswort	<i>Salicornia bigelovii</i>
	Sea blites	<i>Suaeda linearis</i>
	Saltwort	<i>Batis maritimus</i>
Swamp forests		
	Cypress	<i>Taxodium spp.</i>
	Tupelo	<i>Nyssa spp.</i>
	Swamp red maple	<i>Acer rubrum</i>
	Pumpkin ash	<i>Fraxinus spp.</i>
	Black willow	<i>Salix nigra</i>
	Water elm	<i>Ulmus sp.</i>
	Water locust	<i>Gleditsia aquatica</i>
	Cinnamon fern	<i>Osmunda cinnamomea</i>
Bayheads		
	Sweetbay	<i>Magnolia virginiana</i>
	Blackgum	<i>Nyssa sylvatica</i>
	Swamp Blackgum	<i>Nyssa aquatica</i>
	Red bay	<i>Persea borbonia</i>
	Laurel oak	<i>Quercus laurifolia</i>
	Red maple	<i>Acer rubrum</i>
	Sweet gum	<i>Liquidambar styraciflua</i>
	Water oak	<i>Quercus nigra</i>
	Southern magnolia	<i>magnolia grandiflora</i>
	Swamp tupelo	<i>Nyssa aquatica</i>
	Bald cypress	<i>Taxodium distichum</i>
	Pond cypress	<i>Taxodium distichum nutans</i>
	Slash pine	<i>Pinus elliottii</i>
	Longleaf pine	<i>Pinus palustris</i>

TABLE D.2. CONCLUDED.

Habitat	Common Name	Scientific Name
	Dogwood	<i>Cornus sp.</i>
	Wild azaleas	<i>Rhododendron sp.</i>
	Greenbriers	<i>Smilax spp.</i>
	Climbing hydrangea	<i>Hydrangen sp.</i>
	Wild grapes	<i>Vitis sp.</i>
	Virginia creeper	<i>Parthenocissus quinquefolia</i>
Maritime Forest and Cheniers	Slash pine	<i>Pinus elliotii</i>
	Live oak	<i>Quercus virginiana</i>
	Cabbage palm	<i>Sabal palmetto</i>
	Redbay	<i>Persea borbonia</i>
	American holly	<i>Ilex opaca</i>
	Southern magnolia	<i>Magnolia grandiflora</i>
	Red cedar	<i>Juniperus virginiana</i>
	Sea grape	<i>Coccoloba uvifera</i>
	Wild olive	<i>Osmanthus americanus</i>
	Saw palmetto	<i>Serenoa repens</i>
	Beautyberry	<i>Callicorpa sp.</i>
	Poison ivy	<i>Toxicodendron Radicans</i>
	Coral bean	<i>Erythrina flabelliformis</i>
	Ferns	<i>Osmunda regalis, Woodwardia virginica</i>
	False indigo	<i>Baptistia sp.</i>

TABLE D.3. BIRDS OF THE MISSISSIPPI COASTAL COUNTIES (MISSISSIPPI COAST AUDUBON SOCIETY 2006)



Birds of the Mississippi Coastal Counties
 George, Jackson, Hancock, Harrison, Stone, and Pearl River Counties
 387 birds - Arrangement and nomenclature follow that of the 47th Supplement to the A.O.U. Check-List of North American Birds

Locality _____ Observers: _____
 Date: _____ Time _____ Weather: _____
 Notes:
 1-Breeding confirmed/documentated
 2-Breeding noted/undocumentated
 3-Breeding historical
 4-Extirpated/Extinct
 5-MOS review species
 [] Undocumentated by specimen or photograph in the checklist area

Particular attention should be given to all R, CA, or A occurrence, and species for which nesting has not been documented. Address such information to: Paul Hamel, USDA Forest Service, Center for Botaniand Hardwoods Research, P.O. Box 227, Stoneville, MS 38776

Species	Sp	Su	F	W	Species	Sp	Su	F	W	Species	Sp	Su	F	W	Species	Sp	Su	F	W
GESE, SWANS & DUCKS					IBISES & SPOONBILLS					Species					Species				
Black-bellied Whistling-Duck ⁵	A				White Ibis	F	F	F	A	Purple Gallinule ¹	F	F	F	A	Buff-breasted Sandpiper	U	A	U	A
Fulvous Whistling-Duck ⁵	CA				Glossy Ibis ⁵	R	R	R	R	Common Moorhen ¹	C	C	C	C	[Ruff] ⁵				
Greater White-fronted Goose	R	F	U		White-faced Ibis ⁵	R	R	R	R	American Coot ¹	C	R	C	C	Short-billed Dowitcher	C	R	C	F
Snow Goose	U	C	U		Roseate Spoonbill	A	R	A	R	CRANES					Long-billed Dowitcher	C	R	C	U
Ross's Goose	A	A	A		STORKS					Sandhill Crane ¹	U	U	U	U	Wilson's Snipe	C	C	C	C
[Brant] ⁵	A				Wood Stork					PLOVERS					American Woodcock ²	R	A	R	R
Canada Goose ¹	C	C	C	C	Black-necked Grebe ⁵	F	R	C	C	Black-bellied Plover	C	R	C	C	Wilson's Phalarope ⁵	F	C	A	U
[Tundra Swan] ⁵	A				Eared Grebe	R	R	R		American Golden-Plover	F	A	U	U	Red-necked Phalarope ⁵	CA	CA		
Wood Duck ¹	C	C	C	C	SEARWATERS					Snowy Plover ¹	U	U	U	U	Wilson's Phalarope ⁵	CA	CA		
Gadwall	C	C	C	C	Greater Shearwater ⁵	A	A			Wilson's Plover ¹	U	U	U	U	Red Phalarope ⁵	CA	CA		
[Eurasian Wigeon] ⁵	A				[Sooty Shearwater] ⁵	A	A			Semipalmated Plover	C	R	C	C	JAEGERS, GULLS, TERNS & SKIMMERS				
American Wigeon	U	U	U		[Audubon's Shearwater] ⁵	A	A			Piping Plover	R	R	U	U	Laughing Gull ¹	C	C	C	C
American Black Duck	CA	C	A		[Wilson's Storm-Petrel] ⁵	A	A			Killdeer ¹	C	F	C	C	Franklin's Gull	A	F		
Mallard ¹	U	U	F	F	STORM-PETRELS					Swallow-tailed Kite ¹	F	F	F	F	Little Gull ⁵	A			
Mottled Duck ¹	C	C	C	C	[Wilson's Storm-Petrel] ⁵	A	A			White-tailed Kite ^{3,5}	A	A	A	A	[Black-headed Gull] ⁵	A			
Blue-winged Teal ³	C	C	C	C	BOOBIES & GANNETS					Mississippi Kite ¹	F	F	R		Bonaparte's Gull	C	C	C	
Cinnamon Teal ⁵	C	R	C	C	Maskee Booby ⁵	A				Bald Eagle ¹	U	U	U	U	Ring-billed Gull	C	R	C	C
Northern Shoveler	C	R	C	C	PELICANS					Northern Harrier	U	F	F		[California Gull] ⁵	CA			
Northern Pintail	F	A	F	F	American White Pelican	F	R	F	F	Sharp-shinned Hawk ³	F	F	F		Herring Gull	C	R	C	C
Green-winged Teal	C	A	C	C	Brown Pelican	C	C	C	C	Cooper's Hawk ¹	U	R	F	F	Thayer's Gull ⁵	A			
Canvasback	R	U	U	U	CORMORANTS					[Northern Goshawk] ⁵	U	R	F	F	Lesser Black-backed Gull ⁵	A			
Redhead	U	A	F	F	Neotropic Cormorant ⁵	A	A			Harris's Hawk ⁵	A	A			Glaucous Gull ⁵	CA			
Ring-necked Duck	C	C	C	C	Double-crested Cormorant	C	R	C	C	Red-shouldered Hawk ¹	C	C	C	C	Greater Yellowlegs	C	F	C	U
Greater Scaup	R	A	U	U	[Great Cormorant] ⁵	CA	C	A	C	Broad-winged Hawk ¹	F	F	C		Willlet ¹	C	F	C	C
Lesser Scaup	C	R	C	C	ANHINGAS					Swainson's Hawk ⁵	CA	R	A		Lesser Yellowlegs	C	U	C	U
King Eider ⁵	C	R	C	C	Anhinga ¹	U	U	R	R	Red-tailed Hawk ¹	C	U	C	C	Upland Sandpiper	U	U		
Surf Scoter	R	U	U	U	FRIGATEBIRDS					[Ferruginous Hawk] ⁵	A	A			Whimbrel	U	U		
White-winged Scoter	R	U	U	U	Magnificent Frigatebird	U	F	F	R	[Rough-legged Hawk] ⁵	A	A			Long-billed Curlew	R	C	A	R
Black Scoter	R	U	U	U	BITTERNS & HERONS					Golden Eagle	C	A	C	A	Hudsonian Godwit ⁵	A	A		
Long-tailed Duck	U	A	U	U	American Bittern	U	A	U	U	Crested Caracara ⁵	A	A			Marbled Godwit	U	U	U	U
Bufflehead	CA	C	C		Least Bittern ¹	F	F	F	R	American Kestrel ¹	U	R	C	C	Ruddy Turnstone	C	R	C	C
Common Goldeneye	U	F	F		Great Blue Heron ¹	C	C	C	C	Merlin	R	U	R		Red Knot	U	R	U	U
Hooded Merganser ¹	U	R	F	F	Great Egret ¹	C	C	C	C	Peregrine Falcon	R	U	R		Sanderling	C	R	C	C
Common Merganser ⁵	C	A			Snowy Egret ¹	C	C	C	C	[Prairie Falcon] ⁵	A				Semipalmated Sandpiper	C	R	C	C
Red-breasted Merganser	C	R	C	C	Little Blue Heron ¹	C	C	C	C	RAILS, GALLINULES, & COOTS					Least Sandpiper	C	R	C	F
Ruddy Duck ³	C	R	C	C	Tricolored Heron	U	F	F	U	Yellow Rail ⁵	CA	C	A	C	White-rumped Sandpiper	F	R		
TURKEYS					Reddish Egret	U	F	F	U	Black Rail ⁵	CA	A	C	A	Baird's Sandpiper	R	R		
Wild Turkey ¹	U	U	U	U	Cattle Egret ¹	C	C	C	C	Clapper Rail ¹	C	C	C	C	Pectoral Sandpiper	C	R	C	A
QUAIL					Green Heron ¹	C	C	C	R	King Rail ¹	F	F	F	F	Purple Sandpiper ⁵	A	CA		
Northern Bobwhite ¹	F	F	F	F	Black-crowned Night-Heron ¹	F	F	F	F	Virginia Rail	F	F	F	F	Dunlin	C	R	C	C
					Yellow-crowned Night-Heron	C	C	C	R	Sora	C	A	C	C	Silt Sandpiper	F	R	F	C

TABLE D.3. CONCLUDED.

