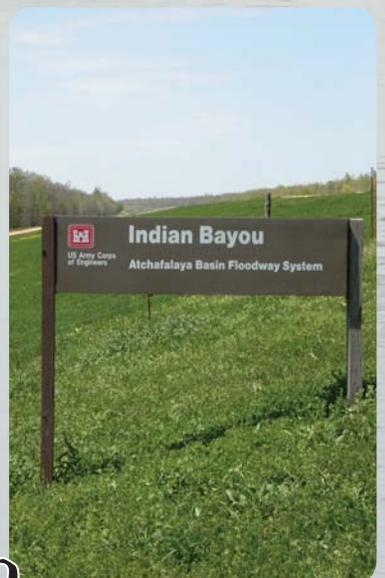
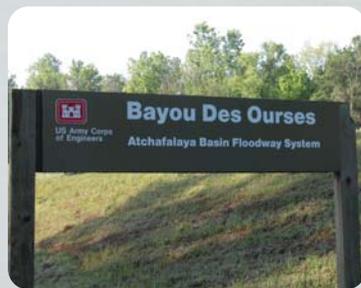


Draft



US Army Corps
of Engineers®
New Orleans District

Atchafalaya Basin Floodway System Project, Louisiana Master Plan



June 2012

1 **EXECUTIVE SUMMARY**

2
3 The United States Army Corps of Engineers (USACE) New Orleans
4 District (MVN) has updated the 2000 Atchafalaya Basin Floodway
5 System (ABFS) Project, Louisiana Master Plan; this document
6 supersedes the previous ABFS Project Master Plan. This Master
7 Plan provides a comprehensive guide for use and development of
8 the natural and man-made resources of the ABFS Project.
9 Additionally, the Master Plan provides resource objectives, an
10 overall land and water management plan, and associated design
11 and management concepts.
12

13 **BACKGROUND**

14
15 The ABFS is an integral component of the Atchafalaya Basin,
16 Louisiana, Project (ABLP), which is part of the Mississippi River
17 and Tributaries (MR&T) Project. The MR&T was authorized by the
18 Flood Control Act of 1928 and subsequently modified by numerous
19 acts. The ABFS was the subject of a 1982 Feasibility Report, and
20 was authorized by Congress in the Supplemental Appropriations
21 Act of 1985 and the Water Resources Development Act of 1986.
22 The area of the ABFS physically comprises a portion of the Lower
23 Atchafalaya Basin Floodway and is defined by authorized project
24 features to provide public access, environmental protection, flood
25 control through flowage and developmental control easements,
26 water management, canal closures and water circulation
27 improvements, and recreational development in the Lower
28 Atchafalaya Basin Floodway. The geographic area of the ABFS is
29 coterminous with the Lower Atchafalaya Basin Floodway and is
30 roughly defined as the lands and waters held in project fee
31 ownership and comprehensive easements in the area south of U.S.
32 Highway 190 situated between the East and West Atchafalaya
33 Basin Protection Levees, and extending to the vicinity of Morgan
34 City, Louisiana. The ABFS encompasses an area of approximately
35 595,000 acres. It does not include the area of the Lower
36 Atchafalaya River below Morgan City or the Avoca Island area.
37

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

1 Conservation Commission, parish sheriff's offices, parish officials,
2 and mayors and municipal officials from nearby towns.
3 Additionally, several public information meetings were held, in
4 addition to the regular review period, to provide the public, Federal
5 and state agencies, and elected officials an opportunity to comment
6 on the draft Master Plan. Comments received during the public and
7 agency review period were reviewed and incorporated into the final
8 Master Plan where applicable.
9

10 One of the goals achieved over the past 12 years has been the
11 acquisition of 10,500 acres of fee title lands from St. Martin Land
12 Company in 2001. The new property adjoins the Indian Bayou
13 Area to the South and expanded the Indian Bayou Area to
14 approximately 28,500 acres. The ABFS Project Management
15 Office has also completed individual projects (i.e., walking trails,
16 parking areas) to promote and improve access on Federal public
17 access lands.
18

19 **PURPOSE**

20

21 The purpose of this Master Plan update is to provide guidance for
22 further improvements needed to maximize public access and use of
23 public lands, and enhance fish and wildlife resources, while
24 minimizing adverse impacts to the existing biological and physical
25 environment throughout the project area, within the limits and
26 authority of the Federally-authorized project.
27

28 **MAJOR FEATURES OF THE MASTER PLAN UPDATE**

29

30 The Master Plan update focuses on expanding and further
31 developing public access and use of public lands, and enhancing
32 fish and wildlife resources, while minimizing adverse impacts to the
33 existing biological and physical environment throughout the project
34 area. Future management and development of the ABFS consists
35 of improving management of existing uses and potential
36 development of facilities and actions with non-Federal sponsor(s).
37

38 **A. Potential On-Site Management**

39

- 40 ➤ further development of nature trails to provide
41 increased opportunities for wildlife observation for
42 persons of varying physical capabilities;
- 43 ➤ expansion of ATV trails to address overuse problems
44 and provide access to areas of public interest for
45 persons of varying physical capabilities;
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- additional site amenities and sanitary facilities at access/parking areas as required by public use patterns;
- possible primitive camping area(s) with minimal site development and provision of sanitary facilities where appropriate;
- additional development of the project’s interpretive services and outreach program to facilitate public access and increase enforcement of project policies and rules; and
- acquire road and channel easements and purchase in-holding, when seller is willing, to provide access to noncontiguous Federally owned lands.

B. Potential Facilities for Development

- provide an interpretive trail and outdoor education area along Indian Bayou;
- provide fishing piers/observation deck at oxbow on IBA;
- establish an outdoor classroom at oxbow on IBA;
- establish a project office in the southeastern portion of IBA; and
- establish a ranger shelter at oxbow on IBA.

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SECTION 1.0
INTRODUCTION



1 **1.0 INTRODUCTION**

2
3 **1.1 INTRODUCTION**

4
5 United States Army Corps of Engineers (USACE), Mississippi
6 Valley Division (MVD), New Orleans District (MVN) is in the
7 process of updating the Atchafalaya Basin Floodway System
8 (ABFS) Master Plan. The previous Master Plan for the ABFS,
9 approved in 2000, sought to provide a comprehensive guide for
10 use and development of the natural and man-made resources of
11 the ABFS. Additionally, the 2000 Master Plan provided resource
12 objectives, an overall land and water management plan, and
13 associated design and management concepts.
14

15 The intent of this Master Plan update document is to examine and
16 assess the 2000 Master Plan and bring it up to date. An overall
17 planning and project management approach has been utilized to
18 refine management guidelines for the project's man-made and
19 natural resources and to prepare a comprehensive plan of
20 development for future project features and activities. To achieve
21 the intent of an updated Master Plan, this document will address
22 evolving and future regional and ecosystem needs, the capabilities
23 of project resources, the suitability of resource objectives, and
24 expressed public interests and desires concerning the project.
25

26 This report is organized into 14 major sections, including this
27 introduction. Natural, cultural, and social resources within and in
28 the vicinity of the ABFS are provided in Section 2.0. Section 3.0
29 provides a description of the ABFS. Factors influencing and
30 constraining resource use, development, and management are
31 discussed in Section 4.0. Resource use objectives are discussed
32 in Section 5.0 and a land classification plan for development and
33 resource management is discussed in Section 6.0. The Bayou Des
34 Ourses Area, Indian Bayou Area, and Shatters Bayou Area are
35 discussed in Section 7.0, 8.0, and 9.0, respectively. Lands
36 acquired for the ABFS (ABFS) flood control and environmental
37 protection features are discussed in Section 10.0. Section 11.0
38 discusses recreation development lands acquired by the non-
39 Federal sponsor(s). Water management units are discussed in
40 Section 12, and Section 13.0 discusses the implementation and
41 management issues, concerns, and recommendations associated
42 with the ABFS. The validation and approval for the Master Plan is
43 provided in Section 14.0. References utilized in the preparation of
44 the Master Plan update are provided in Appendix A. A list of
45 acronyms and abbreviations used in the Master plan are provided
46 in Appendix B. Maps and drawings used to support the text are

1 provided as figures in Appendix C. Public Comments from
2 meetings to solicit public input held in December 2010 are provided
3 in Appendix D. The Memorandum of Understanding (MOU)
4 between USACE and the State of Louisiana is provided in
5 Appendix E. Additional authorities for the ABFS are discussed in
6 Appendix F. Statistics regarding agricultural and wild production
7 enterprises are provided in Appendix G. An example of an annual
8 management plan is provided in Appendix H. Outgrants
9 associated with the ABFS project are provided in Appendix I. The
10 ABFS interpretive plan developed as part of the Master Plan
11 update is provided in Appendix J. Justification for a new project
12 office is provided in Appendix K. Justification for the Bayou
13 Fordoche natural area is provided in Appendix L. Easement
14 estates are provided in Appendix M.

15 16 **1.2 PURPOSE AND SCOPE**

17
18 The purpose of this document is to update the Master Plan for the
19 Atchafalaya Basin Floodway System Project completed in 2000.
20 The primary purpose of the master plan update is to evaluate
21 current management practices and public concerns in order to
22 develop a comprehensive plan that will maximize public access and
23 use of public lands, and enhance fish and wildlife resources, while
24 balancing sometimes competing interests and minimizing adverse
25 impacts on the existing biological and physical environment
26 throughout the project area.

27
28 ***A major update to***
29 ***the 2000 Master***
30 ***Plan is the***
31 ***acquisition and***
32 ***addition of 10,500***
33 ***acres of public***
34 ***access lands***
35 ***adjoining the Indian***
36 ***Bayou Area.***

37
38 Of particular relevance to this master plan update is the November
39 2001 acquisition of 10,500 acres of additional public access lands.
40 This acquisition included St. Martin Land property adjoining the
41 Indian Bayou Area (IBA), including the northern portion of
42 Henderson Lake. This addition to the public access lands occurred
43 after approval of the original project master plan and introduced
44 management issues and concerns not addressed in the approved
plan. Therefore, a major focus of the update is to provide guidance
for these additional project lands and waters.

38
39 A public scoping process was undertaken in December 2010 to
40 identify public concerns and interest in the development and
41 management of project features, with specific focus on
42 management of the public access lands. The comments received
43 were compiled and fully considered by the project master plan
44 team in preparation of this plan update. A summary of the public
meetings and comments received are provided in Appendix D.

1 The ABFS is an integral component of the Atchafalaya Basin,
2 Louisiana, Project (ABLP), which is part of the Mississippi River
3 and Tributaries (MR&T) project. The MR&T was authorized by the
4 Flood Control Act of 1928 and subsequently modified by numerous
5 acts. The 1982 Feasibility Study Report (discussed below) lists all
6 authorizations affecting the ABLP area prior to 1982.
7

8 The Atchafalaya River is the largest of all distributaries of the
9 Mississippi River and as such plays a huge role in efforts to
10 manage the MR&T project. The entire Atchafalaya Basin is located
11 in south-central Louisiana, encompassing approximately 1 million
12 acres, and extends from the confluence of the Mississippi, Red,
13 and Atchafalaya rivers near Simmesport, Louisiana, to the Gulf of
14 Mexico south of Morgan City. The predominant factor in the
15 analysis of any part of the ABLP is the requirement of the project to
16 function properly and adequately during major flood events. All
17 other objectives of actions within the ABLP must be subordinate to
18 this goal.
19

***The Atchafalaya
Basin encompasses
approximately
1 million acres.***

20 Improvements in the upper Atchafalaya Basin include a system of
21 levees, locks and other structures that manage water flow. The
22 Lower Atchafalaya Basin Floodway is bounded on the north by the
23 latitude of Krotz Springs, Louisiana (approximately the alignment of
24 U.S. 190), on the east and west by the Atchafalaya Basin
25 protection levees, and extends south to Morgan City and through
26 the Lower Atchafalaya River and Wax Lake Outlet to the Gulf of
27 Mexico. The Lower Atchafalaya Basin Floodway encompasses
28 approximately 838,000 acres, of which about 48 percent is either
29 publicly owned, carries easements, or is state-owned water
30 bottoms.
31

32 The ABFS covered in this Master Plan was the subject of the 1982
33 Feasibility Report and was authorized by Congress in the
34 Supplemental Appropriations Act of 1985 and the Water Resources
35 Development Act (WRDA) of 1986 (amendments are discussed
36 further in Section 1.4, below). The area of the ABFS physically
37 comprises a portion of the Lower Atchafalaya Basin Floodway and
38 is defined by authorized project features to provide public access,
39 environmental protection, flood control through flowage and
40 developmental control easements, water management, canal
41 closures and water circulation improvements, and recreational
42 development in the Lower Atchafalaya Basin Floodway. The
43 geographic area of the ABFS is coterminous with the Lower
44 Atchafalaya Basin Floodway and is roughly defined as the lands
45 and waters held in fee ownership and comprehensive easements in
46 the area south of U.S. Highway 190 situated between the East and

***The ABFS is an
integral component
of the ABLP which
is a part of the
MR&T project.***

1 West Atchafalaya Basin Protection Levees and extending to the
 2 vicinity of Morgan City (Appendix C, Figure 1). The ABFS
 3 encompasses an area of approximately 595,000 acres. It does not
 4 include the area of the Lower Atchafalaya River below Morgan City
 5 or the Avoca Island area.
 6

7 The ABFS has three areas of lands held in fee title by the United
 8 States: the IBA (approximately 28,500 acres), the Bayou des
 9 Ourses Area (BDOA) (approximately 17,000 acres), and the
 10 Shatters Bayou Area (SBA) (approximately 2,359 acres) for a total
 11 of approximately 47,850 of 70,000 acres currently authorized
 12 (Appendix C, Figure 2).
 13

14 These component areas each include non-contiguous tracts. The
 15 U.S. government currently has approximately 144,000 acres (of an
 16 authorized total of 367,000 acres) of environmental easements on
 17 private lands within the ABFS for purposes of developmental
 18 control and environmental protection. The U.S. Fish and
 19 Wildlife Service (USFWS) owns approximately 15,200 acres
 20 within the ABFS. Louisiana Department of Wildlife and
 21 Fisheries (LDWF) manages the BDOA as part of the Sherburne
 22 Complex (Photograph 1-1) and the SBA as part of the
 23 Attakapas Wildlife Management Area, for USACE. Of the 595,000
 24 acres in the ABFS area, about 445,000 acres are in private
 25 ownership with 150,000 acres owned by the State of Louisiana.
 26
 27
 28
 29
 30
 31
 32
 33



Photograph 1-1. LDWF Sherburne Complex

Table 1-1. ABFS Land ownership

	Authorized		Current		Total
U.S. Fee Title Lands	70,000	IBA	28,500	Managed by USACE	47,850*
		BDOA	17,000	Managed by State as part of Sherburne WMA	
		SBA	2,359	Managed by State as part of Attakapas WMA	
U.S. Environmental Easements on Private Land	367,000		97,000		
U.S. Fish & Wild. Serv.			15,200	Managed by State as part of Sherburne WMA	
State of LA		Sherburne	11,800		44,000
		Attakapas	25,500		27,800
Private Ownership			445,000		

* Approximate acreage

1 The ABFS has two mutually supporting goals besides its
2 overarching necessity to ensure that the Lower Atchafalaya Basin
3 can pass a flood as required by the MR&T project. These goals
4 were articulated in the 1982 Feasibility Report:

5 *The purpose of the*
6 *ABFS is to ensure*
7 *that the Lower*
8 *Atchafalaya Basin*
9 *can pass a flood as*
10 *required by the*
11 *MR&T project.*

- 1) To retain and restore the unique environmental features of the floodway and maintain or enhance the long-range productivity of the wetlands and woodlands.
- 2) To maximize public opportunity to observe and utilize the fish and wildlife resources of the floodway.

12
13 The public access lands of the ABFS are associated with the
14 environmental goal of maintaining or enhancing productivity of the
15 habitat (i.e., allowing the management of timber for fish and wildlife
16 habitat improvement), as well as preserving existing aesthetic
17 values to benefit the public access user.

19 **1.3 PERTINENT MEMORANDA AND REPORTS**

20
21
22
23
24 *The ABFS is the*
25 *major outlet for*
26 *flood flows on the*
27 *Mississippi River.*

28 The Flood Control Act of 1928 authorized the MR&T project and
29 created the Atchafalaya Basin Floodway as the major outlet for
30 flood flows on the lower Mississippi River. Early efforts in the
31 1930s and 1940s focused on construction of the guide levees and
32 dredging of the Atchafalaya River to improve its capacity. In 1954,
33 a major effort was initiated to accelerate the formation of the
34 Atchafalaya River main channel. The program involved dredging to
35 enlarge the channel, adding spoil banks to confine the flows, and
36 closing off some 22 distributaries for water management. Around
37 this same time, studies indicated the risk of capture of the
38 Mississippi River by the Atchafalaya River led to construction of Old
39 River Control in 1963.

34 **1.3.1 Design Memoranda and Draft Environmental Impact Statement**

35 A preliminary Master Plan, Design Memorandum No. 33A (dated
36 April 1967) presented a plan for construction of 31 access areas in
37 the Atchafalaya Basin Floodway. Not all of these access areas are
38 located south of U.S. Highway 190, but all are in the area referred
39 to as the Atchafalaya Basin. The Chief of Engineers, by second
40 endorsement dated 15 September 1967, approved 26 of these
41 areas for detailed planning and deferred the other five, pending
42 further consideration. The parish police juries refused the required
43 local cooperation on two sites. Local interests developed three
44 sites. The Bayou Courtableau control structure was deferred,
45 pending decision on location and design of the structure.

1 In 1968, dredging of the main channel was discontinued due to
2 limited funds and the fact that the dredging had become an
3 environmentally sensitive issue. Passage of the National
4 Environmental Policy Act in 1969 and pressure by the National
5 Wildlife Federation led USACE to agree in 1971 to cease dredging
6 work on the main channel until an environmental impact statement
7 (EIS) was completed.
8

9
10
11
12
13
14
15 ***In 1972, the***
16 ***U.S. Congress***
17 ***directed USACE to***
18 ***develop a plan for***
19 ***the management***
20 ***and preservation of***
21 ***water and land***
22 ***resources in the***
23 ***Atchafalaya Basin.***
24

25 The 1971 agreement was followed by Congressional direction in
26 1972 for USACE to look beyond simple flood control and to
27 develop a plan “for the management and preservation of the water
28 and related land resources of the Atchafalaya River Basin.”
29 USACE responded by forming the Atchafalaya Basin Steering
30 Group to oversee the planning process. This group included the
31 National Wildlife Federation, Louisiana Department of
32 Transportation and Development (DOTD), Louisiana Wildlife and
33 Fisheries Commission, USFWS, U.S. Environmental Protection
34 Agency (EPA), and Louisiana State University (LSU) School of
35 Environmental Design. A public use plan, Design Memorandum
36 No. 34 (dated August 1972), was subsequently prepared,
37 proposing Federal construction of the remaining 20 access sites
38 that would be locally operated and maintained. This public use
39 plan was reviewed as part of the overall ABFS Feasibility Study of
40 1982. In addition, a comprehensive analysis was made of all the
41 Basin's recreational resources, with a view toward maximizing
42 public accessibility and use while minimizing adverse impacts on
43 the existing biological and physical environment. Most of the
44 recommendations were incorporated into the 1982 Feasibility
45 Study.
46

39 ***In 1978, USFWS***
40 ***proposed that***
41 ***USACE acquire***
42 ***443,000 acres of***
43 ***floodway land***
44 ***between Krotz***
45 ***Springs and Morgan***
46 ***City.***

39 In 1976, a draft EIS was forwarded to the Assistant Secretary of the
40 Army for Civil Works. After meetings with local and National
41 environmental groups, the document was returned to MVN with the
42 direction to study both authorized and unauthorized features to
43 address the need for resource preservation and management.
44 Further planning and coordination followed, as well as numerous
45 public meetings.
46

39 In October 1978, USFWS published a brochure entitled, “The
40 Atchafalaya, America’s Greatest River Swamp.” The brochure
41 proposed that 443,000 acres of floodway land between Krotz
42 Springs and Morgan City be acquired by USACE to establish the
43 “Atchafalaya Fish, Wildlife, and Multi-Use Area.” Mineral rights
44 would be retained by the present owners, but timber harvest would
45 be managed for the primary purpose of optimizing fish and wildlife
46 productivity and natural beauty. Flood control would be under the

1 jurisdiction of USACE, while management for fish and wildlife and
2 public use would be the joint responsibility of USFWS and LDWF.
3 Commercial crawfishing, fishing, trapping, sport hunting, and
4 general public use would be maximized.
5

6 **1.3.2 The Feasibility Study and Final EIS**

7 The ABFS Feasibility Study of 1982 was undertaken in order to
8 develop a comprehensive plan for flood control and environmental
9 protection in the Atchafalaya Basin Floodway. The feasibility study
10 had to address a number of related environmental and natural
11 resource issues.
12

13 As a major tributary of the Mississippi River in early stages of
14 development, the Atchafalaya River and basin are in a dynamic
15 state of change. In the upper reaches, primarily above Interstate
16 Highway 10 (I-10), the floodplain had filled in with sediments and
17 the higher ground was being developed for intensive agriculture,
18 primarily in soybeans. It was projected that as the filling in of the
19 basin progressed southward the land conversion would expand
20 further into the basin. The clearing of land for agriculture was at
21 that time considered the major threat to the natural environment.
22

23 The basin as a whole is “drying out” as the result of this massive
24 sedimentation and the fact that the main channel has become
25 more efficient, thereby reducing flows into the backswamps.
26 Sedimentation into the lakes and swamps has raised elevations
27 and resulted in loss of wetland habitat. Arising from this was the
28 desire to manage the water and sediment distribution in the basin.
29

*The purpose of the
ABFS Feasibility
Study was to
develop a
comprehensive plan
for flood control
and environmental
protection for the
ABFS.*

30 The demand for increased public access to the resources of the
31 basin was recognized as a significant problem for the ABFS project
32 to address. All areas of the lower floodway are used extensively for
33 hunting, fishing (commercial and recreational), camping, and other
34 wilderness recreation activities. However, organized hunting
35 camps prevent public access to most of the private lands in the
36 basin.
37

38 The need for land use controls in the lower floodway for both flood
39 control and environmental purposes was becoming more pressing
40 as the conversion from wilderness to residential, agricultural, and
41 industrial land uses was increasing as the basin became higher
42 and drier. Timber harvesting and oil and gas exploration are the
43 predominant economic activities in the basin and the environmental
44 consequences of these activities heightened the environmental
45 concerns.

1 Public meetings were held throughout Louisiana in January 1979 to
2 present a wide range of alternatives and to obtain public
3 comments. Public access was probably the most controversial
4 issue during the planning process. Opinions varied across the
5 spectrum from the purchase of the basin for total public access to
6 no provisions for public access beyond the 150,000 acres of
7 existing State of Louisiana lands.
8

9 The EIS recognized the likelihood of conflicts between traditional
10 commercial use of the basin and the growing recreational uses of
11 the natural resources (see pages EIS-182 and 183). While many
12 features of the compromise plan would be beneficial to the
13 traditional users of the basin (crawfishers and commercial fishers)
14 by slowing the deterioration of natural conditions, the greatly
15 increased recreational use resulting from expanded public access
16 and recreational development would result in competition over
17 declining resources. Another negative impact on traditional users
18 is the disruption of access routes as water management units are
19 implemented.
20

21 A tentatively selected plan was presented in a draft feasibility
22 report/EIS, which was released to the public on June 22, 1981.
23 Public meetings were held again in July 1981 to obtain public
24 opinion on the report. The final report, with the Recommended
25 Plan, was submitted for approval in January 1982. The plan was
26 approved by the Chief of Engineers, using discretionary authority
27 under existing authorization, on February 28, 1983, with the
28 following exceptions: a decision on whether or not to extend the
29 Avoca Island Levee to provide backwater protection for the areas
30 east of Morgan City would be made after further study, acquisition
31 of real estate, and the construction of recreational facilities; and
32 circulation improvements and construction of management units
33 were approved pending Congressional authorization.
34

35 The recommendations of the ABFS Feasibility Study of 1982 may
36 be summarized as follows:
37

- 38 • **Flood Control** – Implement a flood control system that will
39 safely convey a project design flood to the Gulf of Mexico in
40 an environmentally sound manner. Reduce to the maximum
41 extent practicable the deposition of sediments that reduce
42 the ability of the floodway to support a project flood. Flowage
43 easements on 59,000 acres and developmental control
44 easements on 367,000 acres to be obtained.

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9 **The goals of the**
10 **ABFS are to**
11 **manage water and**
12 **sediment**
13 **deposition, retain**
14 **and restore the**
15 **unique**
16 **environmental**
17 **features of the**
18 **floodway, manage**
19 **agricultural and**
20 **mineral**
21 **development,**
22 **maximize public**
23 **access, enhance**
24 **recreational**
25 **opportunities, and**
26 **maximize delta**
27 **formation in**
28 **Atchafalaya Basin.**

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36 **The ABFS was**
37 **authorized in the**
38 **Supplemental**
39 **Appropriations Act**
40 **of 1985 and WRDA**
41 **of 1986.**

- **Environmental Protection** – Retain and restore the unique environmental features of the floodways and maintain or enhance the long-range productivity of the wetlands and woodlands. In addition to developmental control rights, environmental protection rights are included in a comprehensive, multi-purpose easement on 367,000 acres; two “pilot” water management units (Buffalo Cove and Henderson Lake), with implementation of future units at the discretion of the Chief of Engineers; and miscellaneous canal closures and water circulation improvements.
 - **Agricultural Activities and Mineral Development** – Allow agricultural activities and mineral development, provided such activities do not interfere with the goals relative to flood control or the natural environment.
 - **Delta Formation** – Maximize natural delta formation in Atchafalaya Bay while providing for navigation and passage of a project flood.
 - **Public Accessibility** – Maximize public opportunity to observe and utilize the fish and wildlife resources of the Atchafalaya Basin Floodway. The recommended plan for public access (see page 71 of the 1982 report) provided for the fee title purchase, excluding minerals, of approximately 50,000 acres from willing sellers with Federal costs limited to \$32 million. The State of Louisiana is to provide additional public access on 150,000 acres of state-owned land, and more than 30,000 acres will be donated by Dow Chemical Company.
 - **Recreational Development** – Fee simple title, excluding minerals, on 1,500 acres to be developed as campgrounds, boat launches, and other facilities.
- In accordance with the recommendations of the 1983 Chief of Engineers Report, the ABFS project was authorized by Congress in the Supplemental Appropriations Act of 1985, Public Law (PL) 99-88, and WRDA of 1986, PL 99-662. The authorization has been amended by WRDA of 1988, PL 100-202; WRDA of 2000, PL 106-541; and WRDA of 2007, PL 110-114.

1 **1.3.3 Real Estate Design Memoranda (REDM)**

2 **1.3.3.1 REDM No. 1**

3 The (Basic) Real Estate Design Memorandum for the Atchafalaya
4 Basin Floodway system, "Real Estate Design Memorandum No. 1
5 (2nd Revision)," was forwarded to President, Mississippi River
6 Commission (MRC), on August 22, 1988. This basic REDM
7 requested authority to proceed with the acquisition of the necessary
8 real estate interests for the flood control, environmental, and public
9 access features of the ABFS project. The REDM was approved by
10 USACE Headquarters on October 25, 1988. The current fee estate
11 was approved by memorandum from USACE Headquarters on
12 December 12, 1990.

13
14 **1.3.3.2 REDM Supplement No. 1**

15 The supplement to the basic REDM was a letter to President,
16 MRC, submitted October 19, 1992. The purpose of the
17 supplement was to request approval of a revised Flowage,
18 Developmental Control, and Environmental Protection Easement,
19 and a revised Developmental Control and Environmental Protection
20 Easement. The revised language of these easements arose from
21 a compromise plan, which was a fully coordinated agreement
22 among Federal and state agencies, environmental groups,
23 landowners, and forestry interests. This supplement met the
24 requirements of the ABFS Feasibility Study of 1982 and
25 supplemental environmental compliance documentation. Approval
26 also was requested to proceed with purchase of 50,000 acres in
27 fee from willing sellers, exclusive of minerals, for the public access
28 feature of the ABFS, and that the lands acquired for the State of
29 Louisiana's Sherburne Wildlife Management Area (SWMA) and
30 USFWS' Atchafalaya National Wildlife Refuge (ANWR) would not
31 be credited as a part of the project's public access feature.

32
33 The letter supplement was approved and endorsed by USACE
34 Headquarters on January 25, 1994, with the provision that Federal
35 expenditure for the first cost of the public access feature would be
36 limited to the \$32 Million cap set forth in Paragraph 3 of the Chief's
37 Report of February 28, 1983.

38
39 **1.3.3.3 REDM Supplement No. 2**

40 One topic that surfaced during the months-long discussions with
41 the first REDM supplement was that the "willing seller" limitation on
42 the public access feature of the ABFS resulted in the acquisition of
43 a number of land-locked fee tracts. The public access feature was
44 authorized, among other reasons, to maximize public opportunity to
45 observe and utilize the fish and wildlife resources of the ABFS.

1 The ABFS, REDM Memorandum No. 1 (Revised) - Supplement No.
2 2, dated May 1996, was submitted June 21, 1996. The purposes
3 of this supplement were to get approval of (a) the concept of
4 acquiring road, channel, and other easements on an as-needed
5 basis, and (b) acquisition of road and other easements over
6 specific sites identified as "needed now." The supplement was
7 approved by CERE-AP 2nd Endorsement on December 12, 1996.
8

9 **1.3.3.4 Atchafalaya River Landing, Simmesport, Louisiana, Project**

10 A preliminary reconnaissance-level report, evaluating USACE
11 participation in the construction of a public access boat ramp and
12 associated facilities near the Town of Simmesport, Louisiana, in
13 Avoyelles Parish, on the right descending bank of the Atchafalaya
14 River, was completed in April 1996. Congress appropriated funds
15 and approved the project as an element of the authorized
16 recreation feature of the ABFS in the aforesaid PL 104-206.
17 Construction of the Simmesport Boat ramp began in 2004 and has
18 been completed.
19

20 **1.3.4 State Master Plan**

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26 *The State Master*
27 *Plan was approved*
28 *by the Louisiana*
29 *State Legislature in*
30 *1999.*
31

32 In 1996, Louisiana Governor Foster directed the Louisiana
33 Department of Natural Resources (LDNR) to be the lead agency in
34 the development of a state plan to meet the State's responsibility
35 as a partner with USACE for the implementation of the Federally
36 authorized ABFS project. The State's Atchafalaya Basin Advisory
37 Committee (ABAC) was created in 1997, and the following year
38 ABAC delivered the State Master Plan for the Atchafalaya Basin.
39 At the same time, the Louisiana Legislature created the
40 Atchafalaya Basin Program (Program) as an agency within the
41 office of the Secretary of LDNR. The Program consists of the
42 Atchafalaya Basin Research and Promotion Board, the ABAC and
43 the staff for the boards and commissions in the Program. Public
44 hearings on the State Master Plan were held across Louisiana in
45 August 1998. The full legislative package for the State Master Plan
was presented to the Louisiana State Legislature in the spring of
1999 and approved the same year.

On October 26, 1998, USACE and the State of Louisiana signed
an MOU (Appendix E), which recognized the mutual goals and
interests of USACE and the State of Louisiana in the Lower
Atchafalaya Basin Floodway; recognized the similarities of their
respective goals and Plans for the Lower Atchafalaya Basin
Floodway; and recognized that they should work together to
facilitate and execute the ABFS. All elements of the ABFS will be
accomplished through execution of Project Cooperation

1 Agreements between the government and the non-Federal
2 sponsor. Current additional authorities will be examined to
3 implement some of the elements of the state's Master Plan that are
4 not authorized under the ABFS. These authorities are listed in
5 Appendix F. Those elements of the State Master Plan that cannot
6 be implemented under the Federal ABFS authority or under other
7 existing USACE statutory authorities will require additional
8 Congressional authorization, funding, and programming authority in
9 order for USACE to participate in their implementation.

10
11 **1.3.5 2000 ABFS Project Master Plan**

12 The 2000 ABFS Master Plan was the first Master Plan developed
13 for the ABFS by USACE. Its purpose was to serve as a guide for
14 the use and development of the natural and constructed resources
15 of the project, as required by Engineering Regulation (ER)
16 Numbers 1130-2-540 and 1130-2-550, dated November 15, 1996.
17 The overriding goal was to develop a plan that, when executed,
18 would maximize public accessibility and use of public lands, and
19 enhance fish and wildlife resources, while minimizing adverse
20 impacts on the existing biological and physical environment
21 throughout the project area, within the limits and authority of the
22 Federally authorized project.

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28 ***The Master Plan***
29 ***guides the***
30 ***development and***
31 ***management of***
32 ***resources within***
33 ***the ABFS.***

24 The Master Planning effort was conducted in coordination with
25 Federal, state, and local agencies, as well as special interest
26 groups. The State of Louisiana was identified as the potential non-
27 Federal sponsor for the ABFS, with the exception of the
28 Atchafalaya River Landing, Simmesport, Louisiana, project, which
29 is sponsored by the Avoyelles Parish Police Jury. Primary state
30 coordination and involvement was focused through the ABAC and
31 formed in 1997 to specifically prepare a state plan that identifies
32 the long-term vision of the State of Louisiana in how the historical,
33 hydrologic Atchafalaya Basin should be used, developed, and
34 managed. Its concerns, suggestions, and recommendations were
35 fully incorporated into the Master Plan to the extent feasible and
36 allowable under existing statutory authorities of USACE and of the
37 ABFS.

38
39 Two Federal agencies, USFWS and National Park Service (NPS),
40 were contacted early in the planning process to contribute to the
41 development of the Master Plan. USFWS provided both informal
42 and formal coordination throughout the process. A planning-aid
43 report, dated April 1994, provided recommendations for the
44 management of fish and wildlife resources in the development of
45 the Master Plan. In addition, several agencies were contacted to
46 solicit their comments on the Master Plan and/or were participants

1 in the development of the state’s planning effort: EPA; Natural
2 Resources Conservation Service; U.S. Department of Commerce;
3 U.S. Department of Justice; and the U.S. Forest Service.
4

5 Several State of Louisiana agencies were contacted in the planning
6 process during the development of the Master Plan. Those state
7 agencies and representatives included the Louisiana departments
8 or offices of Agriculture and Forestry; Culture, Recreation, and
9 Tourism; Environmental Quality; Health and Hospitals; LDNR;
10 DOTD; LDWF; LSU; Office of the Attorney General; Office of the
11 Governor; Office of Indian Affairs; Atchafalaya Basin Levee District;
12 Red River, Atchafalaya, and Bayou Boeuf Levee Districts; State
13 Representatives; and State Senators.
14

15 Numerous local government representatives and agencies were
16 consulted in the development of the plan, and to the maximum
17 extent possible, local concerns were incorporated into the Master
18 Plan. These local governmental bodies included parish sheriff’s
19 offices, parish officials, and mayors and municipal officials from
20 nearby towns and cities.
21

22 Native American involvement in the planning process was
23 conducted as a part of the State’s planning effort through the State
24 of Louisiana’s Office of Indian Affairs. Federally recognized tribes
25 that were consulted included the Chitimacha and Tunica-Biloxi.
26

27 ***The 2000 ABFS***
28 ***Master Plan was***
29 ***coordinated with***
30 ***Federal and State***
31 ***agencies, public***
32 ***interests, and***
33 ***Federally***
34 ***recognized tribes.***
35

36 The following representatives of the public were contacted for their
37 comments on the Master Plan and/or participated in the State’s
38 planning effort: the Louisiana Nature Conservancy; Black Bear
39 Conservation Committee; National Audubon Society, Baton Rouge
40 and New Orleans chapters; Ducks Unlimited, Inc.; Association of
41 Louisiana Bass Clubs; Earth Justice Legal Defense Fund;
42 Louisiana Wildlife Federation; Sierra Club, Delta Chapter; National
43 Rehabilitation Resource Center; and Lynch Botanical Gardens, Inc.
44

45 In addition to internal USACE review, a public review phase was
46 implemented upon completion of the draft Master Plan. Several
public information meetings were held, in addition to the regular
review period, to provide the public, agencies, and elected officials
with an opportunity to comment on the draft plan. Comments
received during the public and agency review period were reviewed
and considered for incorporation into the final Master Plan.

1.3.6 Acquisition of St. Martin Land property for Public Access

47 In November, 2001 MVN completed the acquisition of
48 approximately 10,500 acres of lands and waters from the St. Martin

1 Land Company that immediately adjoin the existing IBA to the
2 south (Appendix C, Figure 3). The newly acquired property
3 consisted of seasonally flooded woodlands and the northern
4 portion of Henderson Lake extending to I-10; the
5 property was incorporated
6 into the IBA. In addition to
7 increasing the size of the IBA
8 from 18,000 acres to 28,500
9 acres, the newly acquired
10 property introduced new
11 natural resource and public
12 use concerns for the project.
13 Immediate management
14 concerns included the
15 conversion of private hunting
16 management to public
17 hunting and the removal of camps and houseboats from the newly
18 acquired property. Longer-term and still ongoing management
19 issues introduced or made more prominent include balancing the
20 interests of crawfishing, boating, duck hunting, and tour boat
21 operators (Photograph 1-2). These management issues are
22 addressed in this Master Plan update.
23
24



Photograph 1-2. Crawfish Catch on the
ABFS Project

1.3.7 Environmental Assessment, Public Access Land Improvements

26 In 2002 MVN completed an *Environmental Assessment (EA)*,
27 *Public Access Land Improvements, Atchafalaya Basin Floodway*
28 *System, St. Landry, St. Martin, and Iberville Parishes, Louisiana*
29 *(EA #345)*. Based on widespread public support for protection of
30 environmental resources within the ABFS, the action proposed was
31 to improve public access and maximize the public's opportunity to
32 observe and utilize the fish and wildlife resources within the IBA
33 and BDOAs. Proposed project actions consisted of removal of a
34 hunting camp and replacement with a boat launch facility,
35 construction of several new parking areas, improvements to several
36 existing parking areas, establishment of hiking and canoeing trails,
37 maintenance of existing all-terrain vehicle (ATV) and foot trails for
38 hunting access, continuation of various wildlife management
39 activities, and continuation of reforestation activities. These actions
40 were determined to have no impact on cultural resources, no
41 adverse impact on endangered or threatened species, and minimal
42 impacts on water bodies, wetlands, fisheries, wildlife, recreational
43 resources, or air quality. Several actions proposed have since
44 been completed for the BDOA and IBA, as discussed in Sections 7
45 and 8.

1 **1.3.8 Supplemental Environmental Impact Statement**

2 In 2005 the USACE initiated a Supplemental EIS (SEIS) for three
3 features of the ABFS. The SEIS is in support of implementing
4 construction and operation of the Henderson Lake Water
5 Management Unit (WMU) in St. Martin and St. Landry parishes,
6 which is one of two authorized pilot management units for the
7 Management Unit feature of the ABFS project; the freshwater
8 distribution structure element, of the Henderson Lake Area, ABL
9 project in St. Martin and St. Landry parishes; and the Recreational
10 Development feature of the ABFS project in St. Martin, Iberia, St.
11 Mary, Iberville, St. Landry, and Pointe Coupee parishes. Following
12 consultation with various governmental agencies, public scoping
13 meetings, and development of alternative plans of action, the draft
14 planning and SEIS report is scheduled for public release later in
15 2012.

16
17 The list of resources and issues to be evaluated in the SEIS
18 includes wetlands (marshes and swamps), aquatic resources,
19 commercial and recreational fisheries, wildlife resources, water
20 quality, air quality, threatened and endangered species, recreation
21 resources, and cultural resources. Socioeconomic items to be
22 evaluated in the SEIS include navigation, flood protection, business
23 and industrial activity, employment, land use, property values,
24 public/community facilities and services, tax revenues, population,
25 community and regional growth, transportation, housing,
26 community cohesion, and noise.

27
28 The proposals for the freshwater distribution structure element of
29 the Henderson Lake Area ABL project, the recreational
30 development feature of the ABFS project, and the Henderson Lake
31 WMU element of the management unit feature of the ABFS project
32 are being investigated in the same document because the
33 operation of the Henderson Lake WMU will have an impact on the
34 nature and scope of recreational development that can take place
35 in the area affected by the Henderson Lake WMU. In addition, the
36 implementation of the management unit and freshwater distribution
37 feature will also have significant impacts on the IBA lands and
38 waters owned and managed by USACE under the public access
39 feature.

40
41 **1.3.8.1 Management Units and Diversion Structures**

42 The authorized goals of the management unit feature of the ABFS
43 project are to improve water quality and interior water circulation;
44 remove barriers to reestablish north-to-south water flow; provide
45 input of oxygenated low temperature water; and reduce or manage
46 sediment input into the interior swamp. Action is necessary due to

1 ***The goals of the***
2 ***management unit***
3 ***feature are to***
4 ***improve water***
5 ***quality, reestablish***
6 ***north-to-south***
7 ***water flow, increase***
8 ***oxygenated water,***
9 ***and reduce or***
10 ***manage sediment***
11 ***input into the***
12 ***interior swamp.***

the existing poor water quality resulting from the lack of internal circulation and oxygenated water inputs, as well as increased sedimentation. In addition, if action is not taken, both deep water habitat and shallow water habitat utilized by fish and wildlife resources will continue to be lost, reduced, or degraded. The intended result of the proposed work is to prolong the life expectancy of the productive habitat (primarily aquatic and cypress tupelo habitats) by restricting or redirecting sediments, while simultaneously achieving a healthy water circulation pattern that would maintain or restore water quality and reestablish north-to-south water movement.

The Henderson Lake Management Unit in St. Martin and St. Landry parishes represents one of two pilot management units authorized by WRDA of 1986 for the management unit feature of the ABFS project in accordance with the ABFS Feasibility Study of 1982 and the accompanying EIS. Because the Henderson Lake WMU constitutes one of the “pilot” management units for the management unit feature of the ABFS project, the SEIS will clearly identify the possibility that additional future work may be recommended in the Henderson Lake WMU. This will be the case if the analysis of the operational monitoring data supports a finding that the Henderson Lake WMU elements proposed for construction in the 1982 EIS do not fully accomplish the goals and objectives of the authorized management unit feature of the ABFS project.

The Henderson Lake WMU is hydrologically separate and independent from the other pilot management unit (Buffalo Cove Management Unit), and from the three conditionally authorized management units of the ABFS: Cocodrie Swamp, Flat Lake and Beau Bayou. Additionally, the management unit objectives, public interests, and concerns that will be addressed at the Henderson Lake WMU differ substantially from those present for the Buffalo Cove, Flat Lake, Cocodrie Swamp, and Beau Bayou management units. As such, Buffalo Cove, Flat Lake, Cocodrie Swamp, and Beau Bayou will be the subject of a separate SEIS. The Flat Lake, Beau Bayou, and Cocodrie Swamp management units have passed the preliminary planning and assessment phase but have not yet entered the construction phase.

In an October 2006 scoping report, the USACE identified three major challenges within the Henderson Lake WMU: hydrology, environment/habitat, and environmental quality. With regard to hydrology, the use, control, and function of the water control structures at the northern and southern end of the WMU was the main concern, followed by restoring the area's water flow patterns.

1 Constructing a freshwater distribution structure to increase water
2 flow throughout the Henderson Lake WMU was an additional
3 concern. Habitat issues that are considered a primary component
4 of the project include the control of invasive aquatic vegetation,
5 protecting the native habitat, and the effects of initiating these
6 activities.

7
8 The authorized goal of the freshwater distribution structure feature
9 of the Henderson Lake Area ABL project is to encourage water
10 movement through the Henderson Lake WMU for the benefit of the
11 aquatic environment by providing water inflow to the Henderson
12 Lake area and, together with the Henderson Lake Management
13 Unit, restoring overflow patterns to the extent practicable.

14
15 The Henderson Lake Management Unit project remains in the
16 planning stage. Proposed actions, benefits, and alternatives are
17 being identified, as well as additional details such as dredging
18 dimensions and the size of gaps to be cut to restore water flow
19 patterns. USACE planning group, consisting of state and Federal
20 agencies, is holding regular meetings to complete the planning
21 documents. An EIS is also being prepared.

22
23 The Buffalo Cove WMU project is in the lower basin in Iberia, St.
24 Martin, and St. Mary parishes. USACE began construction on
25 Buffalo Cove in 2004, and the project was estimated to benefit
26 more than 7,500 acres initially. When complete, the Buffalo Cove
27 WMU will benefit 53,000 to 58,000 acres. USACE received funding
28 through the American Recovery and Reinvestment Act of 2009 to
29 complete construction of additional elements of the project.
30 Construction Element 9-2 was completed in 2010. The USACE is
31 acquiring easements for the remaining elements prior to
32 construction. Plans for construction may proceed after completion
33 of easement acquisition. USACE is required to monitor the
34 project's effectiveness for a 5-year period after the last element is
35 constructed.