Species	Sp	Su	F	W	Species	Sp	Su	F	W	Species	Sp	Su	F	W	Species	Sp	Su	F	W	Species	Sp	Su	F	W		
PIGEONS & DOVES																										
Rock Pigeon ¹	C	C	C	C	Pileated Woodpecker ¹	R	R	R	R	Red-breasted Nuthatch	R	R	R	R	Black-throated Blue Warbler	R	R	R	R	Nelson's Sharp-tailed Sparrow	F	F	F	F	F	
White-crowned Pigeon ⁵	A				Ivory-billed Woodpecker ⁴	A	A	A	A	White-breasted Nuthatch	A	A	A	A	Yellow-rumped Warbler	C	C	C	C	Seaside Sparrow ¹	C	C	C	C	C	
[Band-tailed Pigeon] ⁵	A				TYRANT FLYCATCHERS					Brown-headed Nuthatch ¹	C	C	C	C	[Black-throated Gray Warbler] ⁵	A	A	A	A	Fox Sparrow	U	U	U	U	U	
Eurasian Collared-Dove ¹	C	C	C	C	Olive-sided Flycatcher	R				CREEPERS					Black-throated Green Warbler	F	F	F	F	Song Sparrow	C	C	C	C	C	
White-winged Dove ¹	F	F	F	F	[Western Wood-Pewee] ⁵	A				Brown Creeper	R	U	U	U	Townsend's Warbler ⁵	A	A	A	A	Lincoln's Sparrow	R	C	U	R	R	
Mourning Dove ¹	C	C	C	C	Eastern Wood-Pewee	C	C	C	C	WRENS					Blackburnian Warbler	F	F	F	F	Swamp Sparrow	C	C	C	C	C	
[Inca Dove] ³	A				Yellow-bellied Flycatcher	CA	U			Carolina Wren ¹	C	C	C	C	Yellow-throated Warbler ¹	F	U	F	R	White-throated Sparrow	C	A	C	C	C	
Common Ground-Dove ¹	U	U	U	U	Acadian Flycatcher ¹	C	C	C	C	Bewick's Wren	A	CACA			Pine Warbler ¹	C	C	C	C	Harris's Sparrow ⁵	R	U	R	U	R	
CUCKOOS & ANIS					Alder Flycatcher ⁵	CA	R			House Wren	C	C	C	C	Prairie Warbler	F	F	U	U	White-crowned Sparrow	R	U	R	U	R	
Yellow-billed Cuckoo ¹	F	F	F	F	Willow Flycatcher ⁵	CA	R			Winter Wren	R	U	U	U	Bay-breasted Warbler	C	C	C	C	Dark-eyed Junco	U	F	F	F	F	
Black-billed Cuckoo	R	R			Least Flycatcher	R	U			Sedge Wren	C	C	C	C	Blackpoll Warbler	U	A	A	A	Lapland Longspur	U	F	F	F	F	
Groove-billed Ani	U	U			Eastern Phoebe	C	C	C	C	Marsh Wren ¹	C	C	C	C	Conular Warbler	U	U	U	U	CARDINALS, GROSBEAKS & ALLIES						
BARN OWLS					Vermilion Flycatcher	R	R			KINGLETS					Black-and-white Warbler	C	C	C	CA	Northern Cardinal ¹	C	C	C	C	C	
Barn Owl ¹	F	F	F	F	Ash-throated Flycatcher ⁵	CA	CACA			Golden-crowned Kinglet	U	F	F	F	American Redstart ¹	C	C	CA	CA	Rose-breasted Grosbeak	C	A	C	A	C	
TYPICAL OWLS					Great Crested Flycatcher ¹	C	C	C		Ruby-crowned Kinglet	C	C	C	C	Prothonotary Warbler ¹	C	C	C	CA	Black-headed Grosbeak ⁵	A	A	A	A	A	
Eastern Screech-Owl ¹	C	C	C	C	[Sulphur-bellied Flycatcher] ⁵	CA	U	CA		GNATCATCHERS					Warm-eating Warbler	C	C	C	C	Blue Grosbeak ¹	C	C	C	C	C	
Great Horned Owl ¹	C	C	C	C	Western Kingbird	CA	U	CA		Blue-gray Gnatcatcher ¹	C	F	C	U	Swainson's Warbler ¹	U	U	U	U	Indigo Bunting ¹	C	C	C	A	A	
Burrowing Owl ⁵	CA				Eastern Kingbird	C	C	C		THRUSHES					Ovenbird	F	C	C	C	Painted Bunting ¹	F	F	U	U	F	
Barred Owl ¹	C	C	C	C	Gray Kingbird ^{3,5}	CACA	A			Eastern Bluebird ¹	C	C	C	C	Northern Waterthrush	C	C	C	C	Dickcissel ³	F	CA	U	R	R	
Short-eared Owl	R				Scissor-tailed Flycatcher	CA	U	CA		Veery	C	C			Louisiana Waterthrush	C	CA	F		BLACKBIRDS & ALLIES						
NIGHTHAWKS & NIGHTJARS					SHRIKES					Gray-cheeked Thrush	F	F			Kentucky Warbler ¹	F	U	U	U	Bobolink	C	CA	A	A	A	
[Lesser Nighthawk] ⁵	A				Loggerhead Shrike ¹	F	U	C	C	Swainson's Thrush	C	C			[Connecticut Warbler] ⁵	F	U	U	U	Red-winged Blackbird ¹	C	C	C	C	C	
Common Nighthawk ¹	C	C	C		VIREOS					Hermit Thrush	F	C	F		Mourning Warbler	A	CA			Eastern Meadowlark ¹	C	C	C	C	C	
Chuck-will's-widow ¹	F	F	F	R	White-eyed Vireo ¹	C	C	C	U	Wood Thrush ¹	C	F	F		Common Yellowthroat ¹	C	C	C	U	Western Meadowlark ⁵	C	C	C	C	C	
Whip-poor-will	U	U	U		Bell's Vireo ⁵	A	CA			American Robin ¹	C	R	C	C	Hooded Warbler	C	C	C	U	Yellow-headed Blackbird	CA	A	R	R	R	
SWIFTS					[Black-capped Vireo] ⁵	A				Gray Catbird ¹	C	R	C	C	Wilson's Warbler	R	U	U	U	Rusty Blackbird	U	U	U	U	U	
Chimney Swift ¹	C	C	C		Yellow-throated Vireo ¹	C	F	C		Northern Mockingbird ¹	C	C	C	C	Canada Warbler	U	U	U	U	Brewer's Blackbird	U	U	U	U	U	
HUMMINGBIRDS					Blue-headed Vireo	F	F	F		Brown Thrasher ¹	C	C	C	C	[Painted Redstart] ⁵	A				Common Grackle ¹	C	C	C	C	C	
Broad-billed Hummingbird ⁵	A				Warbling Vireo	CA	R			STARLINGS					Yellow-breasted Chat ¹	C	C	C	C	Boat-tailed Grackle ¹	C	C	C	C	C	
White-eared Hummingbird ⁵	A				Philadelphia Vireo	R	U			European Starling ¹	C	C	C	C	TANAGERS					Summer Tanager ¹	C	C	C	R	R	
Buff-bellied Hummingbird	U	U			Red-eyed Vireo	C	C	C		American Pipit	U	F	F		Scarlet Tanager	C	C			Western Tanager ⁵	C	C			CA	
Ruby-throated Hummingbird ¹	CA	A	CA		[Black-whiskered Vireo] ⁵	CA	A			Sprague's Pipit ⁵	CACA				SPARROWS					Green-tailed Towhee ⁵	A	A	A	A	A	
Black-chinned Hummingbird	A	R			JAYS & CROWS					Cedar Waxwing	C	C	C		Eastern Towhee ¹	C	C	C	U	Bachman's Sparrow ⁵	U	U	U	U	U	
Anna's Hummingbird ⁵	A	A			Blue Jay ¹	C	C	C	C	WOOD-WARBLERS					Chipping Sparrow ³	C	A	C	C	American Tree Sparrow ⁵	C	A	C	C	C	
Calliope Hummingbird ⁵	A	CA			American Crow ¹	C	C	C	C	Bachman's Warbler ⁴	C	C			Clay-colored Sparrow	U	A	CA	A	House Finch ¹	C	C	C	C	C	
Broad-tailed Hummingbird ⁵	CA	A	CA		Fish Crow ¹	C	C	C	C	Blue-winged Warbler	R	R			Field Sparrow ³	U	A	F	U	Pine Siskin	R	U	U	U	U	
Rufous Hummingbird	CA	A	CA		LARKS					Golden-winged Warbler	C	C	C		Vesper Sparrow	U	A	U	U	American Goldfinch	C	C	C	C	C	
Allen's Hummingbird ⁵	CA	CA			[Horned Lark]	A				Tennessee Warbler	C	CA			Lark Sparrow	U	U	U	U	Evening Grosbeak	CA	CA			CA	
KINGFISHERS					Purple Martin ¹	C	C	C		Orange-crowned Warbler	F	C	U		Lark Sparrow	U	A	R	CA	Swainson's Sparrow	C	C	C	C	C	
Belted Kingfisher ¹	C	C	U	C	Tree Swallow	C	C	C		Nashville Warbler	A	R			Lark Sparrow	U	U	U	U	Lark Bunting ⁵	A	A	A	A	A	
WOODPECKERS					Northern Rough-winged Swallow ¹	C	C	C	CA	Northern Parula ¹	C	C	C		Yew Sparrow	U	U	U	U	Savannah Sparrow	C	C	C	C	C	
Red-headed Woodpecker ¹	C	C	U	C	Bank Swallow	F	F			Yellow Warbler	C	R	C	A	Chestnut-sided Warbler	C	C			Grasshopper Sparrow	R	U	U	U	U	
Red-bellied Woodpecker ¹	C	C	U	C	Cliff Swallow ¹	C	C	C		Cape May Warbler	R	CA			Henslow's Sparrow	R	U	U	U	Le Comte's Sparrow	R	U	U	U	U	
Yellow-bellied Sapsucker	F	C	F		Cave Swallow ⁵	C	C	C		NUTHATCHES																
Dowry Woodpecker ¹	C	C	C	C	Barn Swallow ¹	C	C	C	R																	
Hairy Woodpecker ¹	R	R	R	U	TITMICE					Carolina Chickadee ¹	C	C	C	C												
Red-cockaded Woodpecker ¹	R	R	R	U	Tufted Titmouse ¹	C	C	C	C																	
Northern Flicker ¹	C	F	F	C	NUTHATCHES																					

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TABLE D.4. FEDERAL STATUS OF THREATENED AND ENDANGERED SPECIES BY COUNTY IN MISSISSIPPI GULF COAST NATIONAL HERITAGE AREA (MISSISSIPPI NATURAL HERITAGE PROGRAM 2007, USFWS 2007, CHANDLER 2007).

Species Name	Common Name	Federal Status	County
Fauna			
<i>Acipenser oxyrinchus desotoi</i>	Gulf sturgeon	T	George, Hancock, Harrison, Jackson, Pearl River
<i>Caretta caretta (P)</i>	Loggerhead; Cabezon	T	Hancock, Harrison, Jackson
<i>Charadrius melodus</i>	Piping plover*	TCH	Hancock, Harrison, Jackson
<i>Chelonia mydas (P)</i>	Green turtle	T	Hancock, Harrison, Jackson
<i>Drymarchon corais couperi (P)</i>	Eastern indigo snake	T	George, Harrison, Jackson, Stone
<i>Gopherus polyphemus</i>	Gopher tortoise	T	George, Hancock, Harrison, Jackson, Pearl River, Stone
<i>Gratemys flavimaculata</i>	Yellow-blotched map turtle	T	George, Jackson, Stone
<i>Graptemys oculifera</i>	Ringed map turtle	T	Pearl River
<i>Grus canadensis pulla</i>	Mississippi sandhill crane	ECH	Jackson
<i>Haliaeetus leucocephalus*</i>	Bald eagle**	T	Hancock, Harrison, Jackson, Pearl River, Stone, George
<i>Lepidochelys kempii (P)</i>	Kemp's or Atlantic Ridley	E	Hancock, Harrison, Jackson
<i>Pelecanus occidentalis</i>	Brown pelican	E	Hancock, Harrison, Jackson
<i>Percina aurora</i>	Pearl darter (Pascagoula R.)	C	George, Jackson
<i>Picoides borealis</i>	Red-cockaded woodpecker	E	George, Harrison, Jackson, Stone
<i>Pituophis melanoleucus ssp. lodingi</i>	Black pine snake	C	George, Pearl River, Stone
<i>Potamilus inflatus (P)</i>	Inflated heelsplitter	T	Hancock, Pearl River
<i>Pseudemys alabamensis</i>	Alabama red-bellied turtle	E	Hancock, Harrison, Jackson
<i>Rana capito sevosia (DPS)</i>	Dark gopher frog (Mississippi gopher frog)	E	Harrison, Jackson
<i>Trichechus manatus (P)</i>	West Indian Manatee	E	Hancock, Harrison, Jackson
<i>Ursus americanus luteolus</i>	Louisiana black bear	T	Hancock, Harrison, George, Jackson, Pearl River, Stone
Flora			
<i>Isoetes louisianensis (P)</i>	Louisiana quillwort	E	George, Hancock, Harrison, Jackson, Pearl River, Stone

T= Threatened, E= Endangered, C=Candidate, P=Potential to Occur, TCH / ECH = listed with critical habitat.

* Piper plover critical habitat on barrier islands and in certain coastal counties.

** Bald eagle: delisted from List of Endangered and Threatened Species on Aug. 8, 2007; still protected under Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act.

TABLE D.5. POPULATION AND TRENDS WITHIN THE MISSISSIPPI GULF COAST NATIONAL HERITAGE AREA.