36
37 The Sherburne freshwater diversion structure at Big Alabama
38 Bayou was authorized by WRDA of 1986 in accordance with the
39 plan recommended in the 1982 Feasibility Study. The plan included
40 construction of freshwater distribution structures from the
41 Atchafalaya River to provide water inflow into the Alabama Bayou
42 area. To date, no funds have been allocated to this effort by
43 USACE, and this project remains in the planning stage. USACE is
44 evaluating appropriate funding mechanisms that may be utilized for
45 this project.

1 **1.3.8.2 Recreational Development Feature**

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6 *The recreational*
7 *development*
8 *feature will include*
9 *primitive camping*
10 *sites, a project*
11 *visitor center,*
12 *interpretive trails,*
13 *hiking trails, and a*
14 *sport fishing pond.*

The goals and objectives of the recreational development feature of the ABFS project include the development of facilities such as boat launching ramps for the provision of interior and peripheral access to the ABFS project area (including those lands acquired for the public access feature of the ABFS project), as well as the construction and operation of developed and primitive campgrounds, an interpretive facility, and other facilities complementary to the public enjoyment of outdoor recreational activities and the observation and utilization of the fish and wildlife resources of the Lower Atchafalaya Basin Floodway. Public demand and expectations for the ABFS have increased due to an increased awareness and use of the vast ABFS natural resource and the involvement of MVN through management and partial ownership of the resource. MVN will address public concerns for management of the Henderson Lake WMU, as well as recreational development opportunities within the ABFS, through the SEIS.

The development of the recreational development feature of the ABFS project will include, but is not limited to, campgrounds for recreational vehicles, tents, and primitive camping; paddling, hiking and biking trails; interpretive trails; bird watching facilities; boat launches; a project visitor center; and certain special and unique areas. These facilities will accommodate and support public-use in the ABFS, provide for additional entry into the ABFS to access its resources, and protect and aid in interpreting specific environmentally and culturally significant resources.

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29 **1.3.9 East Grand Lake Study**

A supplemental study to the Channel Training Above Morgan City Design Memorandum is being conducted to determine how to ameliorate water quality and circulation problems induced by the channel training works. The study encompasses the area between the Atchafalaya Basin Main Channel and the East Atchafalaya Basin Protection Levee, south of Bayou Sorrel, and north of Flat Lake.

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38 **1.3.10 Operational Management Plan (OMP)**

The OMP is a dynamic document that is updated yearly. The purpose of this document is to detail USACE procedures and to plan and implement yearly activities. The non-Federal sponsors for the project will submit yearly management plans for their respective areas, and these plans will be incorporated into the OMP. The OMP follows the guidance of the Master Plan and is mainly used for planning specific projects to accomplish the Master Plan

1 objectives. Further detail on the OMP and some of its
2 requirements for coordination with non-Federal sponsors is outlined
3 in Section 14 of this Master Plan update.
4

5 The approved Master Plan serves as the basis for the preparation
6 of the OMP. Using the goals and objectives set forth in the Master
7 Plan, the OMP is prepared as a separate document that provides in
8 detail the specific operation and maintenance requirements for the
9 natural resources and park management. These details include
10 equipment needs, implementation costs, funding, and staffing
11 requirements. Upon completion of the updated Master Plan, the
12 OMP will be updated to meet the goals and objectives of the
13 updated Master Plan.
14

15 **1.3.11 ABFS Louisiana, Lower Atchafalaya Basin Reevaluation Study**

16 The purpose of the Lower Atchafalaya Basin Reevaluation (LABR)
17 study is to reevaluate the features of the 1982 Feasibility Study
18 and, where necessary, develop plans that provide for the ABLP to
19 continue to carry out its system function as part of the overall
20 MR&T project in a manner that is consistent with the National
21 objectives of economic development and environmental
22 stewardship. In response to the removal of the Wax Lake Outlet
23 Control weir, the LABR study was authorized by the U.S. Senate
24 Report to the 1994 Energy and Water Development Appropriations
25 Bill (PL 103-126) dated October 28, 1993. This bill authorized
26 USACE to use available funds to investigate conditions at the Wax
27 Lake Outlet, Bayou Black, and other features to develop a
28 recommendation for modifications desirable for flood protection,
29 navigation, and environmental management. USACE issued a
30 contract to perform the study in 1999. A draft of the Lower
31 Atchafalaya Reevaluation Report is currently under review at MVD
32 Headquarters office. The review is not yet complete as of early
33 2012. Once this review is complete the report will be made
34 available to the public. The recommendations of the LABR study
35 may affect aspects of the ABFS Master Plan.
36

37 **1.3.12 Historic Properties Management Plan**

38 The *Historic Properties Management Plan for the Atchafalaya*
39 *Basin Floodway System Project, South Louisiana* was completed in
40 2004. The primary goal of the plan was to outline a program for
41 compliance with historic preservation requirements on lands
42 managed by USACE on the approximately 595,000 acres of the
43 ABFS project. The statutory and regulatory bases of the Historic
44 Properties Management Plan were summarized, and previous
45 cultural resources research in the Atchafalaya Basin was reviewed.
46 Models of the distribution of terrestrial sites and shipwrecks were

1 developed. The impacts of past flood control and navigation
2 projects in the Atchafalaya Basin on cultural resources were
3 summarized and the potential impacts of the various features of the
4 ABFS project were discussed. Finally, recommendations were
5 offered for prioritizing future cultural resources investigations and
6 for compliance procedures for specific project activities.
7

8 **1.4 UPDATED MASTER PLAN APPROVAL AND FUTURE DOCUMENTS**

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18 ***WRDA of 2007***
19 ***authorized the***
20 ***acquisition of an***
21 ***additional 20,000***
22 ***acres of land in the***
23 ***Lower Atchafalaya***
24 ***Basin Floodway.***
25

26 WRDA of 2007 had several features of relevance to the ABFS.
27 Section 3075 modified the public access feature of the ABFS to
28 authorize the Secretary to acquire from willing sellers the fee
29 interest (exclusive of oil, gas, and minerals) of an additional 20,000
30 acres of land in the Lower Atchafalaya Basin Floodway, and
31 removed the \$32,000,000 limitation on the maximum Federal
32 expenditure for the first costs of the public access feature. The
33 WRDA of 2000 was amended by Section 3075 to add Eagle Point
34 Park, Jeanerette, Louisiana, as one of the alternative sites for
35 recreational development. Section 3076 reiterated the primary
36 purpose of the ABFS project by stating that, notwithstanding the
37 recreational development feature of the project, the ABFS project
38 will be carried out for flood control. This section also stated that the
39 Secretary, acting through the Chief of Engineers and in
40 consultation with the State of Louisiana, shall study, design, and
41 construct a type A regional visitor's center in the vicinity of Morgan
42 City, Louisiana. The cost of construction of the visitor center shall
43 be shared in accordance with the recreation cost-share
44 requirement under section 103(c) of WRDA of 1986 (50 percent
45 Federal and 50 percent non-Federal): the non-Federal share of the
46 cost of upgrading the visitors center from a type B to type A
47 regional visitors center shall be 100 percent, and the Federal
government shall pay 100 percent of the cost of the operation and
maintenance of the visitor's center.

Title VII of WRDA of 2007 authorizes USACE to address the problem
of coastal land loss in the Louisiana Coastal Area (LCA). Title VII calls
for an investigation into the maximum effective use of water and
sediment from the Mississippi and Atchafalaya rivers for coastal
restoration purposes. By law, the Atchafalaya River must only receive
30 percent of the Mississippi River discharge. Reevaluation could lead
to a change in this law at the Federal level. A reevaluation of the
operation of the Old River Control Structure is part of this overall
investigation.

The approved master plan serves as the definitive guide for use
and development of the natural and man-made resources within
the ABFS. All actions by MVN and out grantees must be

1 *The Master Plan*
2 *guides the*
3 *development and*
4 *management of*
5 *resources within*
6 *the ABFS.*

consistent with the approved Master Plan. The Master Plan will be supplemented and appended as needed but should undergo a review at least every 5 years to incorporate all changes and be republished as the newest version. This updated Master Plan will be subject to revision as the ABFS is continually changing, new lands are acquired, new facilities are built, new structures, and studies are authorized and implemented.

The approved Master Plan serves as the basis for preparation of an OMP. The OMP is prepared as a separate document that provides in detail the specific operation and administration requirements for natural resources and park management. These details include implementation plans, funding, staffing, and equipment needs. Essentially, the OMP is the working document that implements the objectives and concepts contained in the approved Master Plan. The OMP is updated annually.

1.4.1 Master Plan Approval Process

This Master Plan, upon completion and review, is endorsed and signed by the various technical divisions within MVN, and the District Commander. The approved document serves as the definitive approved guide for the use and development of the natural and constructed resources in the ABFS.

1.4.2 Future Documents

The documents most needed in the future are the Project Partnership Agreements (PPAs) for all of the ABFS features. No PPAs can be negotiated until funding is received and the requirements of ER 1105-2-131 and Engineering Circular (EC) 1165-2-204 are in place. Additionally, negotiation of the PPAs for some of the ABFS features will await environmental compliance and preparation and approval of design memoranda (DM), feature design memoranda (FDM), REDM, and other decision documents for those features. The only features eligible for PPA negotiation at this time are the public access, flood control (flowage and developmental control easements), and environmental (environmental protection easements) features. The preparation of eligible PPA documents is underway with support from consultants under a task order issued under Contract No. W912P8-09-D-003. At the time of this master plan update, the draft PPAs for the public access, flood control, and environmental features are under review at MVD Headquarters office.

The reports identified in this section are directly related to various aspects of project planning, design, and implementation of the Master Plan. Some of these are under way and are scheduled for

1 completion and approval, while other aspects will be completed in
2 future years.
3

4 **1.4.2.1 Recreation Development Feature Design Memorandum (FDM)**

5 FDMs will be required to set out the site plans for the recreation
6 component of the ABFS. These FDMs will be prepared and
7 coordinated with the non-Federal sponsor and will be sufficient in
8 detail to prepare the plans and specifications (P&S) for facility
9 construction. The FDMs will be, in actuality, a series of separate
10 site plans, each specific to the location of the park and/or
11 recreation area to be constructed. A discussion of the recreation
12 features is contained in Section 11 of this Master Plan.
13

14 **1.4.2.2 Cultural Resources Survey, Mitigation, and Historic Properties** 15 **Management Plan**

16 Complete cultural resources surveys are required for all fee lands,
17 recreation features, and WMUs. If there are any significant cultural
18 resources, mitigation and site protection plans may be needed. A
19 separate Historic Properties Management Plan also may be
20 required pursuant to ERs. Cultural Resources investigations within
21 the ABFS have been limited, considering the vast size of Federal
22 land holdings. Those investigations conducted prior to 2004 were
23 summarized in the *Historic Properties Management Plan for the*
24 *Atchafalaya Basin Floodway System Project, Louisiana*, completed
25 in 2004. This study also included recommendations for future
26 cultural resource investigations and management procedures to
27 ensure compliance with Federal historic preservation laws and
28 USACE regulations. Specific Cultural Resource issues within the
29 ABFS are discussed further in Section 2 of this Master Plan update
30 and in the sections discussing the BDOA, IBA, and SBAs, as well
31 as easement lands and WMUs. Cultural Resource investigations
32 conducted since 2004 have had little impact upon the
33 recommendations of the 2004 Historic Properties Management
34 Plan but are outlined in this Master Plan update where relevant.
35

36 **1.4.2.3 Other Needed Documents/Plans**

37 In addition to the above reports and documents, there also will be a
38 number of DMs, REDMs, and P&S developed for construction
39 items for both recreational and non-recreational features of the
40 ABFS, including decision documents appropriate for the WMUs.
41 The SEIS (currently in draft form) largely addresses actions
42 covered by the 2000 plan but not addressed in the project EIS,
43 which were carried forward from the scoping phase of the SEIS
44 planning. These include the construction and operation of the
45 Henderson Lake WMU; the freshwater distribution structure

1 element of the Henderson Lake Area, ABL; and the recreational
2 development feature of the ABFS.

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SECTION 2.0
RESOURCES OF THE ABFS PROJECT AREA



2.0 RESOURCES OF THE ABFS PROJECT AREA

2.1 NATURAL AND CULTURAL RESOURCES

2.1.1 Climate

The climate of the ABFS project area is humid subtropical. The average annual normal temperature is 66.5 degrees Fahrenheit (°F), with monthly normal temperatures varying from 81.4 °F in July to 49.6 °F in January. Average annual precipitation in the ABFS area is 53.6 inches, varying from a 10-year minimum of 37.4 inches in 2005 to a maximum of 74.6 inches in 2009. Monthly normal precipitation varies from 6.02 inches in July to 4.15 inches in October. These data are based on the normal period 2001 to 2010. Using evaporation data for the period from 2001 to 2010, the average annual evapotranspiration rate is 65.0 inches, with the maximum occurring in 2008 at 139.0 inches and the minimum in 2004 with a total of 29.5 inches.

2.1.2 Hydrology, Geomorphology, Geology, and Minerals

The historic, hydrologic Atchafalaya Basin is a 3,000-square-mile basin, located in south-central Louisiana. The natural basin lies between the Mississippi and Lafourche Ridges on the east and the Teche Ridge on the west. The northern and southern boundaries are Old River, at the junction of the Red and Mississippi rivers and the Gulf of Mexico.

Generally, the ABLP transports 30 percent of the combined Mississippi River and Red River flows.

The ABFS is situated within the ABLP, which begins from the proximity of Old River and extends to the Gulf of Mexico. The ABLP area is bounded on the east by the East Atchafalaya Basin Protection Levee and on the west by the West Atchafalaya Basin Protection Levee. The ABLP consists of three channels and three floodways: the Atchafalaya River and Basin Main Channel, the Wax Lake Outlet, the Lower Atchafalaya River, Morganza Floodway, West Atchafalaya Floodway, and Lower Atchafalaya Basin Floodway. The ABLP generally transports 30 percent of the combined Mississippi River and Red River flow at the latitude of Old River to the Gulf of Mexico, except during extreme flood situations when the Morganza and/or West Atchafalaya Floodways are operated. In accordance with the authority contained in the Flood Control Act of 1928, as amended, the ABLP is designed to transport one-half of the MR&T system project flood, or 1,500,000 cfs, safely to the Gulf of Mexico.

The principal physiographic features of the ABLP area include natural levee ridges along bayous and former meander courses of

1 the Mississippi River; the Atchafalaya River and Basin Main
2 Channel with its constructed levees extending from Simmesport to
3 the vicinity of I-10 and the channel training works south of I-10;
4 Grand Lake and Six-Mile Lake; bottomland hardwoods in the
5 northern portion of the ABLP area; baldcypress-tupelo gum
6 swamps (Photograph 2-1) in the southern portion of the ABLP
7 area; the east and west Basin protection levees with their
8 associated borrow canals; and developing deltas in the
9 Atchafalaya Bay. Elevations in the ABLP area range from near
10 sea level in the deltas to 50 feet National Geodetic Vertical
11 Datum (NGVD) at Melville, in St. Landry Parish.



Photograph 2-1. Baldcypress-Tupelo Gum Swamp on ABFS Project Lands

18
19 Prior to the historic period diversion of the Mississippi and Red
20 rivers into the Atchafalaya Basin, sluggish streams and extensive
21 swamps and lakes occupied the area (Gagliano and van Beek,
22 1975). Freshwater input consisted almost entirely of local runoff, in
23 addition to limited overbank flooding from the Mississippi River.
24 Following Shreve's cutoff in 1831 and the removal of the raft
25 blocking the Atchafalaya River's mouth by 1855, the amount of
26 water and sediment flowing from the Mississippi and Red rivers into
27 the Atchafalaya River steadily increased. To control the flow and
28 sediment between the Mississippi and Atchafalaya rivers, the
29 USACE completed construction of the Old River Control Structures
30 in 1963. Additional project features have been constructed at Old
31 River over the last several decades to improve its flood control
32 function and harness the hydroelectric potential at the site.

33
34 Prior to 1932, a series of connected, bead-shaped lakes (Lake
35 Fausse Point, Grand Lake, Six-Mile Lake, and Flat Lake)
36 historically transported water through the Basin (Gagliano and van
37 Beek, 1975). In 1932, USACE began a program of dredging to
38 improve the discharge capacity of the Atchafalaya River. Between
39 1932 and 1940, a single channel, the Atchafalaya Basin Main
40 Channel, was dredged through the area connecting the upper
41 channel with the Lower Atchafalaya River. In the 1960s, until 1968,
42 USACE enlarged the channel.

43
44 Through time, most of the lakes in the ABLP have filled with
45 sediment; presently, only small remnants of the original lakes
46 remain (Gagliano and van Beek, 1975). Swamps and other

1 lowlands within the ABLP also have received enough sediment to
2 raise their bottom elevations. Increased elevations due to
3 sedimentation have effectively decreased the extent and duration
4 of overbank flooding throughout the ABLP and reduced its capacity
5 to carry floodwaters. That change in the flooding regime has
6 allowed bottomland hardwood forests to replace swamps and/or
7 lakes in many areas, with a corresponding net loss in aquatic
8 habitat.

9
10
11 ***Levees have***
12 ***confined water***
13 ***flows to the main***
14 ***channel of the***
15 ***Atchafalaya River.***
16

17 Today, the Atchafalaya River runs through a well-defined, leveed
18 channel through the upper portion of the ABLP. Construction of
19 levees and channel training works and selective closure of
20 distributary bayous and canals in the Lower Atchafalaya Basin
21 Floodway through 1968 have confined the majority of the flow to
22 the main channel. In the Lower Atchafalaya Basin Floodway, major
23 hydrologic features are Grand Lake and Six-Mile Lake, through
24 which the Atchafalaya Basin Main Channel passes.

25 Yearly since 1977, flow distribution between the Atchafalaya River
26 and Mississippi River has been regulated on a 70/30 basis. Thirty
27 percent of the combined flows of the Mississippi and Red rivers is
28 conveyed by the Atchafalaya River past Simmesport. The
29 remaining 70 percent is conveyed by the Mississippi River below
30 Old River. The average annual flow in the Atchafalaya River at
31 Simmesport between 1998 and 2010 was 227,000 cfs. High flow
32 normally occurs between January and June. The average annual
33 peak flow for the period 1998 through 2010 was 462,000 cfs. The
34 lowest flows generally occur between August and November. The
35 average annual low flow for the period 1998 through 2010 was
36 76,000 cfs (USACE 2011).

37 In the Lower Atchafalaya Basin Floodway, wind and tides also
38 influence river stages and discharges. Mean tide for the Lower
39 Atchafalaya River at Morgan City is greater than +1.3 feet NGVD.
40 The average annual peak stage for the period 1977 through 1998
41 was 6.1 feet NGVD. The average annual minimum stage for the
42 same period of record was 0.4 feet NGVD. The influence of diurnal
43 tides may extend inland approximately 60 miles.

44 **2.1.3 Topography and Soils**

45 Common soils throughout the Atchafalaya Basin include
46 Robinsonville-Commerce, Sharkey-Fausse, Sharkey-Commerce,
Convent, Fausse, Convent-Fausse, and Fausse-Sharkey (USFWS
1994). Most of these soils consist of recent alluvium, are hydric,
and are characterized by little profile development. With continued
sediment deposition, swamp and forest-floor elevations will

1 progressively rise. Natural and artificial hydrological changes will
2 contribute to differentiation of soil types.
3

4 A typical transect of soil types in the Atchafalaya Basin includes
5 floodplain environments forested with bottomland and swamp
6 forest tree species. Six major habitat types are defined by the
7 elevation-flood regime gradient, from permanent aquatic habitats at
8 the lowest elevation, to upland-transition habitats at the upper
9 elevation. Ecologists commonly identify these gradients as
10 Zones I-VI. Species composition of these habitats is considered in
11 more detail below.
12

13 Zone I aquatic habitats are open-water habitat that are
14 continuously flooded. Here at the lowest extremity of the elevation
15 gradient, standing water is present; soils are clayey and semi-fluid.
16 No tree or shrub growth is possible.
17

18 Zone II forested wetlands of swamps, sloughs, and oxbow lakes
19 have surface water present throughout the year, except in years of
20 extreme drought. The probability of annual flooding is near
21 100 percent. Soils are hydric, poorly drained clays, and semi-fluid
22 clays of the Maurepas, Barbary, and Fausse soil series that are
23 saturated for almost the entire growing season. Soil texture
24 consists of peats, mucks, clays, silt loams, loams, and sandy
25 loams. Constant anaerobic conditions limit plant diversity, with
26 vegetation consisting of baldcypress (*Taxodium distichum*), water
27 tupelo (*Nyssa aquatica*), black willow (*Salix nigra*), buttonbush
28 (*Cephalanthus occidentalis*), water elm (*Planera aquatica*), and
29 swamp-privet (*Forestiera acuminata*).
30

31 Zone III lower bottomland hardwood wetlands are semi-
32 permanently flooded, including a major part of the growing season.
33 Flooding duration usually exceeded 25 percent of the growing
34 season. Soils are hydric, poorly drained clayey deposits of the
35 frequently flooded and non-flooded phases of Sharkey and Alligator
36 soil series. Predominantly anaerobic conditions alternate with
37 aerobic conditions in soil textures of mucks, clays, loams, and
38 sands. Common vegetation includes overcup oak (*Quercus lyrata*),
39 bitter pecan (*Carya aquatica*), water locust (*Gleditsia aquatica*),
40 Nuttall oak (*Quercus texana*), black willow, swamp-privet,
41 persimmon (*Diospyros virginiana*), green ash (*Fraxinus*
42 *pennsylvanica*), and pumpkin ash (*Fraxinus profunda*).
43

44 Zones IV and V bottomland hardwoods are seasonally or
45 temporarily flooded, respectively. Zone IV habitats are subject to
46 short-duration flooding or saturation, with flood durations typically

1 between 12.5 percent and 25 percent of the growing season. Zone
2 V habitats have a typical flood duration of 2 percent to 12.5 percent
3 of the growing season. Common soils are the Sharkey
4 (occasionally flooded), Commerce, Dundee, Tensas, and Tunica
5 series. Soils are somewhat poorly drained, non-hydric silty clay
6 loams, silt loams, loams, and sands, influenced by a fluctuating
7 water table. Vegetation consists of sweetgum (*Liquidambar*
8 *styraciflua*), sugarberry (*Celtis laevigata*), willow oak (*Quercus*
9 *phellos*), bitter pecan, overcup oak, possumhaw (*Ilex decidua*),
10 greenhaw, Drummond red maple (*Acer drummundii*), persimmon,
11 green ash, American elm (*Ulmus americana*), and roughleaf
12 dogwood (*Cornus drummundii*). Common soils in Zone V are
13 predominantly aerobic silt loams, sandy loams, loams, and sands
14 of the Askew, Bruin, and Dobbs series, with anaerobic conditions
15 occurring only in the lower profile. Vegetation is similar to that of
16 Zone IV, with the addition of water oak (*Quercus nigra*) and black
17 gum (*Nyssa sylvatica*), and the absences of overcup oak.

18
19 Zone VI upland-transition forests are rarely, intermittently flooded at
20 a return period of 1 to 10 years per 100 years. Flood duration is
21 generally less than 2 percent of the growing season. Common
22 sands and loamy alluvium of the Dundee, Robinsonville, and
23 Crevasse series are well drained, aerobic, and non-hydric.
24 Vegetation is similar to that of Zone V, with the addition of
25 cherrybark oak (*Quercus pagoda*), swamp chestnut oak (*Quercus*
26 *michauxii*), live oak (*Quercus virginiana*), and loblolly pine (*Pinus*
27 *taeda*).

28 29 **2.1.4 Waters and Wetlands**

30 Construction of flood protection works, navigation features, and
31 access for the oil/gas industry in the Atchafalaya Basin have
32 altered the hydrology of the natural system (Gagliano and van
33 Beek, 1975). Historic north-to-south flow patterns have changed.
34 Pipeline canals and their spoil banks running east to west intercept
35 flow or prevent water from moving north to south. Water levels in
36 the southern portion of the Lower Atchafalaya Basin Floodway
37 have increased, further preventing north-to-south flow. When
38 water reaches overbank areas east and west of the main channel,
39 it frequently becomes stagnant, affecting dissolved oxygen levels.
40 Sedimentation continues to occur in the channels and remaining
41 water bodies.

42
43 Initially a vast expanse of overflow swamps, lakes, and stream
44 channels, the floodway now is in an advanced stage of succession
45 to a bottomland hardwood floodplain environment. This succession
46 has progressed in a north-to-south direction, as lakes have been

1 filled through delta building and minor channels have been
2 abandoned. Also, the swamp floor has been elevated by sediment
3 transported into the interior swamp through overbank flow and from
4 the Atchafalaya River and Basin Main Channel through its many
5 distributaries, including oil and gas canals.
6

7 The baldcypress-tupelo gum swamp provides the fundamental
8 basis for the commercial crawfish industry and, together with the
9 associated water bodies, serves as a spawning, nursery, and
10 feeding area for many commercial and sports fish species. It can
11 be concluded that the Basin is moving toward a single habitat of
12 bottomland hardwoods as a result of the current hydrological and
13 sedimentation processes. From the standpoint of the wildlife,
14 fisheries, and recreational resources, this is not a preferable
15 condition. It is the diversification in habitat that provides maximum
16 productivity on a long-term basis and, therefore, best serves all of
17 the users of the ABFS. It is also understood that the stagnant
18 deoxygenated water adversely affects fisheries, timber, and wildlife.
19

20 Freshwater environments range from permanent water bodies to
21 seasonally flooded forested wetlands that provide valuable escape,
22 feeding, spawning, and nursery habitat for a diversity of aquatic
23 organisms (USFWS 1993). The high productivity of aquatic
24 ecosystems in the Atchafalaya Basin is directly attributable to the
25 annual cycle of flooding and dewatering that is controlled by
26 Atchafalaya River discharges. Aquatic and terrestrial resources of
27 the ABLP's waterways and forested wetlands are closely tied to the
28 hydrologic regime. After the low-water period in September-
29 October, waters begin to rise in December-January to flood
30 vegetation and accumulated leaf litter in bottomland hardwood
31 forests and baldcypress swamps. Detrital material, sediments, and
32 associated nutrients are transported throughout the floodplain.
33 Microorganisms convert the submerged organic material into forms
34 useful to a diversity of aquatic plants and animals. During the high-
35 water period that lasts until May to June, aquatic organisms
36 reproduce in an expanding environment of abundant food and
37 space where predation is greatly diminished. Under these
38 conditions, rapid growth produces a high accumulation of biomass.
39 After the spring floods, water levels begin to recede in June to July.
40 Aquatic organisms become concentrated into smaller areas,
41 providing concentrated sources for predatory fish, reptiles,
42 amphibians, birds, and mammals. Thus, water bodies and
43 adjacent forested wetlands throughout the ABLP provide
44 outstanding fish and wildlife habitats.

***Habitats within
ABFS are highly
diverse and
productive as a
result of annual
flooding.***

1 The fish and wildlife resources of the ABLP historically have been
2 diverse and abundant, due to the variety and quality of available
3 aquatic habitats. Permanent aquatic habitats comprise about
4 11 percent of the ABLP's total area (USFWS, 1981). These
5 habitats include permanent water bodies and periodically flooded
6 wetlands of four major types: riverine and distributary channels,
7 freshwater bayous and canals, headwater lakes, and backwater
8 lakes. Some of these habitat types overlap during the annual flood
9 cycle. At high-water stages, for example, some bayous act as
10 distributaries, but return to slow-flowing conditions during low-water
11 stages. Certain lakes may have a headwater regime during high
12 flows, but water may enter at other times via backwater. In
13 addition, during much of the year, baldcypress swamps function as
14 aquatic habitats.

15
16 Atchafalaya River, Major Distributaries, and Main Stream Lakes.

17 The Atchafalaya River, its major distributaries (e.g., Whiskey Bay
18 Pilot Channel, East and West Distribution Channels, East and
19 West Access Channels, Gulf Intracoastal Waterway (GIWW)-Port
20 Allen Alternate Route, Lake Fausse Point Cut), and its main stream
21 lakes (Grand Lake and Six-Mile Lake) compose about 35 percent
22 of the ABLP. Consistently turbid waters characterize riverine
23 habitats in these large channels, moderate to fast currents, good
24 water quality, and especially heavy suspended sediment loads
25 during winter/spring maximum discharges. Temperature extremes
26 are greater and dissolved oxygen concentrations higher than in
27 other aquatic habitats of the Atchafalaya Basin. Stream banks are
28 steep, channels display minimum sinuosity, and substrates consist
29 of sand or hard clay.

30
31 Fresh Bayous, Canals, and Borrow Pits.

32 Small, slow-flowing
33 waterways are much more sinuous than riverine channels (e.g.,
34 Little Bayou Sorrel, Little Bayou Pigeon, Bayou Postillon, Alabama
35 Bayou). Borrow canals are straight and even slower flowing.
36 Borrow canals and bayou-type channels are usually less than 20
37 feet deep and often less than 6 feet deep. Borrow canals are
38 generally fairly steep-sided, whereas bayou banks are moderately
39 steep only in areas of high sediment deposition. Water quality
40 varies seasonally with river stage, with poor conditions and lower
41 dissolved oxygen concentrations occurring during the warm
42 summer months. Substrates generally contain detrital materials.

43 Headwater Lakes.

44 Headwater lakes are generally long and fairly
45 wide, ranging from 1 acre to several square miles in size (e.g., Flat
46 Lake, Duck Lake, and Grand Lake). Flowing waters distinguish
these habitats during the spring that transport flows, nutrients, and

1 sediments from the Atchafalaya River and Basin Main Channel.
2 Still-water conditions during summer, non-flood periods are
3 generally less than 9 feet deep. Headwater lakes are highly
4 productive, especially for crawfish, and serve as fishery refuges
5 during summer low-flow conditions.
6

7 Backwater Lakes. Backwater lakes (e.g., Cow Island and Lost
8 Lake, Henderson Lake, and Buffalo Cove Lake) receive a flow-
9 through flushing by river waters only during the highest flood stages
10 during much of the year. Water levels are influenced primarily by
11 rainfall and by waters backing into the area from downstream
12 during high stages. Shoreline profiles are gradual, and substrates
13 consist of pulpy peats. Water depths are generally less than 6 feet;
14 some backwater waterbeds may become completely dry during the
15 summer. Dissolved oxygen concentrations are generally lower,
16 and nutrients are less abundant than in headwater lakes. During
17 the winter, dissolved oxygen levels are usually sufficient for aquatic
18 life, but anaerobic conditions prevail during the summer. Disruption
19 of the Atchafalaya Basin's natural hydrology has isolated these
20 lakes from seasonal flushing and nourishment by high river stages,
21 while agricultural land uses have contributed to sediment and
22 nutrient loading that severely reduce the value of these habitats
23 (USFWS, 1993).
24

25
26
27
28
29 **Baldcypress-tupelo**
30 **gum swamps**
31 **support the highest**
32 **productivity of**
33 **crawfish.**
34

25 Baldcypress-Tupelo Gum Swamps. Swamps function as aquatic
26 habitat during much of the year (e.g., Buffalo Cove swamp).
27 Bottom substrates consist of clay and peat. The flooding regime of
28 swamps is similar to that of backwater lakes. Swamps often
29 support lower dissolved oxygen concentrations than other habitats
30 in the Atchafalaya Basin, even at higher water levels. Reduced
31 dissolved oxygen levels occur as the swamp floor is flooded in the
32 spring and plant material from the previous year decomposes.
33 When this low-oxygen water drains out of the swamp, it can cause
34 fish kills in adjacent habitats. The rich detrital substrates of
35 baldcypress-tupelo gum swamps are the most productive benthic
36 habitat in the Atchafalaya Basin and support the highest
37 productivity of red swamp crawfish (*Procambarus clarkia*).
38

39 Other Aquatic Habitats. Other aquatic habitats in the Atchafalaya
40 Basin area include cropland lakes; fresh marsh ponds; fresh
41 estuarine bays (e.g., Atchafalaya Bay and West Cote Blanche
42 Bay); brackish ponds, bayous, and bays (e.g., East Cote Blanche
43 Bay); saline ponds, bayous, and bays (e.g., Caillou Bay); and the
44 open Gulf of Mexico. The other aquatic habitat types are described
45 in detail in the 1982 final EIS.

1 **2.1.5 Vegetation**

2 **2.1.5.1 Major Vegetation Types**

3 The ABLP's bottomland hardwood forests maintain rapid growth
4 and high productivity rates, owing to abundant water, high rainfall,
5 rich alluvial soils and organic matter, sediments and nutrients, and
6 a long growing season. Tree species diversity, however, is
7 moderate or low because of anaerobic stress during flood periods.
8 Complexity, diversity, and productivity result from environmental
9 gradients of hydroperiod (frequency and duration of flooding) and
10 topography (ground elevation), which interact to determine species
11 composition and stage of successional development. Five general
12 terrestrial habitat types consisting of early successional bottomland
13 hardwoods, mid-to-late successional bottomland hardwoods,
14 baldcypress-tupelo swamps, marshes, and developed areas
15 (croplands, levees, oil and gas exploration facilities, campsites,
16 disposal areas, etc.) are found in the ABLP. Early successional
17 types regenerate on newly deposited sediments. As sites are
18 altered by continued sediment deposition or by vegetation
19 maturation over time, species associations shift to mid-to-late
20 successional types. Accordingly, older terrestrial habitats are
21 generally more stable and contain forest cover in advanced
22 successional stages (USFWS 1993). The five major terrestrial
23 habitats are briefly described below.

24
25 **Early Successional Bottomland Hardwoods.** Early successional
26 bottomland hardwoods species are “pioneers” found on newly
27 accreted land throughout the ABLP. The largest acreage occurs in
28 the vicinity of Grand Lake and Six-Mile Lake, and the Atchafalaya
29 Delta, where rapid sedimentation has been occurring since about
30 the 1950s. The overstory consists of flood-tolerant species such as
31 black willow on recent depositions and cottonwood (*Populus*
32 *deltoides*) and sycamore (*Plantanus occidentalis*) on drier sites.
33 Understory vegetation is sparse, especially in dense, young stands.
34 With continued sedimentation, mid-to-late successional species
35 tend to invade the understory as the early successional stand
36 matures and becomes less dense by natural self-thinning
37 processes.

38
39 **Mid-to-Late Successional Bottomland Hardwoods.** Historically,
40 the higher alluvial floodplains in the upper part of the ABLP (north
41 of I-10) supported extensive stands of bottomland hardwoods.
42 Commercial timber harvesting has eliminated most of these forests.
43 Some of the former bottomland hardwoods has been converted to
44 agricultural and semi-urban uses. Associations of remaining
45 second- and third-growth forests vary according to topographical

1 elevation, soil type, and species-specific flood tolerance; all species
2 tolerate some degree of infrequent flooding. Better-drained, silty
3 loam soils support vegetation consisting of sweetgum, American
4 elm, sycamore, sugarberry, and a variety of oaks. Vegetation on
5 poorly drained clay soils includes boxelder (*Acer negundo*), bitter
6 pecan, Drummond red maple, green ash, and overcup oak.
7

8 **Baldcypress-Tupelo Gum Swamps.** Extensive baldcypress,
9 baldcypress-tupelo gum, and mixed baldcypress-bottomland
10 hardwood swamps cover the southeastern part of the ABLP,
11 between Bayou Sorrel and Flat Lake. Topographic gradients are
12 slight, and the land remains flooded for at least 9 months every
13 year. The southeastern area also receives less sediment
14 deposition than other parts of the ABLP. Plant species diversity is
15 relatively low because of prolonged flooding. Overstory species
16 that may occur in addition to baldcypress and tupelo gum include
17 green ash, black willow, and Drummond red maple.
18

19 **Marshlands.** The lower part of the ABLP, between U.S.
20 Highway 90 and the Gulf of Mexico, consists of a complex of
21 coastal marsh types. Vegetation composition is determined
22 primarily by topographic elevation, and aquatic salinity is a
23 generally north-to-south progression from freshwater marsh to
24 intermediate, brackish, and saline types.
25

26 **Developed Areas.** Developed areas include croplands, levees, oil
27 and gas exploration facilities, disposal areas, campsites, and semi-
28 urban areas.
29

30 **SAF Forest Cover Types.** The forest successional types
31 described above can be distinguished further according to a widely
32 referenced system developed by the Society of American Foresters
33 (SAF) (1980).
34

35	Type 63	Cottonwood
36	Type 88	Willow Oak-Water Oak-Diamondleaf Oak
37	Type 92	Sweetgum-Willow Oak
38	Type 93	Sugarberry-American Elm-Green Ash
39	Type 94	Sycamore-Sweetgum-American Elm
40	Type 95	Black Willow
41	Type 96	Overcup Oak-Water Hickory [Bitter Pecan]
42	Type 101	Baldcypress
43	Type 102	Baldcypress-Water Tupelo Gum
44	Type 103	Water Tupelo-Swamp Tupelo Gum

1 **2.1.5.2 Forested Wetlands (Bottomland Hardwoods and Baldcypress-Tupelo**
2 **Gum Swamps)**

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4
5
6
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8
9
10 ***Altered natural***
11 ***hydrological and***
12 ***flooding regimes***
13 ***have altered***
14 ***forested wetlands in***
15 ***the ABLP.***
16

Alteration of natural hydrological and flooding regimes has significantly disturbed forested wetlands in the ABLP. Since about 1930, sedimentation has substantially raised ground elevations, increasing the areal extent of bottomland hardwoods at the expense of surface water and swamp. In particular, a large increase in bottomland hardwood acreage has occurred north of I-10. In the vicinity of SWMA, however, minimal sedimentation has occurred along Alabama Bayou and other small bayous. These streams are protected from main channel overflows by the east river levee and receive only backwater flows via Bayou des Glaises. The area south of I-10 (latitude of Ramah and Henderson) was dominated equally by willow and baldcypress in the 1930s. Since then, sedimentation has induced an overall trend to large increases of willow, bottomland hardwoods, and human development, while the mature baldcypress-tupelo gum swamp area has decreased by more than 80 percent. Now, bottomland hardwoods mixed with baldcypress and willow is the major forest type. In the Henderson area, early successional bottomland hardwoods have succeeded to mid-to-late bottomland species owing to lowered water tables and shortened hydroperiods.

Poor timber management has resulted in the decline of hard mast-producing species and is expected to continue. In 1981, USFWS (USFWS 1993b) estimated forest cover acreage projected to occur by 2030, based on the full implementation of the ABFS (including land-use controls and WMUs). About 17,000 acres of baldcypress-tupelo gum swamp were expected to convert to early successional stages (primarily willow cover types) by 2030; about 43,000 acres of aquatic habitats were expected to convert to baldcypress swamp or early successional types; and about 23,000 acres of early successional bottomland forests were expected to develop into mid-to-late successional types. Over time, these trends of vegetation development would eventually convert most of the ABLP's forests to early and mid-to-late successional bottomland hardwood types, with some baldcypress-tupelo gum swamps remaining in former aquatic areas in the southeastern part of the ABLP (USFWS, 1994).

Of the variety of processes to which developmental trends of vegetation types respond over time, hydrologic regime is the primary controlling factor in the ABLP. Baldcypress-tupelo gum swamps, for example, require the presence of floodwaters throughout the growing season on average 3 out of every 5 years. In contrast, if these swamps are maintained flood-free during the

1 growing season for 3 out of every 5 years, a mixed baldcypress-
2 bottomland hardwoods association develops. Red maple and
3 green ash will become abundant; if flooding is accompanied by
4 excessive sedimentation however, willow and cottonwood will
5 predominate. Baldcypress logging in areas with reduced flood
6 regimes, lowered water tables, or sedimentation tends to convert
7 swamps to bottomland hardwoods. With increased water levels, in
8 contrast, baldcypress logging results in conversion to tupelo,
9 marsh, or open water.

10 11 **2.1.5.3 Federally Listed Endangered Species and Rare Species (Plants)**

12 There are no listed rare and/or endangered plant species in the
13 ABFS at this time.

14 15 **2.1.6 Wildlife Resources**

16 Bottomland hardwood forests, baldcypress-tupelo gum swamps,
17 and the margins of permanent waterbodies provide outstanding
18 wildlife habitat. The wildlife resources of the Atchafalaya Basin
19 have historically been diverse and abundant due to the variety and
20 magnitude of available habitat. Wildlife species include game
21 animals, fur-bearing animals, migratory birds, rare and endangered
22 species, and numerous other non-game species (USFWS 1981).

23 24 **2.1.6.1 Mammals**

25 Forty-five species of mammals are reported to inhabit the ABLP,
26 the majority being non-game species. A complete listing of
27 mammal species reported to inhabit the ABFS can be found in the
28 OMP. Common non-game mammals include the nine-banded
29 armadillo, southern flying squirrel, and several species of rodents.

30
31 ***White-tailed deer is***
32 ***the predominant big***
33 ***game species in the***
34 ***ABFS.***

35 The principal big game species in the ABFS is white-tailed deer
36 (*Odocoileus virginianus*). Deer are most abundant in mid-to-late
37 successional bottomland hardwood forests, and least abundant in
38 baldcypress-tupelo swamps, although habitat preference may vary
39 seasonally (USFWS 1981).

40 Important small game mammals include fox squirrel (*Sciurus niger*),
41 gray squirrel (*Sciurus carolinensis*), swamp rabbit (*Sylvilagus*
42 *aquaticus*), eastern cottontail (*Sylvilagus floridanus*), and raccoon
43 (*Procyon lotor*). Other wildlife species of commercial importance
44 include such fur-bearing mammals as river otter (*Lontra*
45 *canadensis*), mink (*Mustelo vison*), nutria (*Myocaster coypus*),
muskrat (*Ondatra zibethicus*), raccoon (*Procyon lotor*), and beaver
(*Castor canadensis*). Although trapping occurs, low fur prices have
reduced the economic importance of this industry.

1 **2.1.6.2 Birds**

2 The ABFS is home to a great diversity of avian fauna, including
3 wading birds, waterfowl, raptors, and songbirds. Wading birds
4 include such species as little blue heron (*Egretta caerulea*), great
5 egret (*Ardea alba*), yellow-crowned night-heron (*Nyctanassa*
6 *violacea*), and white ibis (*Eudocimus albus*). Waterfowl include
7 mallard (*Anas platyrhynchos*), mottled duck (*Anas fulvigula*), green
8 and blue-winged teal (*Anas carolinensis* and *discors*), and wood
9 duck (*Aix sponsa*). Common raptors include red-shouldered hawk
10 (*Buteo lineatus*), Mississippi kite (*Ictinia mississippiensis*), and
11 barred owl (*Strix varia*). Other common non-game birds,
12 depending on the season, include red-bellied woodpecker
13 (*Melanerpes carolinus*), Acadian flycatcher (*Empidonax virescens*),
14 Carolina chickadee (*Poecile carolinensis*), tufted titmouse
15 (*Baeolophus bicolor*), Carolina wren (*Thryothorus ludovicianus*),
16 ruby-crowned kinglet (*Regulus calendula*), red-eyed vireo (*Vireo*
17 *olivaceus*), prothonotary warbler (*Protonotaria citrea*), northern
18 parula (*Parula americana*), yellow-rumped warbler (*Dendroica*
19 *coronate*), red-winged blackbird (*Agelaius phoeniceus*), common
20 grackle (*Quiscalus quiscula*), northern cardinal (*Cardinalis*
21 *cardinalis*), white-throated sparrow (*Zonotrichia albicollis*), and
22 although rare, the Bobwhite quail (*Colinus virginianus*) has been
23 sighted in the ABLP. A complete listing of the bird species known
24 to inhabit the Atchafalaya Basin can be found in the OMP.

25
26 The ABLP is an important wintering area for waterfowl in the
27 Mississippi Flyway. The forested wetlands and shallow margins of
28 permanent water bodies provide excellent feeding and resting
29 areas for significant numbers of American coot (*Fulica americana*)
30 and dabbling ducks, such as the mallard and the northern pintail
31 (*Anas acuta*). Diving ducks, such as the lesser scaup (*Aythya*
32 *affinis*), are most common in the larger lakes and streams. Four
33 **The ABLP provides** areas in the ABLP have been identified as key waterfowl areas in
important wintering acquisition planning efforts for the North American Waterfowl
34 **habitat for** Management Plan implementation, and were also identified as
35 **waterfowl in the** Priority Wetlands under the Emergency Wetlands Resource Act of
36 **Mississippi Flyway.** 1986. All of these areas are located north of U.S. Highway 190
37 and include Coco Lake/Fish Bayou area, the Swayze Lake area,
38 Woodard Plantation area, and the Bayou Jack area. The Bayou
39 Jack area also was identified as a Louisiana Priority Wetland by the
40 State of Louisiana. Other game birds found in the ABLP include
41 American woodcock (*Scolopax minor*), common snipe (*Gallinago*
42 *gallinago*), and eastern wild turkey (*Meleagris gallopavo*).