COUNTY	1990	2000	% Change 1990-2000	Pre-Katrina Jan. 2005	% Change 2000-2005	Post-Katrina Oct. 2005	% Change Jan. - Oct. 2005	Jan. 2006	% Change Oct. 2005 - Jan. 2006	July 2006	% Change 2000 - July 2006	Project Jan. 2007	% Change 2000 - Jan. 2012	Projected Jan. 2012	% Change 2000 - Jan. 2012
Hancock	31,760	42,967	+35.2%	46,002	+7%	30,409	-34%	36,018	+18%	38,018	-12%	39,146	-9%	47,925	+12%
Harrison	165,365	189,601	+15%	189,444	0%	178,466	-6%	175,758	-2%	177,149	-7%	179,108	-6%	194,674	+3%
Jackson	115,243	131,420	+14%	134,950	+3%	121,187	-10%	129,314	+7%	130,599	-1%	131,293	0%	136,788	+4%
Total	312,368	363,988	+17%	370,396	+2%	330,062	-11%	341,090	+3%	345,766	-5%	349,547	-4%	379,387	+4%
George	16,673	19,144	+15%	21,011	+10%	25,516	-21%	23,206	-9%	22,965	+20%	22,832	+19%	24,101	+26%
Pearl River	38,714	48,621	+26%	51,809	+7%	64,189	-24%	59,414	-7%	58,497	+20%	57,894	+19%	58,825	+21%
Stone	10,750	13,622	+23%	14,359	+5%	18,144	-26%	16,513	-9%	16,243	+19%	16,066	+18%	16,695	+23%
Total	66,137	81,387	+23%	87,179	+7%	107,849	-24%	99,133	-8%	97,705	+20%	96,792	+14%	99,621	+22%
Grand Total	378,505	445,375	+18%	457,575	+3%	437,911	-4%	440,223	-1%	443,471	0%	446,339	0%	479,008	+8%

Notes: (1) After Mississippi Renewal Forum
 (2) 1990 and 2000 data: US Census
 (3) Jan 2012 is projection based on 2006 recovery pace

Sources: US Census Bureau
 Claritas® 2006
 Federal Emergency Management Agency
 American Red Cross

TABLE D.6. HOUSING UNITS AND TRENDS WITHIN THE MISSISSIPPI GULF COAST NATIONAL HERITAGE AREA.

COUNTY	1990	2000	% Change 1990-2000	Pre-Katrina Jan. 2005	% Change 2000-2005	Post-Katrina Oct. 2005	% Change Jan. - Oct. 2005	Jan. 2006	% Change Oct. 2005 - Jan. 2006	July 2006	% Change 2000 - July 2006	Project Jan. 2007	% Change 2000 - Jan. 2012	Projected Jan. 2012	% Change 2000 - Jan. 2012
Hancock	16,581	16,897	+2%	18,359	+9%	12,257	-33%	14,474	+18%	15,286	+6%	15,745	+3%	19,469	+15%
Harrison	67,813	71,538	+5%	72,208	1%	68,553	-5%	67,303	-2%	67,873	+1%	68,673	+1%	75,507	+6%
Jackson	45,542	47,676	+5%	49,536	+4%	45,079	-9%	47,814	+6%	48,321	+1%	48,607	+1%	51,124	+7%
Total	129,936	136,111	+5%	140,103	+3%	125,889	-10%	129,591	+3%	131,480	+1%	133,025	+1%	146,100	+7%
George	6,683	6,742	+1%	7,472	+11%	7,940	+6%	8,003	+1%	8,081	+1%	8,062	0%	8,524	+26%
Pearl River	15,793	18,078	+14%	19,548	+8%	21,435	+10%	21,545	+1%	21,732	+1%	21,903	+1%	22,646	+25%
Stone	4,148	4,747	+14%	5,027	+6%	5,379	+7%	5,518	+3%	5,562	+1%	5,570	0%	5,751	+21%
Total	26,624	29,567	+11%	32,049	+8%	34,754	+8%	35,066	+1%	35,375	+1%	35,535	0%	36,921	+25%
Grand Total	156,560	165,678	+6%	172,150	+4%	160,643	-7%	164,657	+2%	166,855	+1%	168,560	+1%	183,021	+10%

Notes:

- (1) After Mississippi Renewal Forum
- (2) 1990 and 2000 data: US Census
- (3) Jan 2012 is projection based on 2006 recovery pace

Sources:

- US Census Bureau
- Claritas© 2006
- Federal Emergency Management Agency
- American Red Cross

TABLE D.7. POPULATION TRENDS BY ETHNICITY WITHIN THE MISSISSIPPI GULF COAST NATIONAL HERITAGE AREA.

County	Total		One Race		% of Total		White		% of Total		African American		% of Total		American Indian		% of Total		Asian & Pacific Island		% of Total		Hispanic		% of Total		Some other Race		% of Total		Two or more races		% of Total		
			B	C A/B	E D/A	G E/A	Total	Total	H/A	I H/A	Total	Total	Total	K J/A	Total	M L/A	Total	O N/A	Total	Q P/A															
Hancock																																			
1990	31,760	N/A	N/A	N/A	90.1%	8.7%	2,774	129	0.4%	164	0.5%	164	0.5%	N/A	N/A	68	0.2%	N/A	N/A																
2000	42,967	N/A	98.9%	38,752	90.2%	6.8%	2,934	257	0.6%	393	0.9%	775	1.8%	143	0.3%	488	0.3%	143	1.1%																
Estimated 2005	46,711	—	—	—	90.6%	7.0%	—	—	0.6%*	—	—	—	—	—	2.3%	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
Harrison																																			
1990	165,365	N/A	N/A	127,630	77.2%	19.5%	32,281	466	0.3%	4,331	2.8%	N/A	657	0.4%	N/A	657	0.4%	N/A	N/A																
2000	189,601	186,331	98.3%	138,692	73.1%	21.1%	39,984	861	0.5%	5,897	2.7%	4,910	2.6%	1,697	0.9%	3,270	1.7%	1,697	1.2%																
Estimated 2005	193,810	—	—	—	69.9%	22.6%	—	—	0.5%*	—	—	—	—	—	2.5%	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
Jackson																																			
1990	115,243	N/A	N/A	90,114	78.2%	20.5%	23,581	254	0.2%	1,115	1.0%	N/A	179	0.2%	N/A	179	0.2%	N/A	N/A																
2000	131,420	129,950	98.9%	99,026	75.4%	20.9%	27,432	440	0.3%	2,111	1.6%	2,807	2.1%	941	0.7%	1,470	1.1%	941	1.1%																
Estimated 2005	135,940	—	—	—	74.9%	21.8%	—	—	0.4%*	—	—	—	—	—	2.5%	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
1990	312,368	N/A	N/A	246,369	78.9%	18.8%	58,636	849	0.3%	5,610	1.8%	N/A	904	0.3%	N/A	904	0.3%	N/A	N/A																
2000	363,988	358,760	98.6%	276,470	76.0%	19.3%	70,350	1,558	0.4%	7,601	2.1%	8,492	2.3%	2,781	0.8%	5,228	1.4%	2,781	1.4%																
Estimated 2005	376,461	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
George																																			
1990	16,673	N/A	N/A	15,025	90.1%	9.5%	1,587	38	0.2%	18	0.1%	N/A	5	<0.1%	N/A	5	<0.1%	N/A	N/A																
2000	19,144	19,034	99.4%	17,110	89.4%	8.8%	1,688	45	0.2%	30	0.2%	307	1.6%	161	0.8%	110	0.6%	161	0.6%																
Estimated 2005	21,259	—	—	—	89.7%	9.2%	—	—	0.3%	—	—	—	—	—	2.5%	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Pearl River																																			
1990	38,714	N/A	N/A	32,888	85.0%	14.3%	5,545	142	0.4%	80	0.2%	N/A	59	0.2%	N/A	59	0.2%	N/A	N/A																
2000	48,621	48,072	98.9%	41,596	85.6%	12.2%	5,924	242	0.5%	145	0.3%	686	1.4%	166	0.3%	549	1.1%	166	1.1%																
Estimated 2005	52,659	—	—	—	85.8%	12.3%	—	—	0.5%*	—	—	—	—	—	1.6%	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Stone																																			
1990	10,750	N/A	N/A	8,362	77.8%	21.8%	2,344	20	0.2%	14	0.1%	N/A	10	<0.1%	N/A	10	<0.1%	N/A	N/A																
2000	13,622	13,527	99.3%	10,818	79.4%	19.2%	2,613	39	0.3%	26	0.2%	170	1.2%	31	0.2%	95	0.7%	31	0.7%																
Estimated 2005	14,862	—	—	—	79.1%	20.0%	—	—	0.3%	—	—	—	—	—	1.6%	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
1990	66,137	N/A	N/A	56,275	85.1%	14.3%	9,476	200	0.3%	112	0.2%	N/A	74	0.1%	N/A	74	0.1%	N/A	N/A																
2000	81,387	80,633	99.1%	69,524	85.4%	12.6%	10,225	326	0.4%	201	0.2%	1,163	1.4%	358	0.4%	754	0.9%	358	0.9%																
Estimated 2005	88,780	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
1990	378,505	N/A	N/A	302,644	80.0%	18.0%	68,112	1,049	0.3%	5,722	1.5%	N/A	978	0.3%	N/A	978	0.3%	N/A	N/A																
2000	445,375	439,393	98.4%	345,994	77.7%	18.1%	80,575	1,884	0.4%	7,802	1.8%	9,655	2.2%	3,139	0.7%	5,982	1.3%	3,139	1.3%																
Estimated 2005	465,241	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	

*Includes Alaska native persons
 Source: U.S. Census Bureau
 Note: Percentage Values are approximate

TABLE D.8. PUBLIC LANDS AND TRAILS IN THE MISSISSIPPI GULF COAST NATIONAL HERITAGE AREA (DELORME 2004, MS DEPT. OF WILDLIFE, FISHERIES AND PARKS 2007, MDMR 2007).

	Acreage/Miles	Manager	City	County	Status 2007
National Wildlife Refuges					
Mississippi Sandhill Crane National Wildlife Refuge	19,000 (Ac)	USFWS	Gautier	Jackson	Open
Bogue Chitto National Wildlife Refuge	40,000 (Ac)	USFWS	Picayune	Pearl River	Open
Grand Bay National Wildlife Refuge	6,500 (Ac)	USFWS	Moss Point	Jackson	Open
Wildlife Management Areas					
Old River Wildlife Management Area	15,408 (Ac)	MDWFP	Poplarville	Pearl River	Open
Little Biloxi Wildlife Management Area	15,622 (Ac)	MDWFP	McHenry	Stone, Harrison	Open
Red Creek Wildlife Management Area	91,139 (Ac)	MDWFP	Wiggins	Harrison, Stone, George	Open
Pascagoula River Wildlife Management Area	37,124 (Ac)	MDWFP	Lucedale	George, Jackson	Open
Ward Bayou Wildlife Management Area	13,234 (Ac)	MDWFP	Moss Point	Jackson	Open
Wolf River Wildlife Management Area	10,801 (Ac)	MDWFP	Poplarville	Pearl River	Open
National Forests and Trails					
DeSoto National Forest	378,538 (Ac)	USFS	Wiggins, Gulfport	Stone, George, Harrison, Pearl River, Jackson	Partly Open
Tuxachanie Hiking Trail	11 (Mi)	USFS	Saucier	Harrison	Open
Bethel ATV Trail	37(Mi)	USFS	Saucier	Harrison	Open
Bethel Bicycle/ Motorcycle Trail	19 (Mi)	USFS	Saucier	Harrison	Open (8 miles only, Motorcycles must ride ATV trail until further notice)
Big Foot Horse Trail	21(Mi)	USFS	Saucier	Harrison	Open
Black Creek Hiking Trail	41(Mi)	USFS	Wiggins	Stone	Closed Temporarily
National Parks					
Gulf Island National Seashore	135,000(Ac)	NPS	Ocean Springs	Jackson	Open
State Parks					
Buccaneer State Park	398 (Ac)	MDWFP	Waveland	Harrison	Closed Temporarily
Shepherd State Park	400 (Ac)	MDWFP	Gautier	Jackson	Open presently for camping only
Shepard State Park Trails	+10 (Mi)	MDWFP	Gautier	Jackson	Closed Temporarily
Flint Creek Water Park	1,900 (Ac)	PHWD	Wiggins	Stone	Open

TABLE D.8. CONCLUDED.

	Acreage/Miles	Manager	City (vicinity of)	County	Status 2007
Gulf Ecological Management Sites (GEMS)¹					
Bayou La Croix	1,478	MDMR	Bay St. Louis	Hancock	Open
Bayou Portage	1,137	MDMR	Pass Christian	Harrison	Open
Bellefontaine Marsh	1,305	MDMR	Ocean Springs	Jackson	Open
Biloxi River Marshes	4,020	MDMR	Gulfport- Handsboro	Harrison	Open
Cat Island	2,802	MDMR	S of Gulfport	Harrison	Open
Davis Bayou	1,410	MDMR	Ocean Springs	Jackson	Open
Deer Island	674	MDMR	SE of Biloxi	Harrison	Open
Escatawpa River	2,826	MDMR	Moss Point	Jackson	Open
Grand Bay	26,900	MDMR & GNDNERR ² partners	Moss Point- Pascagoula	Jackson	Open
Grand Bayou	565	MDMR	Waveland- Clermont Harbor	Hancock	Open
Graveline Bay	2,339	MDMR	Gautier	Jackson	Open
Hancock County Marshes	13,570	MDMR	Pearlington- Clermont Harbor	Hancock	Open
Horn Island	2,763	NPS	S of Gautier	Jackson	Open
Jourdan River	6,423	MDMR	Bay St. Louis	Hancock & Harrison	Open
Old Fort Bayou	1,459	MDMR	Ocean Springs	Jackson	Open
Pascagoula River	11,150	MDMR	Pascagoula & Gautier	Jackson	Open
Petit Bois	1,673	NPS	S of Pascagoula	Jackson	Open
Round Island	65	MDMR	S of Pascagoula	Jackson	Open
Sandhill Crane Refuge	20,000	USFWS	Ocean Springs, St. Martin, Latimer, Gautier, Vancleave	Jackson	Open
Ship Island	2,051	NPS	S of Biloxi	Harrison	Open
Wolf River	2,426	MDMR	Pass Christian	Harrison	Open

¹ Many of the Coastal Preserves are privately, locally, state or federally owned and the major portions of the properties are tidal wetlands already owned by the State of Mississippi, unless part of National Park Service or US Fish and Wildlife Service property.

² GNDNERR: Grand Bay National Estuarine Research Reserve

TABLE D.9. NATIONAL AMBIENT AIR QUALITY STANDARDS (EPA 2006).

Pollutant	Standard Value	Standard Type
<i>Carbon Monoxide (CO)</i>		
8-hour Average	9 ppm	Primary
1-hour Average	35 ppm	Primary
<i>Nitrogen Dioxide (NO2)</i>		
Annual Arithmetic Mean	0.053 ppm	Primary & Secondary
<i>Ozone (O3)</i>		
1-hour Average	0.12	Primary & Secondary
<i>Lead (Pb)</i>		
Quarterly Average	1.5 □g/m3	Primary & Secondary
<i>Particulate (PM 10)</i>		
Annual Arithmetic Mean	50 □g/m3	Primary & Secondary
23-hour Average	150 □g/m3	Primary & Secondary
<i>Sulfur Dioxide (SO2)</i>		
Annual Arithmetic Mean	0.03 ppm	Primary
24-hour Average	0.14 ppm	Primary
3-hour Average	0.50 ppm	Secondary

**TABLE D.10. AIR QUALITY SUMMARY BY COUNTY- 2005
(MDEQ 2005, USEPA, OAR 2001A)**

County/City	Ozone (ppb)	PM2.5 (ug/m3)	PM10 (ug/m3)	Nitrogen Dioxide (ppm)	Sulfur Dioxide (ppm)
<i>Hancock</i>					
Port Bienville I.P.	79	10.4	NA	NA	NA
<i>Harrison</i>					
Gulfport	83	12.2	NA	NA	NA
Saucier	76	NA	NA	NA	NA
<i>Jackson</i>					
Pascagoula	81	11.9	19	0.007	0.003
Vancleave	74	NA	NA	NA	NA
<i>Pearl River</i>					
Picayune	NA	12.1	NA	NA	NA
<i>Stone</i>	NA	NA	NA	NA	NA
<i>George</i>	NA	NA	NA	NA	NA

TABLE D.11. COMMON SOUND LEVELS

Location	Sound Level (Decibels)
Near jet plane at takeoff	140
Near air-raid siren	130
Threshold of pain	120
Thunder	110
Trailer truck at roadside	110
Power lawnmower at 50 feet	90
Backhoe, paver	85
Compressor	75
Freeway traffic at 50 feet	70
Conversational speech	60
Average residence	50
Breathing	10
Threshold of hearing	0

Source: National Pollution Clearinghouse 2001

**TABLE D.12. REGULATED SITES BY COUNTY WITHIN THE MISSISSIPPI GULF
COAST NATIONAL HERITAGE AREA**

County	UST¹	LUST²	CERCLA³	NPL⁴
George	87	13	6	0
Hancock	86	32	22	0
Harrison	582	201	90	1
Jackson	296	103	56	1
Pearl River	147	43	24	1
Stone	76	14	10	0
Total	1274	406	208	3

Sources:

- 1: Underground Storage Tank Online Database (MDEQ 2007a)
 - 2: Leaking Underground Storage Tank Online Database (MDEQ 2007a)
 - 3: State of Mississippi CERCLA/Uncontrolled Sites File List (MDEQ 2007b)
 - 4: National Priorities List Online Database (EPA 2007)
-
-

APPENDIX E

PARTICIPANTS IN DESIGNATION AND DEVELOPMENT OF THE MISSISSIPPI GULF COAST NATIONAL HERITAGE AREA AND DEVELOPMENT OF THE MANAGEMENT PLAN

(REVISED JUNE 2007)

Designation of the Mississippi Gulf Coast National Heritage Area in 2004, and development of the Management Plan were a logical outgrowth of previous efforts by the Mississippi Department of Marine Resources (MDMR) to work with Federal, State, and local government agencies and representatives, non-profit organizations, stakeholders, and interested members of the public to conserve and protect the natural resources and water quality of the coastal areas and encourage Smart Growth. With acceptance of the Comprehensive Resource Management Plan (CRMP), the Mississippi Department of Marine Resources initiated work to have the six coastal counties covered under the CRMP designated as a National Heritage Area. With active support of Mississippi's Congressional delegation, local government officials, stakeholders and private citizens, the MDMR-CRMP achieved the twin goals of having the six coastal counties designated as a National Heritage Area and having a Management Plan developed.

Mississippi Dept. of Marine Resources (2007)

Dr. William Walker, Executive Director
 Tina Shumate, Director, CRMP
 Mark Boyles, Bureau Director Deputy, CRMP
 Grant Larsen, Database Analyst, CRMP
 Marcia Garcia, Staff Officer, CRMP
 Leslie Young, Projects Officer, CRMP
 Bernice Minor, Administrative Assistant, CRMP

Mississippi Gulf Coast National Heritage Area Commission (2007)

*Grace Aaron, Harrison County
 *Julia Anderson - Pearl River County
 Mary Bankston, Citizen
 Lolly Barnes, Mississippi National Trust
 Tony Boudreaux, Ph.D., Coastal Environments, Inc.
 Margaret Bretz, MS Secretary of State's Office
 Mauna and Leonard Brooke, Citizens
 *George Carbo, Citizen
 Robin Krohn David, Maritime Seafood Industry Museum
 Dave and Jane Dennis, Specialty Contractors & Associates, Inc.
 Bob Fairbank, Mississippi Power
 *Liz Ford, Jackson County
 Sherwood Gagliano, Ph.D., Coastal Environments, Inc.
 Parah Gatchell, Senator Thad Cochran's Office
 Ann Hebert, Citizen
 Michaela Hill, Tidelands Bureau
 *Linda Holden, Jackson County
 Chris LaGarde, Congressman Gene Taylor's Office
 Berinda Logan, DuPont DeLisle Plant
 *Mayor Tommy Longo, Hancock County
 Tribal Chief Phillip Martin, Mississippi Band of Choctaw Indians
 Marge McGinnis, Citizen
 Duncan McKenzie, Mississippi Coast Chamber
 *Nell Murray, Stone County
 Ken P'Pool, MS Dept. of Archives and History
 Steve Richer, MS Gulf Coast Convention and Visitors Bureau
 *David Spector, Camp Dresser & McKee, Inc.
 David Staehling, City of Biloxi
 Judy Steckler, Land Trust of MS Coastal Plain
 *Jenell Tompkins, Hancock County
 Scott Walker, Senator Trent Lott's Office
 *Dr. Dayton Whites, George County
 Clay Williams, Capital Resources
 *Glade Woods, Pearl River County

*Sue Wright, George County

*Task Commissioners

Mississippi Delegates to the United States Congress (2004)

Special thanks to Senator Trent Lott
 Special thanks to Senator Thad Cochran
 Special thanks to Congressman Gene Taylor
 Congressman Charles Pickering
 Congressman Bennie Thompson
 Congressman Roger Wicker

Gulf Coast Delegates to the Mississippi Legislature (2004)

Special thanks to:
 Senator Deborah Dawkins
 Senator Thomas Gollott
 Senator William Hewes, III
 Senator T. O. Moffatt
 Representative Leonard Bentz
 Representative Frank Hamilton
 Representative Henry Zuber, III

Comprehensive Resource Management Planning Effort ParticipantsFederal Agencies:

Federal Highway Administration
 Gulf of Mexico Program
 National Aeronautics and Space Administration
 National Marine Fisheries Service
 Natural Resource Conservation Service
 NOAA Office of Ocean and Coastal Resource Management
 US Army Corps of Engineers, Mobile District
 US Environmental Protection Agency
 US Fish and Wildlife Service
 US Department of the Interior
 US National Park Service

State Agencies:

Mississippi-Alabama Sea Grant Consortium
 Mississippi Department of Archives and History
 Mississippi Department of Economic and Community Development
 Mississippi Department of Environmental Quality
 Mississippi Department of Health

Mississippi Department of Transportation
Mississippi Emergency Management Agency
Mississippi Gaming Commission
Mississippi Secretary of State
Mississippi Soil and Water Conservation
Commission
Mississippi State Port Authority at Gulfport

Local and County Government:

Bay St. Louis Wastewater District
Biloxi Port Commission
City of Bay St. Louis
City of Biloxi
City of D'Iberville
City of Gautier
City of Gulfport
City of Long Beach
City of Moss Point
City of Ocean Springs
City of Pascagoula
City of Pass Christian
City of Waveland
Hancock County Board of Supervisors
Hancock County Port & Harbor Commission
Hancock County Solid Waste District
Harrison County Board of Supervisors
Harrison County Development Commission
Harrison County Health Department
Harrison County Soil and Water Conservation
District
Harrison County Wastewater and Solid Waste
Management District
Jackson County Board of Supervisors
Jackson County Economic Development
Commission
Jackson County Soil and Water Conservation
District
Mississippi Gulf Coast Regional Wastewater
Authority
Port of Pascagoula

Private and Corporate:

Bay St. Louis Community Association
Dauphin Island Sea Lab
Gulf Coast Sierra Club
Gulf Islands Conservancy
Gulf Regional Planning Commission
Protect Diamondhead Quality, Inc.
Southern Mississippi Planning Commission
The Nature Conservancy

The Land Trust for Mississippi Coastal Plain
The Scruggs Center
Turkey Creek Community Initiatives
Wolf River Conservation Society
Pascagoula River Alliance
SMEACO
Women's Voter Groups
Mississippi Power
Chevron/Texaco
Dupont
Mississippi Chamber of Commerce
Imperial Palace Casino
The Biloxi Grand Casino
The Isle of Capri

Comprehensive Resource Management Planning
Effort Endorsements (7-21-98)

Bay St. Louis Community Association
City of Bay St. Louis
City of Biloxi
City of D'Iberville
City of Gautier
City of Gulfport
City of Long Beach
City of Moss Point
City of Ocean Springs
City of Pascagoula
City of Pass Christian
City of Waveland
Coast 21
Gulf Coast Sierra Club
Gulf Regional Planning Commission
Harrison County Council of Governments
Harrison County Development Commission
Jackson County Board of Supervisors
Mississippi Emergency Management Agency
Mississippi Gulf Coast Chamber of Commerce
Mississippi Gulf Coast Economic Development
Council
Mississippi Gulf Coast Regional Wastewater
Authority
National Aeronautics and Space
Administration (NASA)
NOAA Office of Ocean and Coastal Resource
Management
US Fish and Wildlife Service
US Environmental Protection Agency