44
45 The ABLP also serves as a vital breeding and migratory stopover
46 location for many species of neotropical migrants. Mississippi kite,

1 swallow-tailed kite (*Elanoides forficatus*), prothonotary warbler,
2 hooded warbler (*Wilsonia citrine*), wood stork (*Mycteria*
3 *Americana*), and Swainson's warbler (*Limnothlypis swainsonii*) are
4 several neotropical migrants that utilize bottomland hardwood
5 habitats in the ABLP.
6

7 **2.1.6.3 Reptiles and Amphibians**

8 Numerous species of reptiles and amphibians are found in the
9 ABLP. American alligator (*Alligator mississippiensis*), common
10 snapping turtle (*Chelydra serpentina*), red-eared slider (*Trachemys*
11 *scripta elegans*), painted turtle (*Chrysemys picta*), stinkpot
12 (*Sternotherus odoratus*), green anole (*Anolis carolinensis*), and
13 western cottonmouth (*Agkistrodon piscivorus leucostoma*) are
14 representative reptiles. Amphibians in the area include bullfrog
15 (*Rana catesbeiana*), bronze frog (*Rana clamitans clamitans*), Gulf
16 Coast toad (*Incilius valliceps*), green and squirrel treefrogs (*Hyla*
17 *cinerea* and *H. squirella*), and several species of salamanders. A
18 list of reptiles and amphibians can be found in the OMP.
19

20 Several species of reptiles and amphibians have a commercial
21 importance, and large numbers in the ABLP support a moderate
22 industry. However, alligator harvests are not allowed on IBA at
23 this time.
24

25 **2.1.6.4 Federally Listed Endangered and Threatened Species (Wildlife)**

26 Currently, two Federally endangered or threatened wildlife species
27 are known to occur in the ABLP. Brief descriptions of these
28 species follow.
29

30 **LOUISIANA BLACK BEAR (*Ursus americanus luteolus*)**

31 The Louisiana black bear is listed as threatened within its historical
32 range (Photograph 2-2). The USFWS designated approximately
33 1,195,821 acres of critical habitat in Louisiana, including Avoyelles,
34 Iberia, Iberville, Pointe
35 Coupee, St. Martin, and St.
36 Mary parishes, on April 9,
37 2009 (USFWS 2009).

38 Designated critical habitat for
39 the Louisiana black bear is
40 shown in Appendix C, Figure
41 4. Other free-living bears of
42 the species *U. americanus*
43 within the historical range of
44 *luteolus* are designated as
45 threatened by similarity of



Photograph 2-2. Louisiana Black Bear

1 appearance (USFWS 1992; USFWS 2009). The Louisiana black
2 bear historically ranged throughout Louisiana, southern Mississippi,
3 and eastern Texas. Cause for decline of the Louisiana black bear
4 has been attributed to historical and ongoing habitat losses, as well
5 as illegal killing (USFWS 1992). The USFWS Recovery Plan for
6 the Louisiana black bear states that criteria for delisting the bear
7 require establishment and preservation of at least two viable sub-
8 populations in the Atchafalaya Basin and Tensas Basin,
9 establishment of migration corridors between sub-populations, and
10 protection of habitat and corridors (USFWS 1995).

11
12 No single area-density relationship has been developed for the
13 Louisiana black bear, but density estimates have been developed
14 for the species in two locations (USFWS 2009). Within the Tensas
15 Basin, density was estimated at 1 bear per 636 acres, and the
16 adjacent Deltic subgroup was estimated at 1 bear per 173 acres
17 (Boerson et al. 2003). A recent population estimation concluded
18 that approximately 294 bears could occur in the upper Atchafalaya
19 River Basin (Lowe 2011). Anecdotal information and research
20 trapping efforts indicate perhaps 60 to 100 bears in the Tensas
21 Basin, and 30 to 60 in the Atchafalaya Basin. The Atchafalaya
22 sub-population is divided between Pointe Coupee Parish (including
23 the Morganza Floodway) and lower Iberia and St. Mary parishes.
24 Occasional bear sightings have been reported in the area of the
25 Sherburne WMA and Atchafalaya NWR.

26
27 Prime black bear habitat is characterized by relatively inaccessible
28 terrain, thick understory vegetation and abundant food sources in
29 forms of shrubs or hard- or soft-mast trees. Louisiana black bear
30 habitat in the lower Atchafalaya population includes forested
31 wetlands, open marshes, deciduous forest spoil banks and upland
32 hardwood forest (USFWS 2009). The primary constituent
33 elements for Louisiana black bear critical habitat include space for
34 individual and population growth and for normal behavior; food,
35 water, air, light, minerals, or other nutritional or physiological
36 requirements; cover or shelter; sites for breeding, reproduction, and
37 rearing or development of offspring; and habitats that are protected
38 from disturbance or are representative of the historic, geographical,
39 and ecological distribution of the species.

40
41 Black bears are habitat generalists that use a variety of agricultural,
42 marsh shrub/scrub, and mid-to-late successional bottomland
43 hardwood forest habitats. Bears require large expanses of
44 relatively undisturbed, remote forest. The average home range
45 size of bears in Pointe Coupee Parish is 131.5 square miles for
46 males and 12.6 square miles for females. Females may restrict

1 their movements even more during the winter to small patches of
2 baldcypress swamp or bottomlands hardwoods.
3

4 Although classified as opportunistic omnivores, bears are mostly
5 vegetarians but supplement their diet with invertebrate and carrion
6 food sources. During the spring and summer, bears feed primarily
7 on soft mast (fruits of blackberry [*Rubus* spp.], grape [*Vitis* spp.],
8 elderberry [*Sambucus canadensis*], mulberry [*Morus rubra*], etc.).
9 In the fall, hard mast (acorns, pecans) and agricultural crops (corn
10 [*Maize* spp.], oats [*Avena* spp.], wheat [*Triticum* spp.], and sugar
11 cane [*Saccharum* spp.]) provide the high protein/fat/calorie foods
12 necessary for winter fat accumulations. Reproduction in female
13 bears is closely correlated with nutritional condition. Rates of cub
14 mortality and female infertility, for example, are higher during years
15 of poor mast production. Bears prefer, and easily become
16 habituated to, other high protein/high fat foods such as those found
17 near human habitations (garbage cans and dumpsters).
18

19 Activity and movements generally decline from November through
20 January as bears den in response to food scarcity and winter
21 weather. Dens may consist of ground nests in thick understory
22 brush (switchcane [*Arundinaria gigantea*], palmetto [*Sabal* spp.],
23 logging slash), or cavities in large standing or downed trees
24 (Weaver et al., 1990). Cubs are born in the winter den and remain
25 with their mother over the next winter. Thus, female reproductive
26 success may be related to den tree availability, especially in areas
27 subject to flooding. The alternate-year breeding cycle of female
28 bears results in a fairly low reproductive potential that is further
29 limited by poor nutritional status. Population growth is very
30 sensitive to adult mortality rates, and the loss of a breeding female
31 can significantly impact a small, isolated population.
32

33 Habitat destruction or modification is the primary threat to the
34 Louisiana black bear, followed by human-related mortality.
35 Maintenance of forest habitats and the protection of existing and
36 candidate den trees along water bodies are critical conservation
37 measures (USFWS 1992). Large undisturbed forested tracts with
38 few roads provide remoteness, a fundamental requirement of black
39 bears. Although bears are adaptable and opportunistic, they can
40 survive in proximity to humans only "if afforded areas of retreat that
41 ensure little chance of close contact or visual encounters" (USFWS
42 1995). Avoiding fragmentation of bottomland hardwood forest,
43 therefore, is a major concern for conservation of the species.
44 Furthermore, riparian vegetation along drainages, ditches, bayous,
45 and riverbanks serve as important travel corridors between forested
46 tracts. Adult bears and dispersing juveniles, particularly, need

1 these habitat linkages in regions of fragmented forest. In addition
2 to forest fragmentation, road density is an indicator of the potential
3 for human-related disturbance. "Roads fragment habitat, cause
4 direct mortality, increase human contact, and may decrease habitat
5 use or act as barriers to dispersal (major highways). In Louisiana
6 and Mississippi, the most significant mortality factors are poaching
7 and road kills" (USFWS 1995).

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14 ***The USFWS' final***
15 ***listing for Louisiana***
16 ***black bear allows***
17 ***for normal forest***
18 ***management***
19 ***activities.***

20 The USFWS' final listing for the Louisiana black bear as a
21 threatened species includes a special rule exempting normal forest
22 management activities from Section 9 "take" prohibitions. The
23 USFWS considers normal forest management activities, defined as
24 sustained yield of timber products and wildlife habitats, as
25 compatible with bear habitat needs. Therefore, maintaining
26 occupied bear habitat in some form of timberland is the single most
27 critical factor for conservation of the bear; the greatest threat is
28 forest conversion. Recommended forest management practices
29 designed to maintain a diverse, productive forest involve uneven-
30 aged hardwood management (single-tree and group selection) and
31 even-aged management (patch clear-cutting) to promote
32 regeneration of oaks and herbaceous ground cover. Although the
33 USFWS listing allows normal forest management, it prohibits
34 damage or loss of den trees, den tree sites, or candidate den trees.
35 Den trees are defined as baldcypress or tupelo trees of at least
36 36 inches diameter at breast height (DBH), measured 4.5 feet
37 above ground, with visible cavities, located in or along waterbodies.

38 USACE is a charter member of the Black Bear Conservation
39 Committee (BBCC), a broad coalition of Federal and state
40 agencies, environmental groups, forestry and agricultural
41 industries, private special-interest organizations, and universities.
42 The BBCC members are working together to restore the Louisiana
43 black bear to suitable habitats within its historical range. The
44 BBCC's focus is landscape management to establish and bring
45 together habitat components and promote management over large
areas of diverse, multiple ownerships.

The management of ABFS public access lands for public access
poses a fundamental dilemma. Federal ownership will benefit the
bear by preserving large tracts of bottomland hardwoods, but
management for public access will increase opportunities for
human-related disturbance, human/bear conflicts, and bear
mortality. USACE will continue to coordinate all actions in the
ABFS with the USFWS to ensure that no adverse impacts occur on
the Louisiana black bear.

1 **AMERICAN ALLIGATOR (*Alligator mississippiensis*)**

2
3
4
5
6 **Alligators are**
7 **harvested through**
8 **an LDWF permit on**
9 **USACE public**
10 **access lands in the**
11 **ABFS.**

The American alligator is currently listed as Threatened under the Similarity of Appearance clause to the Endangered Species Act of 1973 (as amended) (Photograph 2-3). Population levels in Louisiana are sufficient to legally allow a state-regulated trapping season. Tags are issued by the LDWF to regulate harvest and are dependent upon the potential carrying capacity of the harvest area. Currently, the LDWF issues permits to allow a sustained yield harvesting program of alligators on USACE public access lands in the ABFS.



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19 **Photograph 2-3. American Alligator in**
20 **ABFS Project**

21 **2.1.7 Fisheries Resources**

22 **2.1.7.1 Recreational Fisheries**

23 Sport fishing is an extremely important recreational activity in the ABLP. Sport fish harvested in the ABLP include yellow bass (*Morone mississippiensis*), striped bass (*Morone saxatilis*), largemouth bass (*Micropterus salmoides*), white crappie (*Pomoxis annularis*), black crappie (*Pomoxis nigromaculatus*), warmouth (*Lepomis gulosus*), bluegill (*Lepomis macrochirus*), and redear sunfish (*Lepomis microlophus*). Recreationally harvested shellfish in the ABLP include red swamp crawfish, white river crawfish, river shrimp (*Macrobrachium ohione*), and blue crab (*Callinectes sapidus*). Asian carp (*Cyprinid spp.*) may also be caught in the ABLP, however these are an invasive species which are beginning to pose problem in Louisiana and more specifically, in ABFS waters.

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45
LDWF collected recreational fishing data from the southern portion of the ABLP from 1989 to 1991. Angler hours averaged 100,000 annually. The four most harvested fish, as determined by the survey, were bluegill, crappie, largemouth bass, and redear sunfish. Other sunfish species were also harvested in large numbers. The most sought-after fish was the largemouth bass. Other highly sought species included crappie, bluegill, and bream. In addition, a portion of the sport fishing effort was directed at catching any other type of fish. USFWS is aware that the following species also were caught by sport fishers: striped mullet (*Mugil cephalus*), yellow bullhead (*Ameiurus natalis*), channel catfish

1 (Ictalurus punctatus), flathead catfish (Pylodictis olivaris), blue
2 catfish (Ictalurus furcatus), yellow bass, white bass (Morone
3 chrysops), striped bass, southern flounder (Paralichthys
4 lethostigma), and lady fish.
5

6 **2.1.7.2 Commercially Harvested Species**

7 The commercial fishery resources of the Atchafalaya Basin are of
8 tremendous economic importance. Over 100 species of fin fishes
9 and commercially important shellfishes, including catfish, buffalo
10 fish (Ictiobus cyprinellus), freshwater drum (Aplodinotus grunniens),
11 and crawfish have been collected from the diverse aquatic habitats
12 in the ABLP.
13

14 **2.1.7.3 Endangered, Threatened, and Rare Species (Fish)**

15 Currently, one Federally listed endangered fish species, the pallid
16 sturgeon (Scaphirhynchus albus), occurs in the ABLP.
17

18 The pallid sturgeon was listed as an endangered species in
19 September 1990 (USFWS 1991a). The range of the pallid
20 sturgeon includes the middle and lower Mississippi, the
21 Atchafalaya, the Missouri, the Platte, and Yellowstone rivers.
22

23 **2.1.8 Water Quality**

24 Water quality in the Atchafalaya River Basin and Main Channel and
25 its distributaries is generally good. The Louisiana Department of
26 Environmental Quality (LDEQ) is responsible for monitoring and
27 assessing surface water in the Atchafalaya Basin. LDEQ
28 segregated the water bodies and drainage areas in the state into
29 subwatersheds that are managed independently. There are five
30 LDEQ subwatersheds in the ABFS project (Appendix C, Figure 5).
31 The Clean Water Act [Section 303(d)] requires that states develop
32 a list of surface waters that do not meet water quality standards
33 and support their designated uses. In response to this mandate,
34 LDEQ has prescribed water quality standards for surface waters
35 within the State of Louisiana in order to promote a healthy and
36 productive aquatic systems. Standards apply to pH range,
37 temperature, bacterial density, dissolved oxygen (DO), chloride
38 concentration, metals, sulfate concentration, and total dissolved
39 solids.
40

41 Designated Uses are activities or conditions that water resources
42 can sustain such as Primary Contact Recreation (PCR), which
43 includes swimming and water skiing, and Secondary Contact
44 Recreation (SCR), which includes boating and sailing. Fish and
45 wildlife propagation (FWP) include ecological conditions that are

conductive to the propagation of aquatic organisms and are measured by water quality parameters that affect the health of fish and wildlife, such as the concentration of DO, total dissolved solids (TDS), nutrients, etc. Low DO is a concern because it limits the ability of a water body to support aquatic life. Additionally, there is a designated use for oyster propagation which includes a standard for bacterial densities and one for drinking water that sets criteria for levels of bacteria and a number of different metals and toxins.

Three of the five LDEQ designated subwatersheds are on the LDEQ Water Quality Inventory Integrated Report [Section 305(b) and 303(d)] for 2008 for violating pollution standards. Some of the waterbodies in the ABFS are impaired because of low DO levels and mercury in fish tissue. Attainment standards are the numerical criteria to ensure that Louisiana’s waterways maintain safe levels for human health and wildlife. Table 2-1 presents the water quality attainment status of designated uses, water quality impairments, suspected causes of impairment, and suspected sources of impairments of the LDEQ sub-watersheds located in the Atchafalaya River Basin.

Table 2-1. List of LDEQ Sub-watersheds Found in the Project Study Area and Water Quality Attainment Status

Sub-watershed Name & LDEQ ID	Water Quality Attainment Status	Suspected Causes of Impairment	Suspected Sources of Impairment
010201 Atchafalaya River (main channel)	In attainment for all designated uses	NA	NA
010301 West Atchafalaya floodway	Non-attainment for fish and wildlife propagation	Mercury in fish tissue Dissolved oxygen	Atmosphere deposition Source unknown
010401 East Atchafalaya Floodway	Non-attainment for fish and wildlife propagation	Mercury in fish tissue Dissolved oxygen	Atmosphere deposition Agriculture and petroleum production
010501 Lower Atchafalaya Floodway	Non-attainment for fish and wildlife propagation	Mercury in fish tissue	Atmosphere deposition
010502 ICWW Morgan City	Non-attainment for fish and wildlife propagation	Dissolved oxygen	Natural Conditions Runoff from forest/grassland/parkland

Source: LDEQ 2012 Final 2010 Louisiana Water Quality Integrated Report – Category 5 and 5RC 303 (d) list.
NA – Not Applicable

2.1.9 Prehistoric and Historic Cultural Resources

2.1.9.1 Prehistoric

The Atchafalaya Basin is a large, shallow depression bounded by present and former Mississippi River courses. The broad natural levees of the former river courses strongly define the outer

1 boundaries of the Atchafalaya Basin. Swamps and numerous
2 shallow lakes in the southern portion of the Atchafalaya Basin
3 dominate the physiography. Meandering through these low-lying
4 environments are numerous distributary channels, emanating from
5 the former Mississippi River courses, with their slightly elevated
6 natural levees. The geomorphological evolution of the Basin has
7 been analyzed in numerous CR investigations. The impact of
8 these geomorphological processes on prehistoric and historic
9 archaeological cultural resources is addressed in general in Kelly
10 (2004); more specifically, the impact on cultural resources on the
11 public access fee lands is addressed at length in Vigander and
12 Maygarden (1994), Smith et al. (2003), Weinstein and Wells
13 (2004), and Godzinski et al. (2005). Below is a brief summary of
14 archaeological data for prehistoric sites within the Atchafalaya
15 Basin and on ABFS lands.
16

17 Several hundred archaeological sites have been recorded within
18 the Atchafalaya Basin. As discussed in Kelly (2004), 70 terrestrial
19 archaeological sites and one marine archaeological site were
20 recorded on all ABFS public access lands, easement lands, and
21 project waters as of 2000. The recorded ABFS prehistoric sites
22 range from small earth and/or shell midden deposits to large
23 ceremonial mound sites. Sites as early as the Archaic period [circa
24 8,000 to 2,500 years before present (B.P.)] are known to exist on
25 the periphery of the Atchafalaya Basin. The Bayou Sorrel Mound
26 (16IV4) dates to the Tchefoncte period (circa 2,500 to 2,000 years
27 B.P.). The majority of the sites are located on the natural levee
28 ridges of relict distributary channels and the former Mississippi
29 River courses on the edges of the ABLP. Additionally, there is also
30 a distinct clustering of prehistoric sites along the paleo-shorelines
31 of Grand Lake and Six-Mile Lake. Continued use of the Atchafalaya
32 Basin throughout the prehistoric period is documented in the
33 archaeological record of the Atchafalaya Basin, with population
34 density apparently reaching its peak during the Coles Creek period
35 (circa 1,300 to 800 years B.P.), from which period and later most
36 sites within the ABLP have been identified.
37

38 Of the dozens of sites on ABFS public access and easement lands,
39 only one recorded site eligible for the National Register of Historic
40 Places is on fee-owned lands and waters of the IBA, BDOA, or
41 SBA. The single site, the Henderson Lake Site, is on fee lands on
42 the IBA (discussed individually in Section 8).
43

44 The paucity of recorded sites in the ABLP is primarily the result of
45 heavy sedimentation that has buried most of the archaeological
46 record. As early as 1938, researchers were noting that river-borne

1 sediments were rapidly burying recorded sites. The burial of
2 prehistoric land surfaces is most pronounced in the central portion
3 of the ABLP (above Upper Grand River) with a documented
4 average of seven feet of vertical accretion between 1935 and 1985.
5 While the sedimentation generally preserves archaeological
6 resources, it also increases the difficulty in locating archaeological
7 sites using standard archaeological techniques, such as surface
8 collecting and shovel testing. Recent cultural resources surveys in
9 the ABLP have demonstrated these difficulties (Vigander and
10 Maygarden 1994; Weinstein and Wells 2004; and Godzinski et al.
11 2005).

12 **2.1.9.2 Historic**

14 The Chitimacha Indians, who now reside in Charenton, Louisiana,
15 on the southwestern edge of the ABLP, occupied the Atchafalaya
16 Basin during the early years of European exploration and
17 settlement in the region. A tribal population of 4,000 in the year
18 1650 has been estimated (Kniffen et al., 1987). More than 15
19 village names and locations could still be remembered by the turn
20 of the 20th century. These villages clustered on Bayou Teche,
21 Grand Lake, Grand River, Bayou Plaquemine, and at Butte
22 La Rose. Chitimacha presence in the Atchafalaya Basin steadily
23 declined under increasing pressures from European
24 encroachment on their tribal lands. Only 50 Chitimacha remained
25 by 1909, and they were living outside the present Lower
26 Atchafalaya Basin Floodway at the Charenton tribal reservation.

27
28 A number of other Indian tribes, including the Avoyel, Opelousa,
29 and Okelousa, resided to the west, north, and east (respectively) of
30 the Atchafalaya Basin during the early historic period. Migrant
31 tribes traversed the region during the eighteenth and early
32 nineteenth centuries. These groups included the Natchez in the
33 early 1730s, and the Houma and Taensa in the early 1800s. The
34 exact movements of these tribes are not well documented and the
35 archaeological evidence of their temporary residence in the Basin
36 has proven ephemeral (Smith et al. 2003).