**Active Supporters of Heritage Designation
(2002-2003)**

City of Biloxi, Mayor A. J. Holloway
City of Gautier, Mayor Ken Taylor
City of Gulfport, Mayor Ken Combs
City of Long Beach, Mayor Robert Bass
City of Lucedale, Mayor Dayton E. Whites, MD
City of Moss Point, Linda Holden, Office of the
Mayor/Dir. of Economic Development
City of Ocean Springs, Mayor Seren Ainsworth &
Alderman Jerry A. Dalgo
City of Pascagoula, Mayor Joe D. Cole, Jr.
City of Picayune, City Manager J. P. Burns, Jr.
City of Wiggins, Mayor Ferris O'Neal
George County Board of Supervisors, Henry
Cochran
Hancock County Board of Supervisors, Rodrick
Pullman, President
Hancock County Board of Supervisors, Lisa
Coward
Harrison County Board of Supervisors, Connie
Rockco
Jackson County Board of Supervisors, John McKay,
Vice President
Pearl River County Board of Supervisors, Larry
Davis, President
Stone County Board of Supervisors, Duncan Ray
Hatten, President
Land Trust for the Mississippi Coastal Plain, Judy
Steckler, Director
Bess Moffatt, Master Naturalist
Senator Tommy Moffatt
Partners for Pearl River County Economic
Development, Glade Woods, President
Secretary of State, State of Mississippi, Eric Clark

Consulting Team on Management Plan (2005)
Coastal Environments, Inc. (CEI)

Sherwood M. Gagliano, Ph.D., President
Karen M. Wicker, Ph.D., Director, Applied
Science and Planning Division
Tony Boudreaux, Ph.D., Principal
Investigator-Archaeology
Ethan Allen, M.S., Natural Resources
Melissa Braud, M.A., Cultural Resources
Thurston Hahn, Historical Resources
Sara Hahn, M.A., Archaeological Resources
Joanne Ryan, M.A., Cultural Resources
Lori Cunningham, M.A., GIS Database
Development
Benjamin Guempel, M.S., GIS Mapping
Lynn Charles, Desktop Publishing

**Consulting Team on Environmental
Assessment (2007)**

Coastal Environments, Inc. (CEI)

Sherwood M. Gagliano, Ph.D., CEO
Karen M. Wicker, Ph.D., Geographer
Tony Boudreaux, Ph.D., Cultural
Resources/Archaeology
Ethan Allen, M.S., Natural Resources
Shelley Meador, B.S., Natural Resources
Ed Fike, B.S., Socio-Economic
Benjamin Guempel, M.S., GIS/Mapping
Christy Duthu, B.S., GIS/Mapping
Mistch Tinsley, M.S., GIS/Mapping
Lynn Charles, B.S., Desktop Publishing

APPENDIX F

**MISSISSIPPI GULF COAST NATIONAL HERITAGE AREA RELATED PROJECTS
APPROVED FOR FUNDING IN 2007
UNDER THE COASTAL IMPACT ASSISTANCE PROGRAM (CIAP)**

APPENDIX F. MISSISSIPPI GULF COAST NATIONAL HERITAGE AREA RELATED PROJECTS APPROVED FOR FUNDING IN 2007 UNDER THE COASTAL IMPACT ASSISTANCE PROGRAM (CIAP) (MDMR 2007). (SEE APPENDIX C, FIGURE C-8 FOR LOCATIONS.)

Project No.	Applicant	Project	Goals	Objectives	Amount	DD Coordinates Location
<i>CULTURAL AND HISTORICAL RESOURCES</i>						
MS-CC-160	City of Gulfport	Renewal of Joseph T. Jones Park Educational Pavilion	Construct open sided, roofed pavilion with concrete slab and lighting to facilitate more detailed displays on marine environmental, commerce and heritage issues.	Fund, design, permit, construct and utilize facility as interpretive and information center to promote the Mississippi Sound as a heritage cluster; to provide information on Ship Island, Fort Massachusetts, Cat Island and rest of the Mississippi Sound; and communicate importance of outer continental shelf resources.	\$550,000	30.36572N - 89.086.39W
MS-CC-167	City of Moss Point	Working Waterfront Project #3: Acquisition Of Properties Adjacent to Pelican Landing	Acquire properties adjacent to and around Pelican Landing facility to preserve, conserve, and protect waterfront properties in area and support redevelopment of area for public use. Compliments other planning efforts including Downtown Redevelopment Plan and Smart Code.	Acquire and protect properties surrounding Pelican Landing and designated Audubon site to provide for creation of eco-tourism anchor within city; facilitate conservation and water quality education and redevelop and enhance existing inland waterfront properties that differentiate Moss Point from other coastal communities.	\$449,660	30.432658N- 88.546817W
MS-CC-168	City of Moss Point	Working Waterfront Project #1: Land Acquisition for Development of Riverfront Recreational Corridor	Acquisition of property along and connected to Moss Point's waterfronts for purpose of creating a working waterfront parkway; highlighting civic and central business districts and preserve and protect unique waterfront properties within city. Compliments other planning efforts including Downtown Redevelopment Plan and Smart Code.	Acquire properties along waterfront from City Hall to pass between Robertson and Beardlee Lakes for purpose of preservation, conservation and public use.	\$500,000	30.437522N- 88.545386W
MS-CC-170	City of Pascagoula	The Point Acquisition Project	Acquire vacant lot adjoining The Point Park for use as public boat launch and park area consistent with the Strategic Plan.	Acquire property, clear of debris and slab, restore to lower elevation and plant with native grass for stabilization.	\$552,000	30.345228N- 88.561381W West end of Beach Blvd.
MS-ST-13	DMR/CRMP	Sustainable Development & Smart Growth Management Initiative in Six Coastal Counties of MS	Create comprehensive program designed to incorporate principles of sustainability and smart growth into day-to-day public and private development activities that occur in MS Gulf Coast Region.	Develop CRMP Organizational Management Plan; Develop Sustainable Growth and Watershed Management Plan; Develop six-coastal county strategic and smart growth plan; Develop conceptual plan for CRMP exemplary sustainable coastal development project. Application of plans to provide guidance and direction for long-term recovery and rebuilding following Hurricane Katrina damage that is reflective of precious coastal resources and colorful characteristics of coastal MS and will encourage sense of community by offering innovative smart growth site design practices.	\$400,000	6 coastal counties

APPENDIX F. MISSISSIPPI GULF COAST NATIONAL HERITAGE AREA RELATED PROJECTS APPROVED FOR FUNDING IN 2007 UNDER THE COASTAL IMPACT ASSISTANCE PROGRAM (CIAP) (MDMR 2007). (SEE APPENDIX C, FIGURE C-8 FOR LOCATIONS.)

Project No.	Applicant	Project	Goals	Objectives	Amount	DD Coordinates Location
MS-CC-153	City of Biloxi	Biloxi Lighthouse Landing	Implement comprehensive conservation management plan activities identified in MS Gulf Coast National Heritage Area Management Plan. Strengthen resident's sense of heritage identity, support conservation of region's heritage resources, & promote & market the heritage area.	Design and construct high visibility complex immediately north of Biloxi Lighthouse to house consolidated visitor and community services to promote cultural heritage and recreational amenities of City of Biloxi.	\$1,000,000	30.395064N - 88.90082W
MS-CC-154	City of Biloxi	Land acquisition to support view shed of Biloxi Lighthouse and protect and restore natural resources of a coastal area.	Protect and restore historically significant area; improve City's ability to promote cultural heritage of area through improved recreational amenities and natural resources and improve general public health and safety	Purchase two parcels of property at 1044 and 1068 Beach Blvd, immediately north of Biloxi Lighthouse that is Mississippi Landmark and National Register Site. Will preserve unobstructed views of Lighthouse and sand beach.	\$1,000,000	30.394724N - 88.90198W 30.39469N - 88.9015W
MS-CC-159	City of Gulfport	Renewal of Joseph T. Jones Park / increase of Public access to Historical Jones Park, Fort Massachusetts, Ship Island and Cat Island	Construct public boat launch ramp for access to Gulf of Mexico; includes parking, street realignment, utilities, lighting, landscaping, dredging and bulk heading.	Increased public access to Historical Jones Park, Fort Massachusetts, Ship Island and Cat Island; support of tourism; and increased public awareness of importance of conservation to protect Mississippi Gulf Coast's natural and historic resources and heritage.	\$2,210,000	30.36572N - 89.08639W
MS-CC-161	City of Gulfport	Renewal of Joseph T Jones Park / Educational Boardwalk	Construct 2062 linear ft by 20 ft concrete boardwalk with lighting, benches and water fountains, along Harbor perimeter to connect retail areas with educational stations regarding marine environment, marine commerce and recreation and heritage of Gulfport and surrounding coastal areas. Consistent with goals of Heritage Area Plan: 1) Develop an Interpretative Plan, 2) Conserve area's heritage resource and 3) Develop, promote and market National Heritage Area	Fund, design, permit, contract and utilize facility to interpret themes of Mississippi Gulf Coast National Heritage Area: Waterways of Discovery, Multi-ethnic Nature, Traditional Lifeways, Natural Areas, History and Arts.	\$240,000	30.36572N - 89.08639W
MS-CC-181	Hancock Co. Bd of Supervisors	Implementation of Hancock Co. Greenways: Possum Walk Environmental & Historical Trail, Linking NASA's Infinity to the Past	Establish interpretative trail, in upland area that links to Pearl River through brackish marshes, to educate people on unique environment and history of area. Would link NASA's planned Infinity Science and Education Center located south of Mississippi Welcome Center to area's past (e.g., Possum Walk, an extinct historic community that includes a ferry crossing and freed African-American settlement on banks of Pearl River, and region's logging and	Stand-alone project to establish 5-mile primitive trail through unique historical and ecological area and include signage to explain area's history and identify ecological features. Exhibit in NASA's Infinity Center would interpret Possum Walk Trail utilizing science and technology developed by NASA at the Stennis Space Center.	\$ 784,700	30.253719N- 89.602803W S of MS Welcome Center on Pearl River, Pearlinton

APPENDIX F. MISSISSIPPI GULF COAST NATIONAL HERITAGE AREA RELATED PROJECTS APPROVED FOR FUNDING IN 2007 UNDER THE COASTAL IMPACT ASSISTANCE PROGRAM (CIAP) (MDMR 2007). (SEE APPENDIX C, FIGURE C-8 FOR LOCATIONS.)

Project No.	Applicant	Project	Goals	Objectives	Amount	DD Coordinates Location
			forestry history).			
MS-CC-210	Pearl River Co. Dept. of Planning	Pearl River Co.: Steep Hollow History Museum	Establish private non-profit educational foundation to own and operate a history museum and adjacent meeting facility and community center and to create restoration, management and public use plans for the facility.	Board of Supervisors, with assistance from Land Trust for the Mississippi Coastal Plan, will facilitate formation of non-profit foundation, with by-laws, to manage activities of Museum and Community Center and receive transfer of ownership from Steep Hollow Baptist Church. Would be gateway to county and only freestanding history museum in county that could serve as interpretative center for Shaw Cabin and Farm (7 mi away) that Land Trust for Mississippi Coastal Plain is preparing to restore and operate as a rural life museum.	\$100,000	30.67N-89.43W
MS-CC-213	Stone Co. Bd. of Supervisors	Old Wire Road Trail Project Corridor in Stone Co. (Old Wire Road was 1848 telegraph line that relayed New York messaged to Pensacola, across south Mississippi [Jackson, Stone and Pearl River Co.] and then to New Orleans in record time.)	Create a corridor for biking and walking through Stone Co. that preserves historical, archaeological and natural resources, promotes preservation, strengthens a sense of heritage and connects communities.	Conduct archival research and field survey to validate and mark Old Wire Road; Conduct field survey and prepare land descriptions to acquire easements and rights-of-way, where appropriate for trail; Construct biking/walking hard-surfaced path along Old Wire Road in Stone Co.; Conduct historical and archaeological research to identify and mark sites of significance;; develop historical interpretative information; and provide interpretative signage with maps along Trail.	\$1,000,000	30.798306N-89.260719W S Stone Co, vic. of E & W Wire Rd, 30 mi; Crosses HW 15, US 49, Old HWY 26
MS-NGO-64	Maritime & Seafood Industry Museum	Schooner Pier Complex	Enhance existing facility that is available to general public for recreational activities, to restore and protect the beach maritime forest and to educate public on conservation, history and marine life.	Enable more recreational activities (i.e., Gulf Coast Wooden Boat Show, MS Big Game Fishing Tournaments, Blessing of the Fleet, fishing and crabbing from piers, picnicking under pavilions); Enhance Museum's Sea-n-Sail Adventure Camp for children (6-13 yrs); Restore and protect sand beach and restore maritime forest with sand dunes, sea oats, and other native habitat and facilitate birding; Educate public through use of interpretative signage on pier regarding conservation (i.e., being good neighbor to coastal habitat), area marine life (i.e., salinity, food web in The Mississippi Sound, wooden boat building) and history of surrounding area (i.e., Deer Island, Barrier Islands, Ohr Museum, Tullis Manor)	\$300,000	30.392608N-88.874214W 367 Beach Blvd, Biloxi

APPENDIX F. MISSISSIPPI GULF COAST NATIONAL HERITAGE AREA RELATED PROJECTS APPROVED FOR FUNDING IN 2007 UNDER THE COASTAL IMPACT ASSISTANCE PROGRAM (CIAP) (MDMR 2007). (SEE APPENDIX C, FIGURE C-8 FOR LOCATIONS.)

Project No.	Applicant	Project	Goals	Objectives	Amount	DD Coordinates Location
MS-NGO-65	Ohr-O'Keefe Museum of Art	Ohr-O'Keefe Museum of Art Mississippi Sound Welcome Center	Fulfill portion of federally approved management plan of Mississippi Gulf Coast National Heritage Area through construction of Welcome Center that would house official Mississippi State Visitors Center and would strengthen sense of heritage identity, conserve area's heritage resources and promote and market heritage area. (The \$3.7 million Welcome Center construction funds obtained prior to Hurricane Katrina from US Dept. of Transportation and MS Dept. of Transportation.	Use Welcome Center to support National Heritage Area. Create public access to information and programming; Disseminate information; Conserve area's heritage resources; Educate individuals, groups/organizations regarding heritage resources; Collaborate on resource conservation; Promote and market Heritage Area; Establish Interpretive Center; Create educational partnerships with other heritage organizations. Would compliment planned relocation of Biloxi Maritime and Seafood Industry Museum adjacent to Museum complex.	\$500,000	30.393175N-88.874214W 386 Beach Blvd, Biloxi
MS-ST-20	DMR/CRMP	Documenting & Conserving Heritage Resources of MS Gulf Coast	Document and conserve heritage resources of MS Gulf Coast by creating geographic information systems (GIS) database of known and potential heritage resource locations in six coastal counties.	Identification of resources; Collection of data; Analysis and compilation of data; Construction of GIS database. Results of project could facilitate heritage area conservation efforts by identifying resources to be avoided or mitigated as well as acquired or protected.	\$900,000	6 coastal counties
<i>NATURAL AND RECREATIONAL RESOURCES</i>						
MS-CC-152	Gulfport-Biloxi Regional Airport Authority	Gulfport-Biloxi International Airport Turkey Creek Watershed Protection Project	Mitigation of damage to fish, wildlife or Resources.		\$ 500,000	30.415150N-89.071372W
MS-CC-156	City of D'Iberville	Tchoutacabouffa River Park & Preserve	Acquire scarce riverfront property on Tchoutacabouffa River to create new municipal park and nature area to enhance public's opportunity to access, use and enjoy this unique riverine ecosystem for recreational, educational and conservation purposes.	Acquire up to 20 acres of undeveloped private property and dedicate for public access; construct minimal low-impact facilities for swimming, outdoor recreational activities, education, and environmental stewardship of this relatively undisturbed natural area on upper Tchoutacabouffa River.	\$850,000	30.481667N-88.888333W
MS-CC-157	City of D'Iberville	D'Iberville Municipal Marina Improvements	Provide increased access to marine waters of Back Bay, the Mississippi Sound and surrounding tributaries. Part of Citizens Master Plan and links marina improvement with downtown re-vitalization and waterfront resort development.	Expansion of City's only public marina on Back Bay dedicated to perpetual public access and marine recreation. Acquire additional waterfront and upland property to expand footprint of existing marina. Stabilize shoreline. Improve fishing piers, mooring facilities and other site/logistical improvements needed to support recreational use of marina resources.	\$1,200,000	30.424444N-88.884444W

APPENDIX F. MISSISSIPPI GULF COAST NATIONAL HERITAGE AREA RELATED PROJECTS APPROVED FOR FUNDING IN 2007 UNDER THE COASTAL IMPACT ASSISTANCE PROGRAM (CIAP) (MDMR 2007). (SEE APPENDIX C, FIGURE C-8 FOR LOCATIONS.)

Project No.	Applicant	Project	Goals	Objectives	Amount	DD Coordinates Location
MS-CC-164	City of Long Beach	Long Beach Harbor Expansion	Using a multi-year approach, almost doubles size of existing Long Beach Harbor as envisioned in City's approved 2006 Master Plan and promotes environmentally responsible marina and boating practices through participation in AMCMP.	Better meet community's need for recreational opportunities in environmentally responsible way and create focus for tourism. Add additional boat slips and fuel dock; encourage development of charter fishing and guide trips; open area to fishing, biking and walking through connection of proposed open space networks and increased pedestrian access to harbor from downtown area.	\$2,000,000	30.34332N – 89.14585W
MS-CC-165	City of Lucedale	Preservation of Green Spaces in City of Lucedale	Place beautiful parcel of property (~34.44 ac) into conservation in downtown area of Lucedale; protect two creeks that offer habitat for wildlife; and promote cultural and natural resource education and recreation. Supplement to existing Lucedale Depot Greenway.	Enhance the corridor that lies on the fifth most used migratory bird route between North and South America and protect wetlands, pine and hardwood forest habitats. Facilitate protection of Green Spaces and use of area for walking, nature trails and bird watching.	\$154,000	30.55919N – 88.35765W
MS-CC-173	City of Pass Christian	Pass Christian Harbor Expansion	Approximately double size of existing Pass Christian Smallcraft Harbor, primarily to serve recreational purposes. Designed to be compatible with concepts developed by Governor's Commission on Recovery, Rebuilding and Renewal and Smart Growth.	Create renewed, revitalized and restored harbor attractive to recreational vessel owners and commercial fishing industry; maintain historic character of harbor; highlight natural resources of area; promote heritage resources of Pass Christian area by providing catalyst to promote tourism and economic development in downtown area adjoining harbor.	\$3,000,000	30. 31245N – 89.24304W
MS-CC-176	George Co. Bd of Supervisors	Pascagoula River Ecotourism and Education Trails (at headwater of river)	Provide public access to water and lands of Pascagoula River and address issues to restore, protect and enhance ecology of river.	Involvement of public and stakeholders in location and purpose of project for access and education; acquire property; coordinate with other agencies on funding for proposed site, trails, etc.; acquire MDOT Enhancement funds for rehabilitation of Historic Merrill Bridge; implement NRCS stream bank protection project on west end of bridge; use Pat Harrison funds for Boat Ramp improvements; obtain The Nature Conservancy project involvement and education materials.	\$410,000	30.978453N- 88.726494W Pascagoula River at Merrill
MS-CC-180	Hancock Co. Bd of Supervisors	Implementation of Hancock Co. Greenways: Pearlington Boat Launch & Cedar Point Boat Launch Enhancement	Provide continued public access to Hancock County's unique waterfront areas. Facilities among recommendations in Hancock County Greenways Plan.	At Pearlington and Cedar Point Activity Nodes: build passive fishing piers and kayak and canoe launches; build and install flood marker indicating high water mark of Hurricanes Katrina, Camille, Betsy, Lillie and tropical storm Isadore. At Pearlington Activity Node build and install environmentally sustainable shower and restroom facility. These Activity Nodes would link landside paths and trails to waterside trails and link	\$712,400	30.248022N- 89.615600W (Monroe St in Pearlington) 30.339069N- 89.354694W (N Beach Blvd in Bay St.

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Project No.	Applicant	Project	Goals	Objectives	Amount	DD Coordinates Location
				coastal trails with brackish and freshwater trails proposed in the Greenways Plan		Louis)
MS-CC-190	Harrison Co. Bd. of Supervisors	Sensitive wetlands - 1,000 ft of Turkey Cr	Acquire wetlands and sensitive riparian habitat adjacent to Turkey Creek to ensure long-term opportunities for protection, restoration and management of sensitive ecological areas within Turkey Creek Watershed.	Acquire sensitive wetlands in Turkey Creek Watershed; manage and protect acquisition areas; work with other stakeholders in watershed to develop opportunities for ecological restoration and public use activities compatible with goals of project. Compatible with previous and on-going land acquisition projects in Turkey Creek Watershed.	\$250,000	30.421533N-89.080233W S of I-10, Turkey Creek Watershed; Sensitive wetlands - 1,000 ft of Turkey Cr
MS-CC-214	Hancock Co. Bd of Supervisors	Implementation of Hancock Co. Greenways: Sustainable Comfort Nodes On the Beach Pathway	Provide enhanced public access to waterfront in Hancock Co. through installation of five environmentally sustainable water tower showers and restrooms at defined activity nodes along Hancock County Beach Pathway and coastal waterfront.	Install five environmentally sustainable water tower showers and restrooms at defined activity nodes: Cedar Point Boat Launch, Washington Street Pier, Garfield Ladner Pier, Clermont Harbor Pier and Bayou Caddy.	\$1,016,750	30.342972N-89.340208W (Cedar Point Boat Launch) 30.303647N-89.330556W (Wash. St. Pier) 30.282244N-89.366922W (Garfield Ladner Pier) 30.258317N-89.412500W (Clermont Harbor Pier) 30.238725N-89.424475W (Bayou Caddy, S Beach Blvd.)
MS-CC-215	Hancock Co. Bd of Supervisors	Implementation of Hancock Co Greenways: Continuation of Hancock Co. Beach Pathway	Provide improved public access across Hancock Co.'s waterfront by continuing Hancock Co. Beach Pathway from Waveland's Garfield Ladner Pier to Buccaneer State Park.	Extend 10-ft wide beachfront pathway an additional two miles and link Garfield Ladner Pier in Waveland to Buccaneer State Park and mark to separate pedestrian and bicycle use.	\$843,000	30.259575N-89.408561W Mississippi Sound Waterfront from Garfield Ladner Pier to Buccaneer State Park, Waveland
MS-CC-218	City of Gauthier	Coastal Land Conservation in Area Point Clear, Gautier, MS	Conservation and restoration of ~100 ac of coastal islands within bayous and streams in Point Clear area of Gautier, MS and preserve lands for natural functions.	Acquire deed ownership of islands, create conservation plan and restore islands for natural functions.	\$300,000	30.37N-88.67W