37
38 During the colonial period of Louisiana history (circa 1700 to 1803),
39 the Atchafalaya Basin was visited only intermittently by Europeans
40 and occupied very sparsely by them. Early European settlement
41 focused on the superior agricultural lands along the Mississippi
42 River and Bayou Lafourche to the east of the Basin and Bayou
43 Teche to the west. With its vast swamps and limited areas of land
44 suitable for farming, the Atchafalaya Basin was viewed more as an
45 obstruction to east-west travel than as a place of settlement. The
46 primary venue for travel through the Atchafalaya Basin was its

1 intricate maze of waterways. Several routes through the
2 Atchafalaya Basin were established. Bayou Plaquemine served as
3 the main access route from the Mississippi River, and Bayou
4 Courtableau was the major connection to Bayou Teche.
5

6 During the Antebellum period (circa 1803 to 1860), some portions
7 of the Atchafalaya Basin experienced significant settlement. This
8 new interest was concentrated along the relatively limited strips of
9 elevated ridge lands in the Atchafalaya Basin and was fueled by
10 the rapid expansion of plantation agriculture in the surrounding
11 region. Areas settled during this period include the upper
12 Atchafalaya River, Alabama Bayou, the Upper Grand River, Bayou
13 Sorrel, and Bayou Pigeon. This period of agriculture-based
14 expansion was short-lived. Increased flooding forced the
15 abandonment of these newly cleared areas. Those who remained
16 in the Atchafalaya Basin, most notably in the Bayou Chene
17 community, were forced to adapt from a farm-based economy to
18 extractive pursuits. This late 19th century expansion of fishing,
19 hunting, gathering, and other industries that relied on the natural
20 resources of the Atchafalaya Basin characterizes the culture that
21 survives to this day.
22

23 During the late 19th century, another extractive industry of
24 significance was the development of large-scale industrial
25 baldcypress lumbering. Beginning in the 1880s, the cutting of
26 baldcypress peaked in 1915 and declined rapidly after 1925. This
27 short-lived industry had major ecological impact on the Atchafalaya
28 Basin, including the loss of all virgin stands of forest.
29

30 After the decline of the lumbering industry, the two main cultural
31 developments in the Atchafalaya Basin were the growth of oil and
32 gas exploration and the construction of the ABLP. The oil and gas
33 industry provided yet another extractive pursuit, which many
34 Atchafalaya Basin residents included in their yearly round of
35 economic activities. The construction of the ABLP following the
36 disastrous flood of 1927 resulted in the residential abandonment of
37 the heart of the Basin over the next couple of decades.
38 Atchafalaya Basin residents moved outward either to communities
39 on the edges of the ABLP or beyond.
40

41 **2.2 SOCIAL RESOURCES**
42

43 The socioeconomic area includes those Louisiana parishes that are
44 within 25 miles of the Atchafalaya Basin Protection Levees (primary
45 parishes) and the Louisiana parishes largely within 50 miles of the
46 Atchafalaya Basin Protection Levees (secondary parishes). The

1 primary parishes were determined as those within reasonable
2 commuting distance for daily visitation or employment; the
3 secondary parishes were determined as those beyond daily
4 commuting distance but within a distance many people would go
5 for periodic recreational purposes.
6

7 **2.2.1 Demographics**

8 Table 2-2 shows population trends of the primary and secondary
9 parishes. The estimated total population of the socioeconomic
10 analysis area has grown from 1.2 million persons in 1960 to over 2
11 million inhabitants in 2010, and increased from approximately 37
12 percent of the total Louisiana population in 1960 to approximately
13 45 percent of the overall population of the state 50 years later. The
14 population of several of the towns and cities in the region grew
15 rapidly during the 1960s and 1970s as employment opportunities in
16 agriculture within the larger region declined and petroleum-
17 chemical (petrochemical) industries developed. From 1960 to
18 1980, the population of the primary parishes increased at a
19 compound annual rate higher than that for the United States as a
20 whole. During the 1980s, the rate of population growth in the region
21 dropped below the national average. This decline may have been,
22 in part, due to a national trend toward lower population growth
23 rates; however, a more dominant factor appears to have been the
24 restructuring of U.S. petrochemical industries and supporting
25 activities, causing unemployment and subsequent out-migration.
26 The rate of growth of metropolitan areas in south-central Louisiana
27 recovered in the 1990s, and despite the shocks of hurricanes
28 Katrina, Rita, and Gustav, the region as a whole has continued in
29 recent decades to grow in population and attract a greater
30 proportion of the total state population.
31

32 The population of the socioeconomic analysis area includes all or
33 portions of five Metropolitan Statistical Areas (MSAs), including
34 Alexandria, Baton Rouge, Houma, Lafayette, and New Orleans. Of
35 these MSAs, Baton Rouge and Lafayette are in closest proximity to
36 the ABLP and ABFS; the cities of Baton Rouge to the east and
37 Lafayette to the west are within 25 miles of the Atchafalaya Basin
38 protection levees. The Baton Rouge MSA is made up of portions
39 of nine parishes (East Baton Rouge, Livingston, Ascension,
40 Iberville, Pointe Coupee, West Baton Rouge, East Feliciana, West
41 Feliciana, and St. Helena), all of which may be considered primary
42 parishes in terms of proximity to the ABLP. Several of these
43 parishes have experienced the most significant growth rates of any
44 of the primary or secondary parishes in recent decades. The
45 combined population of the Baton Rouge MSA exceeded 791,300
46 persons in 2009, and the parishes of East Baton Rouge,

Table 2-2. Population Trends in the Vicinity of the Atchafalaya Basin, Louisiana, Project

	1960	1970	1980	1990	2000	2010	Percent Change 1960 to 2010
PRIMARY PARISHES							
Ascension	27,927	37,086	50,068	58,214	76,627	107,215	+284
Assumption	17,991	19,654	22,084	22,758	23,388	23,421	+30
Avoyelles	37,606	37,751	41,393	39,159	41,481	42,073	+12
East Baton Rouge	230,058	285,167	366,191	380,105	412,852	440,171	+91
East Feliciana	20,198	17,657	19,015	19,211	21,360	20,267	+0
Iberia	51,657	57,397	63,752	68,297	73,266	73,240	+42
Iberville	29,939	30,746	32,159	31,049	33,320	33,387	+12
Lafayette	84,656	111,643	150,017	164,762	190,503	221,578	+162
Pointe Coupee	22,488	22,002	24,045	22,540	22,763	22,802	+1
St. James	18,369	19,733	21,495	20,879	21,216	22,102	+20
St. Landry	81,493	80,364	84,128	80,331	87,700	83,384	+2
St. Martin	29,063	32,453	40,124	44,097	48,583	52,160	+79
St. Mary	48,833	60,752	64,253	58,086	53,500	54,650	+12
Terrebonne	60,771	76,049	94,393	96,982	104,503	111,860	+84
West Baton Rouge	14,796	16,864	19,086	19,419	21,601	23,788	+61
West Feliciana	12,395	10,761	12,186	12,915	15,111	15,625	+26
Subtotal	788,252	916,079	1,104,389	1,138,799	1,247,774	1,347,723	+71
SECONDARY PARISHES							
Acadia	49,931	52,109	56,427	55,882	58,861	61,773	+24
Catahoula	11,421	11,769	12,288	11,065	10,920	10,407	-9
Concordia	20,467	22,578	22,981	20,828	20,247	20,822	+2
Evangeline	31,639	31,932	33,343	33,274	35,434	33,984	+7
Lafourche	55,381	68,941	82,483	85,860	89,974	96,318	+74
La Salle	13,011	13,295	17,004	13,662	14,282	14,890	+14

Table 2-2, continued

	1960	1970	1980	1990	2000	2010	Percent Change 1960 to 2010
SECONDARY PARISHES, CONTINUED							
Livingston	26,974	36,511	58,806	70,523	91,814	128,026	+375
Rapides	111,351	118,078	135,282	131,556	126,337	131,613	+18
St. Charles	21,219	29,550	37,259	42,437	48,072	52,780	+49
St. Helena	9,162	9,937	9,827	9,874	10,525	11,203	+22
St. John	18,439	23,813	31,924	39,996	43,044	45,924	+49
Vermilion	38,855	43,071	48,458	50,055	53,807	57,999	+49
Subtotal	407,850	461,584	546,081	565,012	603,317	665,739	+61
TOTAL primary and secondary	1,196,102	1,377,663	1,650,470	1,703,811	1,904,898	2,013,462	+68
STATE TOTAL	3,237,022	3,644,637	4,206,312	4,220,187	4,468,976	4,533,372	+40

* Primary parishes: within 25 miles of floodway guide levees; Secondary parishes: within 50 miles of floodway guide levees.

SOURCE: U.S. Census Bureau 2010

1 Ascension, and Livingston all showed strong population growth in
2 the 2010 Census. The Lafayette MSA consists of portions of
3 Lafayette, St. Martin, St. Landry, Iberia, Acadia, and Vermilion
4 parishes, also all primary parishes. The Lafayette MSA had a
5 population of approximately 264,400 persons in 2009. The total
6 population of the primary parishes in 2010 was more than 1.34
7 million persons, an increase of nearly 100,000 persons since 2000.
8

9 The cities of Alexandria and Houma are within 50 miles of the
10 ABLP. The Alexandria MSA includes parts of Rapides Parish and
11 Union Parish and had a 2009 population of about 154,500 persons.
12 Union Parish is too distant from the ABLP boundaries to be
13 considered a secondary parish in the socioeconomic analysis area.
14 The Houma MSA encompasses portions of Terrebonne and
15 Lafourche parishes and had a population of more than 205,000
16 persons in 2006. Terrebonne Parish and to a lesser extent
17 Lafourche Parish showed strong population growth in the first
18 decade of the twenty-first century. Part of the area identified by the
19 Bureau of the Census as the New Orleans MSA is also within the
20 socioeconomic analysis area, including St. James Parish (within
21 the Primary boundary), as well as St. John the Baptist and
22 St. Charles parishes, which are within 50 miles of the ABLP. The
23 “River Parishes” of St. John and St. Charles have experienced
24 significant population growth in recent years while other parishes
25 within the New Orleans MSA were severely affected by Hurricane
26 Katrina. The secondary parishes overall had a total population in
27 2010 of approximately 665,700 persons, an increase of about
28 62,400 persons since 2000.
29

30 In addition to the parishes shown in the table, the New Orleans
31 MSA includes Jefferson, Orleans, Plaquemines, St. Bernard, and
32 St. Tammany parishes. The City of New Orleans, and much of the
33 urbanized area, extend beyond 50 miles of the ABLP, and
34 therefore, ABLP lands are not considered easily accessible for day-
35 use recreational purposes by much of the New Orleans MSA. The
36 New Orleans MSA had a total population of about 1,156,500
37 persons in 2009, remaining the most populous MSA in the state.
38

39 Data for residents within the protection levees of the ABLP project
40 are difficult to obtain, since many residential properties within the
41 ABLP are utilized seasonally or part-time. In addition to scattered
42 rural residents, there are several small communities within the
43 ABLP. These small communities include Simmesport, with a 2010
44 population of 2,161 persons; Melville, with a population of 1,041
45 persons in 2010; and Krotz Springs, with a 2010 population of
46 1,198 persons (U.S. Census Bureau). In addition, the

1 unincorporated community of Butte La Rose in St. Martin Parish
2 has a population of several hundred permanent and part-time
3 residents. The populations of these communities have fluctuated in
4 the period from 1960 to 2010. In some periods, these communities
5 have experienced a decline in population, but the long-term trend
6 remains uncertain.
7

8 Table 2-2 shows historical population data for the period 1960 to
9 2010, and Table 2-3 shows population projections for individual
10 parishes for 2010 to 2030 prepared by Dr. Troy C. Blanchard of
11 LSU for the Louisiana Division of Administration (Blanchard 2007).
12 Dr. Blanchard's projections were performed in 2007 utilizing data
13 gathered following hurricanes Katrina and Rita, and his projections
14 for 2010 are not far off the actual 2010 Census data released in
15 February 2011. Projections for the year 2040 were contained in
16 the 2000 Master Plan but were based on data from the 1990s, and
17 are not included in this update since they have become seriously
18 out dated.
19

20 These historical data and projections generally agree that
21 populations are shifting from rural areas in the south-central portion
22 of the state and elsewhere to the developing metropolitan areas of
23 Baton Rouge and Lafayette as well as the River Parish region of
24 the New Orleans MSA. Both primary and secondary parishes have
25 grown faster than the state as a whole since 1960. The projected
26 changes are more evolutionary than dramatic; the proportion of
27 total state population residing in the primary and secondary
28 parishes is projected to remain relatively constant for the next two
29 decades while total numbers continue to grow. In several important
30 instances, the explosive growth experienced by some parishes in
31 recent decades is projected to slow, even as the total state
32 population is expected to grow slightly faster between 2010 and
33 2030 than it did between 1990 and 2010. The direction of
34 population change is not projected to be consistent across all
35 parishes in the primary and secondary areas. Among primary
36 parishes, Lafayette, Ascension, St. Landry, St. Martin, and
37 Terrebonne are projected to maintain population growth. Of these
38 growth parishes, only St. Landry and St. Martin have lands within
39 the ABLP. The remaining parishes with territory within the ABLP
40 project, namely Avoyelles, Iberia, Iberville, Pointe Coupee, and St.
41 Mary, as well as neighboring Assumption Parish, are all projected
42 to experience stagnant or negative population growth within the
43 next two decades. In general, secondary parishes are projected
44 overall to maintain their proportion of total state population, but the
45 suburban parish of Livingston is projected to grow significantly

Table 2-3. Projected Population for Louisiana Parishes, 2010 - 2030

	2010 (projected in 2007)	2015	2020	2025	2030	Projected Percent Change 2010 to 2030
PRIMARY PARISHES						
Ascension	109,030	127,290	147,740	170,760	196,140	+80
Assumption	22,850	22,400	21,840	21,140	20,250	-11
Avoyelles	42,260	42,550	42,630	42,480	42,380	+0
East Baton Rouge	433,700	429,170	426,380	424,110	421,500	-3
East Feliciana	20,040	19,280	18,610	17,830	17,060	-15
Iberia	75,340	75,990	76,150	75,930	75,450	+0
Iberville	30,830	29,350	27,830	26,280	24,640	-20
Lafayette	208,700	213,040	216,520	219,380	221,600	+6
Pointe Coupee	22,240	21,560	20,920	20,130	19,380	-13
St. James	21,410	21,220	20,830	20,310	19,670	-8
St. Landry	92,610	94,420	95,890	97,060	98,080	+6
St. Martin	52,780	54,250	55,520	56,390	57,000	+8
St. Mary	49,400	47,410	45,230	42,870	40,390	-18
Terrebonne	118,890	122,560	124,410	125,140	125,210	+5
West Baton Rouge	22,720	22,540	22,220	21,670	21,070	-8
West Feliciana	15,260	15,250	15,120	14,820	14,260	-7
Subtotal	1,340,070	1,360,295	1,379,860	1,398,325	1,416,110	+6
SECONDARY PARISHES						
Acadia	59,860	60,140	60,200	59,950	59,590	+0
Catahoula	9,920	9,400	8,840	8,290	7,720	-22
Concordia	18,220	17,160	16,120	15,020	13,930	-24
Evangeline	35,750	36,010	36,040	35,950	35,800	+0
Lafourche	93,740	95,160	95,990	96,310	95,990	+2

Table 2-3, continued

	2010 (projected in 2007)	2015	2020	2025	2030	Projected Percent Change 2010 to 2030
SECONDARY PARISHES, CONTINUED						
LaSalle	13,770	13,490	13,180	12,850	12,430	-10
Livingston	129,420	152,990	179,820	209,730	242,780	+88
Rapides	129,520	130,560	131,090	131,050	130,730	+1
St. Charles	53,780	56,050	57,930	59,540	60,580	+13
St. Helena	10,390	10,030	9,570	9,060	8,610	-17
St. John the Baptist	49,800	53,540	57,410	61,260	65,110	+31
Vermilion	56,730	58,000	58,930	59,650	60,150	+6
Subtotal	660,900	692,530	725,120	758,660	793,420	+20
Total primary and secondary	2,000,970	2,052,825	2,104,980	2,156,985	2,209,530	+10
Louisiana Total	4,369,760	4,477,680	4,588,310	4,699,260	4,813,420	+10
Primary parishes as percent of state total	31%	30%	30%	30%	29%	
Secondary parishes as percent of state total	15%	16%	16%	16%	17%	
Primary and secondary parishes as percent of total state population	46%	46%	46%	46%	46%	

Source: Blanchard 2007

1 while other secondary parishes are not projected to grow at all, or
2 in some cases, to shrink dramatically in population.
3

4 Of course, population projections may prove erroneous, as a
5 review of the parish projections for 2010 included in the 2000
6 Master Plan would indicate. Ascension Parish grew nearly twice as
7 much between 2000 and 2010 as projected in the 2000 Master
8 Plan data, and totals for both primary and secondary parishes as a
9 whole grew much more strongly than estimated at the turn of the
10 twenty-first century. The point is not to denigrate the quality of
11 projections, which are difficult to make with even the best data.
12 Rather, conclusions can only be drawn on the basis of a best
13 estimate of what trends indicate and with a recognition that the
14 more distant the projection, the more likely it is to diverge from
15 ultimate facts. A single catastrophic event such as Hurricane
16 Katrina cannot be projected years into the future and obviously can
17 have major impacts on demographic patterns; and many other
18 potentially positive or negative economic or environmental
19 eventualities cannot be included in the projection calculations.
20

21 A review of data from recent decades and the current projections
22 does suggest that an evolution may occur toward slower growth in
23 demand, or even less demand, for access or day-use opportunities
24 originating among residents of some areas in closer proximity to
25 ABLP lands and waters. This is because some of these areas
26 seem likely to experience slow or even negative population growth
27 in the next couple of decades. However, other areas seem likely to
28 grow in population, either incrementally as in the case of St.
29 Landry, and St. Martin parishes, or more significantly, as in the
30 Baton Rouge and Lafayette metropolitan areas (particularly their
31 suburban areas). Areas experiencing no population growth or even
32 decline will confront a whole series of socioeconomic impacts, one
33 of which may be a decline in demands for access or recreation
34 originating from those geographic areas. Evolving population
35 residency patterns may not drive all aspects of public access or
36 recreational development, but they could have an impact on a
37 number of project development and operational considerations.
38

39 **2.2.2 Economic Development**

40 Historically, a mild climate and an abundance of natural resources
41 have attracted economic investment to south-central Louisiana in
42 spite of its potential for severe damages from periodic spring floods
43 and hurricanes. Natural resources of the area include an extensive
44 network of navigable waterways, including a section of the GIWW
45 and the deep-draft channel of the Mississippi River. The area has
46 been one of the nation's most important sources of crude

1 petroleum, natural gas, salt, sand, sulfur, shell, and related
2 products. The productivity of the Atchafalaya Basin has
3 contributed to a wide variety of commercially harvested fish and
4 wildlife. Most of the virgin timber in the Atchafalaya Basin was
5 harvested between the 1880s and 1920s; however, timber remains
6 an important natural resource in the more upland areas of the
7 Atchafalaya Basin.

8
9
10
11 ***Five regional***
12 ***markets are within***
13 ***or influenced by the***
14 ***Atchafalaya Basin.***

There are five regional markets (metropolitan areas) within or substantially influenced by the Atchafalaya Basin. Lafayette is a regional market center, the home of the University of Louisiana at Lafayette, and has been one of the state's technical and financial centers in the development of area mineral deposits. Baton Rouge is the state capital, and is the home of Louisiana State University and Southern University. While New Orleans remains an important port, much new investment and construction in that city have focused on the expansion of tourism and convention activities.

18
19 Table 2-4 compares the unemployment rates between 2002 and
20 2009 with 2009 median household income of people living in the
21 primary and secondary parishes. Traditionally, the economy of the
22 southeastern and deep south United States has maintained
23 incomes lower than the national average. In recent decades,
24 incomes in the region have moved closer to the national average.
25 However, in 2009, median household income in Louisiana was
26 \$42,460, approximately \$9,000 below the national median
27 household income. Median household income in the secondary
28 parishes was generally lower than median household income for
29 the primary parishes or for the state as a whole. Some of the
30 secondary parishes are among the poorest in the United States in
31 2009; Evangeline, Concordia, and Catahoula parishes in 2009
32 were in the bottom 100 counties in the United States in terms of
33 median household income.

1
2

Table 2-4. Employment and Income in the Vicinity of the Atchafalaya Basin, Louisiana, Project, 2002-2009

Unemployment rate (percent)										
Parish	2002	2003	2004	2005	2006	2007	2008	2009	Median Household Income (2009)	% of State Median Household Income
PRIMARY PARISHES										
Ascension	6.2	6.6	6.1	6.1	3.6	3.5	4	6	\$60,995	143.70
Assumption	6.1	6.5	7.9	9.3	4.8	4.1	5.3	8	\$42,494	100.10
Avoyelles	7	8.3	7.5	7.8	4.5	4.6	5.5	7.6	\$30,791	72.50
East Baton Rouge	5.2	5.7	5.3	6.5	3.9	3.6	4.3	6.2	\$44,720	105.30
East Feliciana	6.5	7.3	6.6	6.4	4.3	4.2	4.9	7.2	\$38,856	91.50
Iberia	6.5	6.2	5.8	6.3	3.4	3.3	3.9	6.7	\$41,272	97.20
Iberville	7.9	8.9	8.4	8.4	5.6	5.2	6.3	9.4	\$38,703	91.20
Lafayette	4.4	4.7	4.1	4.9	2.8	2.6	3.1	5.2	\$47,901	112.80
Pointe Coupee	6.7	7.4	7	8.3	4.4	4.2	4.8	6.9	\$38,944	91.70
St. James	8.8	9.7	9.2	10	6	6.1	6.8	9.4	\$46,774	110.20
St. Landry	6.9	7.4	6.1	6.7	4	4.1	4.8	7.5	\$32,877	77.40
St. Martin	6.5	5.9	5.2	5.6	3.4	3.3	3.8	6.6	\$39,719	93.50
St. Mary	7.3	7.2	8.1	8.2	4.1	3.8	4.4	7.5	\$38,437	90.50
Terrebonne	4.6	4.8	4.7	6.2	3	2.7	3.4	4.9	\$47,565	112.00
West Baton Rouge	5.8	6.9	6.3	6.6	3.8	3.6	4.5	6.7	\$45,167	106.40
West Feliciana	7.2	7.6	6.5	7.6	4.7	5	5.3	7.5	\$49,936	117.60
SECONDARY PARISHES										
Acadia Parish	6	6.6	5.3	5.7	3.2	3.3	3.8	6.5	\$35,583	83.80
Catahoula Parish	9.3	9.4	7.4	7.8	5	5.2	6.1	10.3	\$29,892	70.40
Concordia Parish	9.6	11.1	9.4	10	5.8	5.4	6.8	11.3	\$28,520	67.20
Evangeline Parish	7	7.8	6.4	6.8	4.1	4.5	4.9	8.1	\$30,897	72.80
Lafourche Parish	4.5	4.7	4.6	5.6	2.9	2.6	3.2	4.6	\$47,909	112.80
Livingston Parish	6	6.6	6.1	5.5	3.6	3.4	4	6.2	\$51,946	122.30
Rapides Parish	5.9	6.3	5.2	5.7	3.6	3.7	4.2	6.4	\$38,872	91.50
St. Charles Parish	5.4	5.5	4.9			3.4	4.3	6.4	\$56,869	133.90
St. Helena Parish	6.3	6.7	6.2	13.4	7	6.7	8.1	10.8	\$32,014	75.40
St. John the Baptist Parish	6.9	6.8	6.4			4.4	5.5	8.3	\$46,380	109.20
Vermilion Parish	6.5	6.5	5.5	5.6	3.4	3.4	4	6.6	\$38,872	91.50
Louisiana	5.9	6.2	5.5	6.4	3.8	3.8	4.5	6.8	\$42,460	100.00

3 (U.S. Bureau of the Census 2011)

1 **2.2.3 Employment**

2 Table 2-5 summarizes employment activity in the socioeconomic
3 analysis area, based on the level of employment in each industry,
4 as of 2009. The distribution of employment among employment
5 categories in the socioeconomic analysis area is not dramatically
6 different from the state of Louisiana as a whole, although the
7 primary and secondary parishes have a somewhat greater
8 percentage of employment in agriculture, forestry, fishing and
9 hunting, mining, and manufacturing than do other parishes in the
10 state overall. The data contained in Table 2-5 indicate job
11 locations rather than the employees' place of residence.
12

13 **2.2.4 Waterborne Commerce**

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18
19 *Commercial*
20 *waterborne*
21 *commerce is very*
22 *important to the*
23 *economic*
24 *development of the*
25 *analysis area.*
26

14 Geography has dealt Louisiana a positive hand in the nation's
15 commerce. Commercial waterborne transportation has been very
16 important to the economic development of the socioeconomic
17 analysis area. The overall system of waterways in Louisiana
18 consists of a network of rivers, bayous, and lakes and includes
19 man-made infrastructure improvements for navigation (e.g., ports
20 and locks) and navigable channels, as well as flood control
21 features and environmental restoration projects. The Atchafalaya
22 River in its managed state is a distributary of the Red River and the
23 Mississippi River, and is part of an integrated waterborne
24 transportation network connecting those major rivers with the
25 GIWW. The primary GIWW traverses all of Louisiana's drainage
26 basins that reach the coast and transects the lower Atchafalaya
27 basin from east to west at Morgan City. The two primary
28 waterways flowing through the Atchafalaya Basin are the channels
29 of the Atchafalaya River, and the GIWW Alternate Route. The
30 GIWW Alternate Route allows navigation from the Mississippi River
31 across the northern reaches of the Terrebonne Basin and follows
32 the Atchafalaya east guide levee, entering the Atchafalaya system
33 at the Bayou Sorrel Lock (DOTD 2007).
34

35 The significance of commerce on the Atchafalaya River cannot fully
36 be recognized without considering the importance of Louisiana
37 ports in the commerce of the nation as a whole. In 2009, the Port
38 of South Louisiana, Port of New Orleans, Port of Baton Rouge, and
39 Port of Plaquemines (all on the Mississippi River) were in 2009
40 respectively ranked first, sixth, 14th and 15th of all U.S. ports in total
41 tonnage and rank first, fifth, sixth, and eighth respectively in
42 domestic tonnage. Small ports on navigable waterways within the
43 socioeconomic analysis area are the Port of Alexandria (Red
44 River), Port of Pointe Coupee (Atchafalaya River), Avoyelles Parish
45 Port (Atchafalaya River), Port of Krotz Springs (Atchafalaya River),
46 Port of Iberia (GIWW), Port of Terrebonne (Houma Navigation

Table 2-5. Employment by Employment Category, 2009

	Agriculture, forestry, and fishing and hunting, and mining	Construction	Manufacturing	Wholesale trade	Retail trade	Transportation and warehousing, and utilities	Information	Finance and insurance, and real estate and rental and leasing	Professional, scientific, and management, and administrative and waste management services	Educational services, and health care and social assistance	Arts, entertainment, and recreation, and accommodation and food services	Other services, except public administration	Public administration	Civilian employed population 16 years and over
Louisiana	85,146	169,537	164,376	61,559	232,214	99,702	32,794	108,413	159,691	435,577	181,588	99,479	106,606	1,936,682
PRIMARY PARISHES														
Ascension	548	6,196	7,192	2,125	5,163	2,454	610	3,228	4,485	8,545	3,288	1,888	2,217	47,939
Assumption	723	1,369	1,170	385	1,153	605	132	351	729	1,540	251	577	383	9,368
Avoyelles	939	1,585	932	182	1,767	781	193	703	699	3,799	2,142	771	1,426	15,919
East Baton Rouge	1,183	15,022	15,810	6,375	24,555	8,781	4,237	13,962	22,394	47,894	21,844	10,778	14,430	207,265
East Feliciana	236	779	1,011	79	693	427	52	268	496	2,158	264	444	823	7,730
Iberia	3,923	2,095	3,208	1,090	3,641	1,258	212	1,912	2,189	6,432	2,299	2,204	1,173	31,636
Iberville	399	1,770	2,158	229	1,590	582	90	622	1,077	2,164	862	451	926	12,920
Lafayette	9,613	6,052	6,159	3,208	12,970	4,275	2,721	6,343	10,744	22,024	9,716	4,908	4,035	102,768
Pointe Coupee	551	826	1,128	331	1,069	683	76	460	702	1,884	534	679	648	9,571
St. James	182	858	2,699	219	914	678	45	227	355	1,902	477	435	449	9,440
St. Landry	2,666	2,963	2,225	870	4,925	1,780	592	1,254	1,947	8,469	2,565	1,624	1,539	33,419
St. Martin	2,263	2,307	2,393	931	3,224	1,409	317	1,080	1,175	3,942	1,365	1,361	959	22,726
St. Mary	2,272	1,646	2,546	601	2,577	1,322	237	1,071	1,380	3,615	2,564	1,316	962	22,109
Terrebonne	5,623	3,909	4,466	2,022	6,284	3,194	511	2,414	2,910	8,853	3,431	2,477	1,516	47,610
West Baton Rouge	152	1,162	1,508	292	1,167	708	26	451	516	2,318	1,321	518	705	10,844
West Feliciana	105	380	727	48	376	393	37	175	267	1,189	218	277	815	5,007
Subtotal	31,378	48,919	55,332	18,987	72,068	29,330	10,088	34,521	52,065	126,728	53,141	30,708	33,006	596,271
% of LA total	37%	29%	34%	31%	31%	29%	31%	32%	33%	29%	29%	31%	31%	31%
Louisiana	85,146	169,537	164,376	61,559	232,214	99,702	32,794	108,413	159,691	435,577	181,588	99,479	106,606	1,936,682
SECONDARY PARISHES														
Acadia	3,244	1,999	1,730	719	2,712	1,289	266	1,175	1,437	5,842	1,498	1,462	704	24,077
Catahoula	563	268	223	109	370	376	13	134	141	993	116	127	351	3,784
Concordia	868	208	294	236	930	393	100	204	350	1,691	551	469	480	6,774
Evangeline	1,661	1,264	702	123	1,457	461	138	521	711	3,293	880	695	785	12,691
Lafourche	3,730	3,904	4,500	1,545	4,875	2,870	404	1,756	2,282	8,342	2,911	2,365	1,611	41,095
La Salle	1,126	243	261	147	396	224	24	272	120	1,379	237	261	391	5,081
Livingston	713	8,755	6,096	2,026	6,578	2,350	815	3,374	4,671	9,535	3,473	2,652	3,017	54,055
Rapides	1,741	4,254	4,289	1,534	7,309	3,008	996	2,656	3,561	16,959	4,106	2,532	4,098	57,043
St. Charles	472	2,159	3,473	1,355	2,584	1,505	237	1,235	2,131	4,829	1,736	1,071	1,259	24,046
St. Helena	282	592	182	26	467	205	53	308	287	1,175	100	190	204	4,071
St. John the Baptist	215	2,274	3,081	613	2,596	1,761	221	1,296	1,446	3,755	1,865	783	1,068	20,974
Vermilion	4,036	2,029	1,353	940	2,886	1,395	186	1,150	1,353	4,625	1,340	1,565	932	23,790
Subtotal	18,651	27,949	26,184	9,373	33,160	15,837	3,453	14,081	18,490	62,418	18,813	14,172	14,900	277,481
% of LA total	22%	17%	16%	15%	14%	16%	11%	13%	12%	14%	10%	14%	14%	14%

(U.S. Bureau of the Census 2011)

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1 Canal), Port of West Feliciana (Mississippi River), Port of Vermilion
2 (Vermilion River), Twin Parish Port (Delcambre Canal, GIWW), and
3 the Port of West St. Mary (GIWW)(American Association of Port
4 Authorities [AAPA] 2009; DOTD 2007).

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14 ***The Atchafalaya***
15 ***River is a***
16 ***significant inland***
17 ***waterway freight***
18 ***route.***
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20 The location of the Atchafalaya River between the Mississippi and
21 GIWW means it is also a significant inland waterway freight route.
22 The Upper Atchafalaya River carried a total of approximately 13.4
23 million short tons of freight in 2000 and 9.6 million short tons in
24 2008. Crude petroleum, non-metallic minerals, and petroleum
25 products typically have contributed the great majority of the total
26 tonnage on the Atchafalaya River. Non-metallic minerals
27 consisting of sand, gravel, rock, limestone, and waterway
28 construction material are other important cargoes. The trend for
29 the last decade has been for petroleum and bulk materials to
30 decline as a percentage of the total freight carried. In 2000,
31 petroleum and petroleum products accounted for about 6.5 million
32 tons and bulk materials for about 5 million tons. Petroleum
33 accounted for about 30 percent of Atchafalaya River cargo traffic in
34 2002, but approximately 80 percent of total tonnage in 2008 was
35 petroleum and petroleum products, and bulk materials, each
36 comprising about 3.8 million tons. Chemicals, food and farm
37 products, and other freight have remained relatively consistent and
38 made up the remainder in roughly equivalent proportions (USACE
39 WCSC 2008; DOTD 2007).

40 The potential for increased traffic along the Atchafalaya River has
41 not been realized partly due to the Simmesport Railroad Bridge,
42 which has been determined by the U.S. Coast Guard to be a
43 hazard to navigation during high water. The alternative is for barge
44 tows to utilize the GIWW Alternate Route (Morgan City-Port Allen
45 Route) or Mississippi River, which increases trip length.
46 Additionally, traffic congestion at the Bayou Sorrel Lock (which
allows vessels using the GIWW Alternate Route to cross the East
Atchafalaya Basin Protection Levee) also causes delays (DOTD
2007).

The GIWW intersects the Atchafalaya River at Morgan City.
Morgan City ranked 97th of all U.S. ports in total tonnage in 2009
(2.13 million short tons), 111th in foreign tonnage, and 71st in
domestic tonnage. Lake Charles on the GIWW is a more significant
port nationally and was 11th of all U.S. ports in total foreign
tonnage in 2009 (AAPA 2009). Approximately 81 percent of all
cargo movements on the Louisiana portion of the GIWW are
designated as through cargo, while 94 percent of tonnage on the
Morgan City-Port Allen route is classified as through cargo. In the

1 years 2000 to 2008 the Louisiana portion of the GIWW carried a
2 fairly consistent average of 117 million tons of freight per year.
3 Crude petroleum, petroleum products, industrial chemicals, non-
4 metallic minerals, farm products, and crude petroleum generate
5 more than 80 percent of the traffic on the GIWW and Alternate
6 Route. More than one-third of cargo tonnage is crude petroleum
7 and petroleum products moving between refineries in the Houston
8 area and Alabama (USACE WCSC 2008; DOTD 2007).
9

10 **2.2.5 Agricultural and Wild Production**

11 Statistics (2006) for agricultural and wild resource production
12 enterprises for the seven parishes that have area within the ABLP
13 levees (Avoyelles, Pointe Coupee, St. Landry, Iberville, St. Martin,
14 Iberia, and St. Mary; Assumption is an Atchafalaya Basin parish but
15 has no territory within the ABLP levees) is provided in Appendix G.
16

17 **2.2.5.1 Commercial Fishing**

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20
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23
24
25 ***Commercial fishing***
26 ***is an important***
27 ***economic activity in***
28 ***the ABLP.***

18 The commercial fishing industry in the Atchafalaya Basin
19 historically reached important levels with the construction of
20 railroads in the region in the late nineteenth century, and was
21 furthered by development of the internal combustion boat motor in
22 the early-twentieth century. In the early twenty-first century,
23 commercial fishing remains an important economic activity in the
24 region. LSU Agricultural (Ag) Center data for production and value
25 of crawfish and finfish in the seven parishes with territory lying
26 within the ABLP levees: Avoyelles, Pointe Coupee, St. Landry,
27 Iberville, St. Martin, Iberia, and St. Mary parishes (LSU Ag Center
28 2009). Of these, St. Mary has only a small area at the southern
29 end of the Basin within the ABLP levees. The data is imperfect
30 and does not correspond in all respects with estimates of total
31 crawfish and finfish production from other sources. Although the
32 data may underestimate production in several areas and do not
33 distinguish between fish that were taken inside or outside the ABLP
34 levees, Appendix G provides a sense of the scale and economic
35 value of commercial fishing in the area. The value of recreational
36 fishing is not considered in Appendix G but is discussed below.
37

38 **2.2.5.1.1 Crawfishing**

39 Contemporary supply and demand has made Atchafalaya Basin
40 crawfish a much more important commodity in the Basin parishes
41 than finfish produced in aquaculture or caught in the wild. The wild
42 crawfish harvest is significant; however, it is greatly exceeded in
43 value by farm-raised production. Overall, the value of farm-raised
44 crawfish has in recent years typically exceeded the wild catch by a
45 factor of about seven or eight to one. Of the 127.3 million pounds

1 of crawfish produced in Louisiana in calendar year 2008, 111.9
2 million pounds (87.9 percent) came from farms and 15.4 million
3 pounds (12.1 percent) was harvested from the wild (Isaacs and
4 Lavergne 2010). Aquaculture is less important in the Basin
5 parishes than elsewhere in the state; nevertheless, farms in the
6 seven parishes in Appendix G produced crawfish worth \$35 million
7 in gross value in 2006, more than five times the dockside value of
8 the wild-caught crawfish harvest in those same parishes
9 (Appendix G).

10
11 Although wild crawfish compete in the marketplace with farm-raised
12 crawfish, some consumers prefer the wild product because of its
13 frequently larger size. Most wild crawfish are caught in the
14 Atchafalaya Basin, where the available quantity and quality of the
15 crawfish are the result of a complex variety of environmental
16 factors. The volume of the wild crawfish harvest is almost
17 completely constrained by the timing and duration of the annual
18 winter/spring floodwater event in the Basin, and therefore the size
19 of crawfish harvests vary significantly with these natural conditions.
20 Appendix G indicates that the 2006 harvest of wild crawfish in the
21 seven parishes with area located inside the ABLP levees was
22 approximately 11 million pounds, harvested by over 1,000 fishers.
23 The year 2006 experienced an exceptionally low wild crawfish
24 harvest; the total Louisiana wild crawfish harvest was 15.2 million
25 pounds in 2005 and 14.9 million pounds in 2007. In 2008,
26 prolonged floodwaters in the Basin increased production. As a
27 result, the freshwater crawfish harvest in 2008 was 15.4 million
28 pounds, up substantially from 2005, 2006, and 2007, but far less
29 than the 1993 record level of 50 million pounds. The 2010 crawfish
30 season produced about 8.6 million pounds of wild crawfish
31 harvested in the Atchafalaya Basin. The value of crawfish likewise
32 varies annually due to natural conditions and market forces. In
33 2006, the wild crawfish harvest of the seven-parish ABLP area had
34 a gross value of \$6.6 million. Total Louisiana wild crawfish sales
35 were \$8.5 million in 2007 and \$9.3 million in 2008 (Isaacs and
36 Lavergne 2010; LDNR 2010).

20 ***Approximately 8.6***
21 ***million pounds of***
22 ***crawfish were***
23 ***harvested in the***
24 ***Atchafalaya Basin***
25 ***in 2010.***

37
38 The Louisiana Commercial Crawfishers Survey Report indicates
39 that in 2009 over three-quarters of the total statewide wild crawfish
40 catch was harvested in the Atchafalaya Basin (Isaacs and
41 Lavergne 2010). Assumption, Iberville, St. Martin, and St. Mary
42 parishes are the leading areas of both wild crawfish production and
43 residence of crawfishers. The trend appears to have been for the
44 number of commercial crawfishers to decline somewhat since 2006
45 while catches have grown; 741 crawfish harvesters of St. Martin,
46 Iberville, and Assumption parishes together accounted for nearly

1 two-thirds of the wild crawfish harvested in the state in 2009
2 (Isaacs and Laverge 2010).

3
4 As with any commercial fishery, there is a distribution of crawfish
5 harvesters by size of catch. The Survey reports that the 2009
6 median catch among all crawfish harvesters was 8,376 pounds, but
7 fully one-quarter of fishers took less than 2,444 pounds and one-
8 quarter landed 22,938 pounds or more each (Photograph 2-4).
9 This uppermost 25 percent of crawfish harvesters in terms of catch

10 weight were responsible for
11 more than two-thirds of state
12 total wild crawfish catch, and
13 each crawfish harvesters in
14 the top quartile collected
15 42,800 pounds on average.
16 The survey found that of the
17 three top-producing parishes
18 (St. Martin, Iberville, and
19 Assumption), St. Martin
20 Parish had the lowest
21 percentage of its crawfishers
22 in the bottom quartile by
23 catch weight and highest percentage of its crawfishers in the top
24 quartile by catch weight: fully 35 percent of all of the top quartile of
25 Louisiana crawfishers by catch weight resided in St. Martin Parish.
26 Assumption and Iberville parishes had a somewhat more balanced
27 distribution of crawfish harvesters across the quartiles (Isaacs and
28 Lavergne 2010).



Photograph 2-4. Crawfish Harvester in the ABFS

29
30 The Survey data reinforces the observation that St. Martin Parish
31 has a concentration of crawfish harvesters for whom the crawfish
32 harvest is a major income-producing activity. Overall, on the other
33 hand, a majority of crawfish harvesters and greater quantity of
34 catch by weight come from east of the Atchafalaya River. On the
35 basis of 2008 prices, the Survey observed that half of all
36 commercial crawfish harvesters obtained \$5,059 or less in revenue,
37 and three quarters of them less than \$13,824 in revenue during the
38 2008-2009 season. The average crawfish harvester in the
39 uppermost quartile by catch weight earned an estimated \$25,850
40 during that season (Isaacs and Lavergne 2010).

41 42 2.2.5.1.2 Freshwater Finfishing

43 The Atchafalaya Basin also plays a major role in the Louisiana
44 freshwater finfish harvest. Wild-caught freshwater finfish are
45 comprised primarily of bowfin (*Amia calva*), catfish, buffalo, shad
46 (*Alosa sapidissima*), garfish (*Lepisosteus* spp.) and common carp

1 (Cyprinus carpio). Freshwater finfish represent less total economic
2 value than either crawfish in the Basin region or marine finfish
3 statewide. The seven parishes and nearly 700 fishers represented
4 in Appendix G produced approximately 8.3 million pounds of
5 freshwater fish in 2006, with a gross dockside value of \$2.6 million,
6 over one-half of the total value of Louisiana freshwater finfish that
7 year. Avoyelles Parish is the leading producer of freshwater finfish
8 among the seven parishes in Appendix G. Like all wild animal
9 products, freshwater finfish harvests are subject to a variety of
10 natural and market forces. Total commercial statewide freshwater
11 finfish production in 2006 was worth \$4.4 million in gross value
12 (accounting for retail sales of approximately \$29.5 million),
13 supported 440 full-time jobs, and had a total economic effect of
14 more than \$39 million. Gross value of freshwater finfish produced
15 in Louisiana was \$4.7 million in 2007. Statewide, total freshwater
16 finfish landings in 2008 decreased in value by 20 percent from
17 2007 levels to \$3.9 million on 10.9 million pounds sold by 1,723
18 commercial fishers. Catfish are the mainstay of the more valuable
19 freshwater species, and the price per pound for catfish has
20 remained relatively stable. Sales of catfish caught commercially in
21 Louisiana waters were \$1.9 million on 4.3 million pounds in 2008.
22 Overall, landings from the Louisiana freshwater fisheries sector in
23 2008 had a gross value of \$13.2 million. When value added (\$11.2
24 million) was included, freshwater fisheries had a total value of
25 \$24.4 million in Louisiana in 2008 (Appendix G; Smithwick 2008: 8-
26 9, 14).
27

28 **2.2.5.2 Recreational Fishing**

29 The economic impact of recreational fishing in the Atchafalaya
30 Basin region is certainly large. Although complete data broken
31 down by parishes within the socioeconomic research area are not
32 available, the Atchafalaya Basin is a major recreational destination
33 in the state, and statewide statistics convey the importance of
34 recreational fishing in economic terms. Data from the 2006
35 *National Survey of Fishing, Hunting, and Wildlife-Related*
36 *Recreation* (USFWS 2006) provided data indicating that Louisiana
37 resident anglers (salt and freshwater) declined by 30 percent in the
38 decade between 1996 and 2006 (USFWS 2006:14). However, the
39 data provided by the USFWS combines saltwater and freshwater
40 fishers and moreover does not agree with data collected by LDWF,
41 which shows much smaller declines between 1996 and 2006.
42 About 728,000 Louisiana residents (about one in five of all
43 Louisianans) participated in freshwater and/or marine fishing in
44 2006. Actual increases in freshwater fishing licenses occurred in
45 following years. In 2006, recreational freshwater fishing in
46 Louisiana supported over 10,000 jobs, produced \$64 million in

state and local taxes, was responsible for statewide retail sales of more than \$590 million, and had a total economic effect of over \$950 million (Smithwick 2008: 8-9, 14). By 2010, LDWF data shows 84,000 more freshwater fishing licenses statewide than had been issued in 2006, a 17 percent increase in a 4-year period, a far larger increase than can be accounted for by population growth. Table 2-6 indicates the number of residential crawfishing and fishing licenses in the parishes of the socioeconomic study area in 2010. Almost half of all resident fishing licenses in the state of Louisiana in 2010 were held by residents of the socioeconomic study area, making residents of these parishes slightly more likely to hold fishing licenses than residents in the remainder of the state (LDWF 2010; Outdoor Industry Foundation 2006).