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Project No.	Applicant	Project	Goals	Objectives	Amount	DD Coordinates Location
MS-NGO-55	Land Trust for MS Coastal Plain	Conservation Lands Acquisition in MS Coastal Plain (LTMCP): Moss Point EcoTourism Waterfront Development Project	Acquire property for Moss Point EcoTourism Waterfront Development Project.	Acquire conservation lands within Pascagoula watershed in Jackson Co. for Moss Point EcoTourism Waterfront Development Project and manage acquired lands for conservation: perform baseline study, develop management plan, develop restoration plan; develop public plan. Property would be uninterrupted part of intertidal marsh system providing important habitat for estuarine plants and animals.	\$551,146	30.411478N-88.534606W Moss Point, Sec 11, T-7-S, R-6-W
MS-NGO-57		Conservation Lands Acquisition in Mississippi Coastal Plain	Acquire additional 14-ac site on Old Fort Bayou to add to previously acquired 30-ac site to create larger upland/wetland buffer to further reduce nonpoint source pollution impacts to watershed.	Acquire conservation lands within Pascagoula watershed in Jackson Co. for Moss Point EcoTourism Waterfront Development Project and manage acquired lands for conservation: perform baseline study, develop management plan, develop restoration plan; develop public plan. Old Fort Bayou is estuary within Biloxi Bay watershed and priority watershed in the LTMCP/EPA Building Watershed Partnership program.	\$850,938	30.418183N-88.795997W Sec 21, T-7-S, R-8-W (adjacent to Twelve Oaks & MDMR Coastal Preserves property on Old Fort Bayou
MS-NGO-63	Lynn Meadows Discovery Center	On the Green at the Lynn Meadows Discovery Center	Provide view shed to Gulf Coast, as well as green space for conservation and education.	Acquisition of natural and ecologically important site for conservation and preservation; Land preparation, including soil lost to Hurricane Katrina, grass seeding, and protection fence construction; Conservation language in deed to protect site from development; Education, including best practice activities for wetlands and conservation of trees.	\$1,200,000	30.380556N-89.038319W S of Lynn Meadows Discovery Center (1 blk from US 90, Gulfport)
MS-NGO-66	The Conservation Fund	Acquisition of Cat Island	Acquire and permanently protect portions of Cat Island that are privately held. (Note: 532 ac owned by NPS; over 692 ac privately owned.)	Permanently protect ~500 ac of Cat Island for wildlife habitat, public enjoyment and recreation and storm surge protection.	\$1,000,000	30.226406N-89.103078W ~8.5 mi S of Long Beach/Gulfport
MS-NGO-67	The Crosby Arboretum Foundation	The Crosby Arboretum Education Center	Education Center to Serve and educate more people by expanding Crosby Arboretum's facilities and programming through construction and furnishing of indoor meeting space (total cost is \$2 million).	Additional fund raising underway for multi purpose, indoor Education Center for learning and research (meeting rooms, rotating exhibits, laboratories, staff offices, storage, program and multimedia presentation space, gift shop, library, reference center) that is part of Crosby Arboretum's Master Plan.	\$250,000	30.5026333N-89.6667W
MS-NGO-72	Wolf River Conservation Society	Conservation Lands Acquisition in MS Coastal Plain / Sec. 7 / Pulitzer Property	Acquisition of 76-ac Pulitzer property and development and implementation of long-term management plan to preserve this critical habitat (natural bottomland hardwood swamp and major freshwater drainage connecting two large Wolf River	Prepare baseline study; Develop and implement management and restoration plan, including yearly inspections, to restore natural habitat and control invasive species; Develop and implement public use plan.	\$425,000	30.445511N-89.128467W Sec 7, T-7-S, R-12-W, 76-ac Pulitzer Property S of Cable Bridge, Harrison

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Project No.	Applicant	Project	Goals	Objectives	Amount	DD Coordinates Location
			conservation areas south of Cable Bridge, Harrison Co.) as a natural functioning riparian buffer zone.			Co.
MS-NGO-73	Wolf River Conservation Society	Conservation Lands Acquisition in MS Coastal Plain / Sec. 20 / Allison Property	Acquisition of 140-ac Allison property and development and implementation of long-term management plan to preserve this critical habitat (natural bottomland hardwood swamp and major freshwater drainage connecting two large Wolf River conservation areas south of Cable Bridge, Harrison Co.) as a natural functioning riparian buffer zone.	Prepare baseline study; Develop and implement management and restoration plan, including yearly inspections, to restore natural habitat and control invasive species; Develop and implement public use plan.	\$600,000	30.417303N-89.114203W Sec 20. T-7-S, R-12-W, 140-ac Allison Property S of Cable Bridge, Harrison Co.
MS-ST-01	DMR/CRMP	Coastal Wetland Impact Database Enhancement (6 coastal counties)	Utilize analytical capacity and organizational efficiency of current technology to enhance MS Dept. of Marine Resources' ability to manage marine environments of MS and adjacent connected terrestrial habitats.	Develop two dynamic and affective databases: 1) historical aerial photograph digital database to create static point in time framework upon which to compare, track and analyze restoration opportunities, investigate development trends and evaluate previous conditions; and 2) web-enabled, SQL based GIS specific wetland impact database that will contain all pertinent information related to wetland applications, violations, conservation easements, and mitigation plans.	\$400,000	30.408317N-88.867711W Biloxi, DMR
MS-UC-101	MS State Univ.	Deer Island Tree Planting & Master Plan Development	Replacement of trees and beach renourishment to create resilient, erosion resistant, upper beach.	Test novel tree planting (deep tree planting) as method to enhance young tree survival without use of irrigation. Apply previously tested planting design methodology to maximize erosion-resisting effects (sand loss due to wind, storm, water and littoral erosion) of upper beach vegetation as part of aggressive effort to use bioengineering to slow or halt Deer Island erosion.	\$337,134	30.376N – 88.849W Deer Island, MS Sound
MS-UC-124	Univ. of So. MS	New Beginnings - Marine Education Center at Cedar Point	Construct in two phases over four-yr period new Marine Education Center at 224-ac Cedar Point campus to be administered by USM and Gulf Coast Research Laboratory. Will replace former 34,000 sq ft J. L. Scott Marine Education Center and Aquarium at Point Cadet in Biloxi that was destroyed by Hurricane Katrina.	Phase 1 and 2 will initiate and complete construction of two 30,000 to 35,000 sq ft facilities having classrooms, offices, laboratories, teaching aquariums, public restrooms, behind the scenes areas. The second facility constructed under phase 2 will also include gift shop/bookstore, distance-learning/computer laboratory and virtual cave depicting underwater Gulf of Mexico. These facilities are designed to educate regarding the interconnectedness of all species and the fragility of this watery planet.	\$8,000,000	30.39334722N – 88.78084722W Ocean Springs
MS-UC-125	MS Gulf Coast Community	Native Vegetation & Estuarine Plan Nursery	Advance a healthier and more sustainable coastal ecosystem by preparing individuals for careers in	Establish greenhouse nursery for laboratory for educational purposes and germination and grow-out for	\$500,000	30.391139N-88.645936W

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Project No.	Applicant	Project	Goals	Objectives	Amount	DD Coordinates Location
	College, Jackson Co. Campus	Addition to Pascagoula River Basin Estuarine Education Center	management of natural resources and environments and supporting the long-term maintenance and re-vegetation of coastal habitats.	native grasses and other plants for re-vegetation/restoration of estuaries and watersheds in coastal MS. Develop coalition to research, develop and implement "best practices" for revegetation and provide community outreach education. Training for successful management of coastal natural resources and environment.		MS Gulf Coast Community College Gautier, MS on Mary Walker Bayou
MS-UC-126	MS State University GeoResources Institute	Infinity Center Project	Construct state of the art science center and visitor attraction on 199-ac site, on I-10 outside gates of Stennis Space Center, to provide sustainability demonstration and outreach and education opportunities that support current needs for NASA and other agencies to educate public on space, marine and environmental sciences.	Build Mississippi's first comprehensive science center and world class facility to educate and expose public to space, marine and earth science in exciting way in order to motivate young people and adults to get involved in these discipline areas. Provide venues for professional conferences and meetings associated with science missions at Stennis Space Center, as well as interactive displays and associated natural environs open to public access and exploration.	\$ 500,000	30.322777N- 89.595277W
Total Funds Applied For:					\$36,336,728	

APPENDIX G

PUBLIC NOTICES AND RESPONSES TO SOLICITATION OF VIEWS ON ENVIRONMENTAL ASSESSMENT

PUBLIC NOTICE

MISSISSIPPI GULF COAST NATIONAL HERITAGE AREA DRAFT ENVIRONMENTAL ASSESSMENT AND MANAGEMENT PLAN

Hancock, Harrison, Jackson, Pearl River, Stone and George Counties in coastal Mississippi were designated the Mississippi Gulf Coast National Heritage Area in 2004, and a Management Plan was developed for this area in 2005. The mission of this Heritage Area is to promote understanding of and to conserve and enhance the heritage resources of the six counties of the Mississippi Gulf Coast by telling the area's nationally significant story to residents and visitors through activities and partnerships that celebrate the area's unique history, people, traditions and landscapes. A hard copy of the Environmental Assessment for management of the Heritage Area and a hard copy of the Management Plan are available for a 30-day review period at the following locations:

Bay St. Louis-Hancock County Public Library, Bay St. Louis, MS
Lucedale-George County Public Library, 507 Oak St, Lucedale, MS
Margaret Reed Crosby Memorial Library, 900 Goodyear Blvd, Picayune
Margaret Sherry Memorial Library, 2141 Popps Ferry Rd, Biloxi, MS
Pascagoula Public Library, 3214 Pascagoula St, Pascagoula, MS
Stone County Public Library, 242 Second St SE, Wiggins, MS

MS Department of Marine Resources, CRMP, 1141 Bayview Ave, Biloxi, MS

The Mississippi Department of Marine Resources, Comprehensive Resource Management Plan (MDMR-CRMP) and the National Park Service are requesting that any comments or questions regarding the Environmental Assessment be submitted in writing, via mail, email or fax, to the following address within 35 days of the publication of this public notice:

**Mississippi Department of Marine Resources
Comprehensive Resource Management Plan
Mississippi Gulf Coast National Heritage Area
1141 Bayview Avenue
Biloxi, MS 39530
(228) 523-4121 Phone
(228) 523-4179 Fax
Grant.Larsen@dmr.ms.gov
www.dmr.state.ms.us**

For more information relating to this Environmental Assessment or the Mississippi Gulf Coast National Heritage Area, please contact Mr. Grant Larsen, MS Dept. of Marine Resources at (228) 523-4121.

See <http://www.dmr.state.ms.us/> Under Public Notices, *Public Notice: Mississippi Gulf Coast National Heritage Area Draft Environmental Assessment and Management Plan Available.*

Public Notices **270**

PUBLIC NOTICE
MISSISSIPPI GULF COAST
NATIONAL HERITAGE
AREA
DRAFT ENVIRONMENTAL
ASSESSMENT
AND MANAGEMENT PLAN
Hancock, Harrison, Jackson,
Pearl River, Stone, and
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3214 Pascagoula St,
Pascagoula, MS

Stone County Public Library,
242 Second St SE, Wiggins,
MS

MS Department of Marine
Resources, CRMP, 1141
Bayview Ave, Biloxi, MS

The Mississippi Department
of Marine Resources, Com-
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CRMP) and the National Park
Service are requesting that
any comments or questions
regarding the Environmental
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writing, via mail, email or fax,
to the following address within
35 days of the publication of
this public notice:

Mississippi Department of
Marine Resources

Comprehensive Resource
Management Plan

Mississippi Gulf Coast
National Heritage Area

1141 Bayview Avenue

Biloxi, MS 39530

(228) 523-4121 Phone

(228) 523-4179 Fax

Grant.Larsen@dmr.ms.gov

www.dmr.state.ms.us

For more information relating
to this Environmental Assess-
ment or the Mississippi Gulf
Coast National Heritage Area,
please contact Mr. Grant Lar-
sen, MS Dept. of Marine
Resources at (228) 523-4121.

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United States Department of the Interior

FISH AND WILDLIFE SERVICE

Mississippi Field Office
6578 Dogwood View Parkway, Suite A
Jackson, Mississippi 39213

December 3, 2007

Ms. Rhonda Jenkins-Price
MS Dept. of Marine Resources
1141 Bayview Avenue
Biloxi, MS 39530

Dear Ms. Jenkins-Price:

The U.S. Fish and Wildlife Service (Service) has received your letter dated November 26, 2007, requesting a basic review for the Mississippi Gulf Coast National Heritage Area Draft Environmental Assessment for activities in Pearl River, Stone, George, Jackson, Harrison, and Hancock Counties. Your agency is requesting an agreement for certain activities that have historically had no direct impact on federally listed species. Our comments are submitted in accordance with the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.).

Although the main goals of the Heritage Area management plan involve activities that include little or no earth disturbance, such as development and dissemination of information, some activities, such as the support of acquisition and infrastructure construction by other entities with a common interest, have the potential for disturbing listed species. We understand that projects will be evaluated individually over the course of this management plan. Therefore, we advise that the following counties have federally listed species that could be affected by any potential future **habitat disturbing** activities:

Terrestrial Species

George, Hancock, Harrison, Jackson, Pearl River, Stone Counties

The threatened gopher tortoise (*Gopherus polyphemus*) inhabits well-drained sandy soils, especially in areas of longleaf pine. The gopher tortoise digs a burrow used as a shelter and nesting area. Groups of these tortoises dig burrows in the same location forming a colony. Gopher tortoises are attracted to the low growing vegetation normally found on utility ROWs. In addition, the threatened eastern indigo snake (*Drymarchon corais couperi*) is known to inhabit gopher tortoise burrows.

George, Harrison, Jackson, and Stone Counties

The endangered red-cockaded woodpecker (*Picoides borealis*) excavates nesting cavities in mature pine trees (60+ years old). A mated pair of birds and all helper birds forms a clan. A cluster of cavity trees where the clan nests and roosts is called a colony. All cavity trees, active and inactive, are important to the colony and should therefore be avoided. Also, older (30+ years) pine stands within a half-mile of a colony should be considered foraging habitats and should not be disturbed.

George, Hancock, Jackson, Harrison, Pearl River, and Stone Counties

The federally listed threatened Louisiana black bear (*Ursus a. luteolus*) occurs primarily in bottomland hardwood and floodplain forests along the Mississippi River and the southern part of the state. Although the bear is capable of surviving under a range of habitat types, some necessary habitat requirements include hard mast, soft mast, escape cover, denning sites, forested corridors, and limited human access. Forest management practices, agricultural, commercial and industrial development, and highways can cause adverse impacts to bear habitat by increasing human disturbance, fragmenting forests, and removing den trees.

George, Pearl River, and Stone Counties

The black pine snake (*Pituophis melanoleucus ssp. lodingi*), a Candidate Species, prefers uplands with well-drained sandy soils in areas of longleaf pine and hardwood tree species. Candidates are those species currently under review for possible addition to the federal listed of threatened or endangered species. All efforts should be made to avoid harm or harassment to this species.

Plants

George, Hancock, Harrison, Jackson, Pearl River, and Stone Counties

The endangered plant Louisiana quillwort (*Isoetes louisianensis*) is a nonflowering grasslike plant that lives in water or in very wet habitats. Mature plants are six to ten inches long, mostly evergreen, with spore-bearing structures below ground.

Aquatic species

Jackson and Stone Counties

The threatened yellow-blotched map turtle (*Graptemys flavimaculata*) is found in the Chickasawhay, Leaf, and Pascagoula Rivers. The yellow-blotched map turtle prefers river stretches with moderate currents, abundant basking sites, and sand bars. Stream modification has significantly contributed to the decline of the species.

Pearl River County

The threatened ringed map turtle (*Graptemys oculifera*) is found in the Pearl River. It prefers river stretches with moderate currents, abundant basking sites, and sand bars for nesting. Stream modification in the Pearl River, such as flood control and urban development, has significantly contributed to the decline of the species. Also, water quality degradation has posed a serious problem for the turtle.

George, Hancock, Harrison, Jackson, and Pearl River Counties

The threatened Gulf sturgeon (*Acipenser oxyrinchus desotoi*) is found in the Pearl, Leaf, and Pascagoula Rivers. Gulf sturgeons are primitive, anadromous fish that annually migrate from the Gulf of Mexico into freshwater streams. Subadults and adults spend eight to nine months each year in rivers. Although Gulf sturgeon activity is not well documented, the species has been found in the river as far north as the Jackson metropolitan area. The decline of the Gulf sturgeon is primarily due to limited access to migration routes and historic spawning areas, habitat modification, and water quality degradation. Critical Habitat has been designated along the Mississippi Gulf Coast, and the Pearl, Leaf, and Pascagoula Rivers.

George and Jackson Counties

The pearl darter (*Percina aurora*), a Candidate Species, is found only in the Pascagoula River system. The darter prefers stable gravel riffles or sandstone exposures with large sized gravel or rock. Habitat loss or degradation has been a major contributor to the reduction in pearl darter numbers. Candidates are those species currently under review for possible addition to the federal listed of threatened or endangered species. All efforts should be made to avoid harm or harassment to this species.

Coastal species

Hancock, Harrison, and Jackson Counties

The endangered Brown pelican (*Pelecanus occidentalis*) nests mostly on offshore islands, but has been known to nest in onshore estuaries. Nesting areas are usually in low shrubs, trees or on the ground, and contain groups of 25-250 birds. They also congregate to feed near coastal wharves and pilings. Disturbance of nesting areas should be avoided.

The threatened Piping Plover (*Charadrius melodus*) does not nest in Mississippi but winters along the coastal beaches and barrier islands. These feeding areas have been threatened by urban development. Hence, Critical Habitat has been designated along several areas of the Mississippi Gulf Coast.

The endangered Mississippi Sandhill Crane (*Grus canadensis pulla*) is found only in a small area west of the Pascagoula River in Jackson County. Critical Habitat has been established on and adjacent to the Mississippi Sandhill Crane National Wildlife Refuge.

The endangered Mississippi gopher frog (*Rana capito sevosa*) historically was found along the Mississippi and Louisiana Gulf Coast, however, small populations of the frog can be found in Harrison and Jackson Counties.

The endangered Alabama red-bellied turtle (*Pseudemys alabamensis*) is found in the lower Pascagoula River and its tributaries: Bluff Creek and the Escatawpa River. It is also found in Old Fort Bayou, the Tchoutacabouffa River, the Biloxi River, and the Back Bay of Biloxi. Destruction of nesting areas along river banks and feeding areas of submerged aquatic vegetation and reduced water quality have impacted this species.

Statewide

The threatened bald eagle (*Haliaeetus leucocephalus*) is the only species of sea eagle regularly occurring on the North American continent. The bald eagle is predominantly a winter migrant in the southeast; however, increasing occurrences of nesting have been observed. The bald eagle nests in the transitional area between forest and water. They construct their nests in dominant living pines or bald cypress trees. Eagles often use alternate nests in different years with nesting activity beginning between September and January of each year. Young are usually fledged by midsummer.

Although the bald eagle was officially removed from the List of Endangered and Threatened Species as of August 8, 2007, it continues to be protected under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA). Should any of the proposed work activities be located near an active bald eagle nest, we recommend that construction activities be conducted in accordance with the Service's National Bald Eagle Management Guidelines (www.fws.gov).

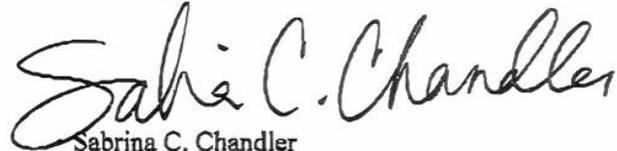
Additional Comments

All of the above listed species are very sensitive to human disturbance. Therefore, before the use or transportation of any heavy construction equipment, the removal of any vegetation within potential habitats, or any other potentially disturbing activities, the Service recommends a qualified biologist conduct a visual survey for these species. Areas surveyed should also include ingress and egress areas, equipment storage areas, and staging areas. If any of these species or their habitats is identified, further consultation with the Service will be necessary.

Also, the Service would recommend a revision of Section 3.6 Threatened and Endangered Species, in the Mississippi Gulf Coast National Heritage Area Draft Environmental Assessment dated June 30, 2007. This section neglects to mention the Gopher Tortoise as a federally threatened species. Section 3.6 should also be updated to reflect the listing of the Mississippi Gopher Frog as endangered, and the delisting of the Bald Eagle. As described above, the Bald Eagle continues to be protected under the BGEPA and the MBTA.

If you have any additional questions, please feel free to contact this office, telephone: (601) 321-1135.

Sincerely,

A handwritten signature in cursive script that reads "Sabrina C. Chandler". The signature is written in black ink and is positioned above the printed name and title.

Sabrina C. Chandler
Wildlife Biologist



March 11, 2008

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Tina Shumate

Ms. Department of Marine Resources
Office of Coastal Management & Planning
1141 Bayview Avenue, Suite 101
Biloxi, MS 39530

Dear Ms. Shumate:

On behalf of the Land Trust for the Mississippi Coastal Plain, I thank you for the opportunity to comment on the draft environmental assessment and management plan for the Mississippi Gulf Coast National Heritage Area. The Land Trust would like to extend its support for the management plan and believes that it will help promote the long-term integrity of the natural resources, traditions, and history of the Mississippi Gulf Coast.

Sincerely,

Judy Steckler
Director

jr/



Office of the Mayor
A.J. Holloway

March 19, 2008

Tina Shumate
Ms. Department of Marine Resources
Office of Coastal Management & Planning
1141 Bayview Avenue, Suite 101
Biloxi, MS 39530

Dear Ms. Shumate:

On behalf of the City of Biloxi, I thank you for the opportunity to comment on the draft environmental assessment and management plan for the Mississippi Gulf Coast National Heritage Area. The City of Biloxi would like to extend its support for the management plan and believes that it will help promote the long-term integrity of the natural resources, traditions, and history of the Mississippi Gulf Coast.

Sincerely yours,

A handwritten signature in black ink that reads "A. J. Holloway".

A. J. Holloway
Mayor
City of Biloxi

AJH/bj

140 Lameuse St.
P. O. Box 429
Biloxi, MS 39533
228-435-6254
Fax: 228-435-6129

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City of Pass Christian

*PO Drawer 368
Pass Christian, MS 39571
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*Louis Rizzardi, Alderman Ward 1
Joseph Piernas, Alderman Ward 2
Anthony Hall, Alderman Ward 3
Huey Bang, Alderman Ward 4
Philip Wittmann, Alderman-at-Large*

Leo "Chipper" McDermott, Mayor

March 18, 2008

Tina Shumate
MS Department of Marine Resources
Office of Coastal Management & Planning
1141 Bayview Avenue, Suite 101
Biloxi, MS 39503

Dear Ms Shumate:

On behalf of the City of Pass Christian, I thank you for the opportunity to comment on the draft environmental assessment and management plan for the Mississippi Gulf Coast National Heritage Area. The City would like to extend its thanks and support for the management plan and believes that it will help promote the long-term integrity of the natural resources, traditions, and history of the Mississippi Gulf Coast that has been such a big part of the entire Gulf Region for over 300 years.

Sincerely,

Leo "Chipper" McDermott
Mayor City of Pass Christian



IN REPLY REFER TO:

United States Department of the Interior

National Park Service
Gulf Islands National Seashore
1801 Gulf Breeze Parkway
Gulf Breeze, Florida 32563



K18 (GUIS-I)

March 14, 2008

Tina Shumate
Department of Marine Resources
Mississippi Coastal Heritage
1141 Bayview Ave.
Biloxi, MS 39530

Dear Ms. Shumate:

Thank you for providing Gulf Islands National Seashore with multiple copies of the Mississippi Gulf Coast National Heritage Area Management Plan. This resource will provide the interpretive staff with valuable background information on the Mississippi Gulf Coast. In addition, we have suggested that the Davis Bayou Visitor Center exhibit contractor, Amaze Design from Boston, Massachusetts, use the management plan as a source of comprehensive record of inventory data.

We appreciate your continued interest in and cooperation with Gulf Islands National Seashore.

Sincerely,

Jerry A. Eubanks
Superintendent





April 21, 2008

Ms. Tina Shumate
Director, CRMP
Mississippi Department of Marine Resources
1141 Bayview Drive
Biloxi, MS 39530

Dear Ms. Shumate:

The Historic Preservation Division of the Mississippi Department of Archives and History (MDAH) has received and reviewed the Mississippi Gulf Coast National Heritage Area Draft Environmental Assessment. MDAH enthusiastically endorses the primary goals and strategies for addressing cultural and historical resources, as expressed in the management plan for the Mississippi Gulf Coast National Heritage Area. We concur that the proposed actions will not have an adverse impact on those resources, but rather should do much toward enhancing and preserving the resources.

We would particularly like to complement the Draft EA for sound acknowledgment that the rapid pace of development on the Coast poses a serious threat to the cultural/ historical resources, especially archaeological resources, which often are overlooked. Inclusion of archaeology in the proposed heritage tourism efforts of the National Heritage Area, together with an effort to educate the residents about why these resources are important, seems to be the most likely way of creating a preservation program that will endure. Obviously, sustained support for such a program must come from the local level in order to be continued in the future, and this seems to propose a plausible method for instilling public awareness and appreciation of archaeological resources.

We are very happy to see that MDAH's extensive databases inventorying historic and archaeological sites have been used to help develop and update the tables of heritage resources. However, I did not notice a citation of the source of the database materials in the counts and appendices of archaeological sites or historic structures. If I have overlooked the citation, I certainly apologize, but if not, we would appreciate such a citation being added. Since documents such as this one are often used in the future for research and reference, it would be good to cite the main repository of the inventory databases.

Again, MDAH compliments the work of the Mississippi Gulf Coast National Heritage Area and is happy to endorse the Draft EA. If there are additional questions, please do not hesitate to contact me.

Sincerely,

A handwritten signature in blue ink, appearing to read "Ken P. Pool".

Kenneth H. P'Pool
Deputy State Historic Preservation Officer

Mississippi Department of Marine Resources
Comprehensive Resource Management Plan
Mississippi Gulf Coast National Heritage Area
1141 Bayview Ave.
Biloxi, MS 39530
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