Table 2-6. Recreational Freshwater Fishing License Sales by Parish of Vendor or Customer, License Year 2010

Parish	Resident Recreational Crawfish Traps	All Resident Fishing Privileges	All Non-Resident Fishing Privileges
Acadia	0	5,894	195
Ascension	22	14,321	1,254
Assumption	72	3,776	246
Avoyelles	43	7,449	328
Catahoula	3	2,059	533
Concordia	7	3,676	8,579
East Baton Rouge	86	30,487	1,557
East Feliciana	2	973	50
Evangeline	5	5,252	365
Iberia	42	12,350	811
Iberville	44	4,301	295
Lafayette	29	22,475	1,334
Lafourche	36	23,066	3,270
LaSalle	4	3,341	311
Livingston	15	13,302	738
Pointe Coupee	29	4,878	363
Rapides	12	22,094	2,280
St. Charles	13	5,794	639
St. Helena	0	118	0
St. James	1	1,180	30
St. John the Baptist	11	5,277	702
St. Landry	32	11,670	566
St. Martin	121	11,735	1,132
St. Mary	180	10,351	1,387
Terrebonne	18	27,025	3,698
Vermilion	7	15,641	645
West Baton Rouge	13	6,022	462
West Feliciana	9	622	52
Socioeconomic Area Total	856	275,129	31,822
Louisiana Total	1,227	588,964	148,745

(LADWF 2010)

1 **2.2.5.3 Other Animal Resources**

13 *The 2009 alligator*
14 *harvest in Louisiana*
15 *was valued at \$33.8*
16 *million.*

2 **Alligators.** Statewide the alligator industry is significant. Although
3 available data is incomplete, the total value of wild-caught alligator
4 from the Atchafalaya Basin is certainly much lower than that of the
5 farm-raised product. Farm-raising of alligators is centered
6 elsewhere in the state, and in the six parishes with territory inside
7 the ABLP levees it is almost zero. For much of the first decade of
8 the twenty-first century the wild alligator harvest was a growing
9 business. In 2003, retail sales of wild harvest alligator were valued
10 at \$6.15 million and had a total economic effect of \$11.3 million.
11 The combined value of retail sales of wild and farm-raised hides,
12 meat, and eggs in 2006 reached \$60 million, and the total
13 economic effect of the alligator industry was \$104.3 million. Wild
14 alligator harvesting in the ABLP is concentrated in the southern
15 portion. In 2006, the six parishes with area within the ABLP levees
16 produced 13,606 feet of alligator with a gross dockside value of
17 only \$340,300; half of this total came from St. Mary Parish, which
18 has considerable area of alligator habitat outside the ABLP levees.
19 Following several years of impressive growth in farmed alligator
20 production, industry expansion reversed in response to the
21 decreased demand for alligator products as the global economic
22 recession worsened in 2009. Tag data from LDWF suggest the
23 number of alligators harvested in 2009 was down 10 percent from
24 the prior year. Nonetheless, the 2009 farm-gate value was
25 estimated at \$32.3 million for farm-raised alligators and \$1.3 million
26 for the wild alligator harvest. In addition, another \$200,000 worth of
27 wild alligators were harvested in the state, but without a parish
28 designation (LSU Ag Center 2008; Smithwick 2005; 2008).

29
30 **Other Reptiles and Amphibians.** Reptiles (other than alligators)
31 and amphibians are collected in Louisiana for human consumption,
32 laboratory research, and the pet trade. These industries have a
33 relatively small overall economic impact but have become
34 controversial due to impacts on wild populations and health threats
35 wild and farm-raised turtles in particular can pose to humans.
36 LDWF estimated a total value of these exports in 2006 at
37 approximately \$716,900. The estimate is based on excise taxes
38 levied on reptiles and amphibians shipped out of state, and does
39 not include the value of shipments within the state. The total
40 economic effect of reptile and amphibian exports has been
41 estimated at more than \$927,000 in 2003 and \$955,000 in 2006
42 (Smithwick 2008:11). As the largest river swamp in the state, the
43 Atchafalaya Basin undoubtedly is the source of a significant
44 proportion of exports and internal state trade in reptiles and
45 amphibians, but specific data are lacking.

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8 ***Between 2002 and***
9 ***2009, 1.8 Million***
10 ***nutria were trapped***
11 ***as part of the***
12 ***Coastal Nutria***
13 ***Control Program.***
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Fur trapping. Historically, Louisiana was a major domestic producer of wild animal pelts, and fur trapping was a part-time extractive pursuit for Atchafalaya Basin residents in periods when market demand for furs was stronger than it had been in recent decades. The 2006 harvest value of furs in the state has been estimated at less than \$125,000 and the total economic effect at \$229,000 (LSU Ag Center 2008). More significant by far in state terms is the annual Coastal Nutria Control Program of LDWF, which began in 2002. The program pays a \$5 bounty for each nutria tail, and the program area is bounded on the north by Interstate 10 from the Texas line to Baton Rouge, Interstate 12 from Baton Rouge to Slidell, and I-10 from Slidell to the Mississippi line. The program thus encompasses the lower portion of the ABLP area. In 2006, bounties were paid on 375,683 nutria tails, for a harvest value of \$1.88 million and a total economic effect of \$2.83 million. In 2007-2008, trappers harvested 308,212 nutria, and in 2008-2009, 262 trappers harvested 334,038 animals. In the 2008-2009 season, St. Martin Parish participants trapped 44,972 nutria (harvest value: \$224,860) and St. Mary Parish trappers received 34,811 bounties (harvest value: \$174,055). Between 2002 and 2009, almost 1.8 million animals had been trapped in the program (Louisiana Sportsman 2009; Smithwick 2008:11-12, 16).

24 **2.2.5.4 Recreational Hunting**

25 Recreational hunting is big business in Louisiana. Unfortunately,
26 complete economic data broken down by individual parishes is not
27 available. The long-term national data concerning wildlife-related
28 recreation shows that participation in hunting is declining, but
29 Louisiana do not appear to follow this trend. The *2006 National*
30 *Survey of Fishing, Hunting, and Wildlife-Related Recreation*
31 (USFWS 2006) provided data indicating that Louisiana resident
32 hunters declined by 30 percent between 1996 and 2006 (USFWS
33 2006:15). These data do not correspond with data collected by
34 LDWF, which showed relative stability in the number of resident
35 hunting licenses in the state between 1996 and 2006. In 2006,
36 about 288,000 Louisianans, an estimated 8 percent of the total
37 Louisiana population, engaged in recreational hunting. In 2010, the
38 number of resident hunting licenses in Louisiana surpassed
39 317,000, and this was not only the highest number since 2000, but
40 the highest number of licenses ever issued in the state (USFWS
41 2006: LDWF 2010: Outdoor Industry Foundation 2006). The
42 conflicting data, apparently caused by different measurement
43 methods in use among agencies and over time, makes prediction
44 of future trends difficult. However, Louisiana does not seem to
45 share in any national trend of decline in recreational hunting.

1 The total economic effect of recreational hunting in Louisiana was
 2 estimated at \$1.02 billion in 2003, and in 2006 was estimated at
 3 over \$975 million. The industry supported over 9,400 jobs in 2003,
 4 and in 2006 supported an estimated 13,000 jobs. Recreational
 5 hunting produced over \$62 million in local tax revenues in 2006.
 6 The breakdown of the total economic effect among game
 7 categories is provided in Table 2-7.
 8
 9

Table 2-7. Economic Effect of Hunting in Louisiana, 2006

	Retail Sales	Total Economic Effect
Deer Hunting	\$307,088,187	\$507,147,853
Turkey Hunting	\$73,254,800	\$120,161,594
Hog/Feral Pig Hunting	\$10,307,278	\$17,645,016
Big Game Hunting ¹	\$390,650,265	\$644,954,463
Small game Hunting ²	\$55,738,226	\$91,742,604
Migratory Bird Hunting ³	\$93,081,184	\$153,569,060
All Hunting	\$594,435,590	\$975,249,784

¹ Deer, turkey, and hog/feral pig

² Rabbit and squirrel

³ Duck, goose, dove, woodcock, snipe, rail, gallinule, coot
 (Southwick 2009:13)

10
 11 Additionally, the number of Louisiana hunting licenses in the
 12 socioeconomic area in 2010 are provided in Table 2-8.
 13
 14

Table 2-8. Recreational Hunting License Sales by Parish of Vendor or Customer, License Year 2010

Parish	All Resident Hunting Privileges	All Non-Resident Hunting Privileges
Acadia	4,176	160
Ascension	7,602	155
Assumption	1,970	6
Avoyelles	6,306	130
Catahoula	1,373	57
Concordia	2,211	383
East Baton Rouge	18,449	376
East Feliciana	1,101	34
Evangeline	4,263	45
Iberia	4,999	151
Iberville	2,464	16
Lafayette	13,011	591
Lafourche	8,638	118
LaSalle	2,606	145
Livingston	8,173	290
Pointe Coupee	2,861	26
Rapides	15,388	507
St. Charles	2,456	53

Table 2-8, continued

Parish	All Resident Hunting Privileges	All Non-Resident Hunting Privileges
St. Helena	130	3
St. James	958	0
St. John the Baptist	2,210	10
St. Landry	8,993	185
St. Martin	5,622	123
St. Mary	4,708	139
Terrebonne	9,095	537
Vermilion	5,839	546
West Baton Rouge	3,047	58
West Feliciana	569	17
Socioeconomic Area Total	149,218	4,861
Louisiana Total	317,081	22,341

(LDWF 2010)

As indicated above, about 47 percent of resident hunting licenses in Louisiana are held by residents of the socioeconomic study area, very close to the proportion of total state population that resides in the socioeconomic analysis area parishes.

2.2.5.4.1 Hunting Leases

Hunting leases are an important economic factor in the ABLP region.

Hunting leases represent a measurable economic factor on Atchafalaya Basin region lands. Due to variations in commodity prices and federal and state cost-sharing programs, over the decades thousands of acres of private lands in Louisiana have been kept in or converted to wildlife habitat for leasing purposes. In 2001, nearly 5,900 Louisiana private landowners leased 7.23 million acres of land for fee hunting. The total gross farm value of these operations was slightly more than \$38.5 million, with per-acre fees at that time ranging from a few dollars per acre to as high as \$70 per acre in some waterfowl areas. These most valuable leases involved the leasing of individual blinds surrounded by habitat areas that attract waterfowl, such as occur, for example, in the vicinity of South Farm of the ABFS. White-tailed deer is the major game animal in upland hunting lease activity, but wild turkey, squirrel and rabbits, and other species are also hunted (Reed 2002).

Louisiana Ag Center statistics in Appendix G provide some information on hunting leases within the seven parishes with lands inside the ABLP levees. As of 2006, about 241,100 acres in these seven parishes were leased for waterfowl hunting and about 581,400 acres were leased for all other game. Waterfowl leases were estimated to have a gross value of \$15 to \$50 per acre, giving Iberville Parish waterfowl leases an estimated gross farm value of

1 \$5.0 million and Avoyelles Parish waterfowl leases a gross value of
2 \$4.5 million. Leases for other game were estimated at \$7.50 per
3 acre, giving St. Martin leases an estimated value of \$1.35 million
4 and St. Landry leases an estimated value of \$1.3 million (LSU Ag
5 Center 2008).
6

7 **2.2.5.5 Other Natural Resource-Related Activities**

8 A variety of other natural resource-related activities have an
9 economic impact in the Atchafalaya Basin. Although data broken
10 down by individual parishes could not be obtained, statewide data
11 for some activities are available.
12

13 **Wildlife watching.** An estimated 819,000 Louisiana residents
14 participated in wildlife viewing, photography, and feeding in 2006
15 with an estimated statewide total economic effect of over \$500
16 million. However, it should also be noted that over three-quarters
17 of participants in wildlife viewing do so “around the home,” and
18 consequently the numbers of wildlife viewers, photographers or
19 feeders traveling to engage in the activity away from home are very
20 much smaller. By way of comparison, the number of participants in
21 wildlife watching (nearly one in four of all Louisiana residents) is
22 greater than the number of participants in recreational freshwater
23 and marine fishing in Louisiana, and nearly three times the number
24 of people who participate in recreational hunting. However, wildlife
25 watching generates much less economic activity per participant
26 than does either recreational fishing or hunting. The economic
27 impact figures for wildlife viewing are a little less than one-third of
28 those for recreational freshwater fishing and about one-half of
29 those for recreational hunting. This is because much recreational
30 wildlife watching is done around the home and involves neither
31 travel nor large or frequent expenditure. However, the average
32 Louisiana resident engaging in wildlife watching activities away
33 from home expended approximately \$1,400 per year and \$90 per
34 day on the activity in 2006 (Southwick 2008). Differing estimation
35 methods over time make it difficult to evaluate the long-term trend
36 in these activities. The economic impact of non-consumptive fish
37 and wildlife recreation in 1996 was estimated at \$512.3 million and
38 declined to an estimated \$317.4 million in 2003; so, the upward
39 trend between 2003 and 2006 may represent a return to earlier
40 levels (Southwick 1997, 2005; Isaacs 2010).
41

42 **Recreational boating.** The economic impact of recreational
43 boating in Louisiana is very large, although estimators must be
44 careful to avoid double counting of commercial and recreational
45 fishing, hunting, and wildlife-viewing data. Louisiana has a relatively
46 high incidence of boat ownership among all states. There were

1 319,000 registered boats in Louisiana in 2009, the highest number
2 since 2006. This statistic does not include pirogues, canoes,
3 kayaks, work boats or other boats without motors. Some of the
4 growth in the number of registrations in 2006-2009 consisted of
5 recovery from hurricane losses, but boat registrations had actually
6 reached a previous peak in 2002. The estimated total economic
7 impact of recreational boating in Louisiana in 2006 was \$1.33
8 billion. The average annual spending on recreational boating, per
9 craft, in Louisiana in 2006 was estimated at nearly \$1,400, and
10 average trip spending per boat day was nearly \$80. Total annual
11 craft and trip spending was estimated at \$3,000 per boat.
12 Kayaking, rafting, and canoeing also had an estimated 130,000
13 Louisiana residents participating in these activities in 2006. These
14 data cannot be directly compared with data collected for earlier
15 years, so it is difficult to say what the economic trend for
16 recreational boating may be (Southwick 2008; Outdoor Industry
17 Foundation 2006).

18
19 **Bicycling, camping, and hiking.** Other active outdoor recreation
20 participated in by Louisianans includes bicycling, camping, and trail
21 hiking. The number of Louisiana residents to participate in paved-
22 road and off-road bicycling in 2006 was estimated to be nearly
23 669,000 persons, and nearly 427,000 Louisiana residents are
24 estimated to have participated in RV camping, tent camping, or
25 rustic lodging in 2006. Another 432,700 Louisiana residents (about
26 13 percent of all Louisianans) ran or day-hiked on an unpaved trail,
27 backpacked, or went rock-climbing in 2006 (Outdoor Industry
28 Foundation 2006). The total economic impact of these activities
29 has not been obtained.

30
31 **Economic impact of travel in Atchafalaya Basin parishes.** The
32 total travel expenditures in Assumption, Avoyelles, Iberia, Iberville,
33 Pointe Coupee, St. Landry, St. Martin, and St. Mary parishes in
34 2008 was over \$451 million and over \$435 million in 2009 (LDNR
35 2010, 2011).

36 37 **2.2.5.6 Demographics of Consumptive and Non-Consumptive Recreational Users** 38 **of Wildlife Resources**

39 Some general demographic data is available for resident
40 consumptive and non-consumptive recreational users of wildlife
41 resources in Louisiana (Table 2-9).

42
43 Some basic observations may be made from the data contained in
44 Table 2-9, which may tend to confirm some observational
45 impressions of recreational wildlife users. Consumptive and non-
46 consumptive recreational users of Louisiana wildlife resources tend

Table 2-9. Demographic Data for Consumptive and Non-consumptive Recreational Users of Wildlife Resources in Louisiana, 2006

	Big Game Hunters		Big Game Hunters		Small Game Hunters		Small Game Hunters		Migratory Bird Hunters		Migratory Bird Hunters		Freshwater Anglers		Freshwater Anglers*		Wildlife Watchers (residential activity)	
	Res.	Non-res.	Res.	Non-res.	Res.	Non-res.	Res.	Non-res.	Res.	Non-res.	Res.	Non-res.	Res.	Non-res.	Res.	Non-res.	Res.	All
Race (non-white)	7.9	--	19.8%	--	2.0%	--	22.4%	--	0.0%*	--	22.4%	--	0.0%*	--	16.6	--	16.6	
Average age	43	--	40	--	47	--	45	--	46*	--	45	--	46*	--	51	--	51	
Gender (male)	91.6%	--	92.4%	--	100.0%	--	74.5%	--	86.9%*	--	74.5%	--	86.9%*	--	49.3%	--	49.3%	
Average Household Income	\$54,922	--	\$45,633	--	\$64,267	--	\$50,646	--	\$59,768*	--	\$50,646	--	\$59,768*	--	\$51,738	--	\$51,738	
Education		--		--		--		--		--		--		--		--		
No High School	9.0%	--	9.4%	--	2.0%	--	8.7%	--	3.0%*	--	8.7%	--	3.0%*	--	5.9%	--	5.9%	
Some High School	9.4%	--	8.9%	--	3.8%	--	13.2%	--	3.5%*	--	13.2%	--	3.5%*	--	5.8%	--	5.8%	
High School Diploma	37.7%	--	45.9%	--	40.2%	--	38.7%	--	30.8%*	--	38.7%	--	30.8%*	--	36.7%	--	36.7%	
1-3 years college	19.6%	--	18.5%	--	20.4%	--	21%	--	45.6%*	--	21%	--	45.6%*	--	21.9%	--	21.9%	
College graduate	24.3%	--	17.2%	--	33.5%	--	18.4%	--	17.1%*	--	18.4%	--	17.1%*	--	29.6%	--	29.6%	

*Small sample size; use results with discretion. (Southwick 2008)

1 to be somewhat older than the average Louisianan, whose age was
2 estimated by the Census Bureau in 2005 as 35.68 years (very
3 slightly lower than the national average; the median age of the
4 Louisiana population is slightly lower than the average age in the
5 state). Of all of these groups, wildlife watchers tend to be the
6 oldest, and perhaps surprisingly, small game hunters tend to be the
7 youngest. A smaller proportion of the hunters, fishers, and wildlife
8 watchers are non-white than are non-whites in the Louisiana
9 population as a whole, and non-whites are most under-represented
10 among migratory bird hunters and big game hunters. Also, women
11 make up a minority of participants in all categories except wildlife
12 watching, where they make up about one-half of all participants.
13 Women make up about one-quarter of freshwater anglers.
14 Migratory bird hunters and wildlife watchers tend to have higher
15 education levels than other groups, and migratory bird hunters in
16 particular tend to have higher incomes (Southwick 2008). This
17 data (Southwick 2008) was not included in earlier studies and does
18 not allow a discussion of long-term trends. Data for wildlife
19 watchers seems to generally agree with data for bird watchers in
20 other studies (e.g. Isaacs 2010). Bird watchers in Louisiana
21 (resident and non-resident) tend to be even more often female,
22 older, and more highly educated than are wildlife watchers in
23 general in the data presented above (Isaacs 2010).

24 **2.2.5.7 Trends in Recreation Demand**

26 An evaluation of demand for recreation in the ABFS is presented
27 here in the form of a review of quantitative and qualitative
28 secondary data from sources such as the Statewide
29 Comprehensive Outdoor Recreation Plan (SCORP), demographic
30 and socioeconomic data collected for the ABFS region,
31 communication with ABFS project staff concerning visitor use of
32 project resources, and other data to assist in the identification of
33 resource access and activity demand and evaluation of adequacy
34 of existing facilities.

35 2.2.5.7.1 Statewide Trends in Recreation Demand and Activities

36 The 2009-2013 SCORP projects a number of significant trends in
37 recreation demand in Louisiana over the next two decades. These
38 include:
39

- 40 1. An increasingly urban and less rural population will alter
41 patterns of recreation demand, including increased demand
42 for additional quality facilities within reach of urban areas.
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2. Louisiana residents will seek recreation opportunities that are closer to home and are more affordable.
3. Travel trends show fewer long-stay vacations and trips that are shorter, more frequently on weekends (1-3 nights duration), and less seasonal.
4. The population is aging, and the elderly will have increased leisure time.

Statewide, the SCORP survey data from 2008 found that top outdoor recreation activities by participation rates were:

1. Fishing, crabbing, and crawfishing
2. Campground camping
3. Swimming and water parks
4. Hunting
5. (Tie) Public Access to State waters for watercraft; Spectator Sports; Picnicking
6. (Tie) Walking or hiking; Botanical gardens/arboretums

The SCORP identifies declining trends since 2006 in participation in: visiting natural places; fishing, crabbing, and crawfishing; and hunting. However, as discussed elsewhere in this section, Louisiana permit and license data seems to contradict evidence of a declining trend in hunting and fishing.

The SCORP ranked top outdoor recreational activities in terms of importance to the public and the results were generally aligned with participation rates:

1. Visiting natural places (data not collected for participation)
2. Fishing, crabbing, and crawfishing
3. Walking or hiking
4. Campground camping

1 5. Public Access to State waters for watercraft

2
3 6. Hunting

4
5 2.2.5.7.2 Atchafalaya Basin Trends in Recreation Demand and Activities

6 The 2009-2013 SCORP divides the Atchafalaya Basin (with the
7 exception of its northern extremity in Avoyelles Parish) between
8 two regions: Region 2, which includes the area east of the
9 Atchafalaya River and the Florida parishes north of Lake Maurepas
10 (including the Baton Rouge MSA); and Region 4, encompassing
11 the area west of the Atchafalaya and much of Acadiana (including
12 the Lafayette MSA). Therefore recreation data for the Atchafalaya
13 Basin region is largely divided between the two regions, and they
14 reflect populations with somewhat differing priorities and regional
15 needs:

16
17 *Region 2 (E of Atchafalaya River):* Research forums focused on
18 accessing and utilizing natural resources for recreation, connecting
19 state and parish recreation, identifying realistic community needs,
20 and educating community. Survey data indicates a need for more
21 recreational land and a variety that is accessible and safe (Table 2-
22 10).

23
24 **Table 2-10. Most Important Recreational Activities, Regions 2 and 4**

	Important Activities	Percentage	Highest Participation Rates	Percentage
Region 2	Fishing	67.1	Fishing	64.6
E of Atchafalaya River	Visiting Natural Places	65.1	Driving For Pleasure	55.7
	Walking/Hiking	58.2	Swimming	50.6
Region 4	Visiting Natural Places	63.5	Fishing	67.3
W of Atchafalaya River	Fishing	61.5	Driving for Pleasure	65.4
	Campground Camping	51.9	Camping	57.7

25 Source: SCORP

26
27 *Region 4 (W of Atchafalaya River):* Research forums focused on
28 funding issues for maintenance and operation, creating a culturally
29 appropriate and long-term recreation vision, and providing safe
30 access to recreation. Survey data indicated multiple recreation
31 needs.

32
33 For each region, the SCORP ranks the top three most important
34 recreational activities and the top three activities with the highest
35 participation rates, according to survey data:

1 For a variety of demographic reasons, demand for recreational
2 access to the lands and waters of the ABFS is expected to
3 increase in the mid-term future. Unfortunately, specifics are harder
4 to project. The demand analyses in the 1982 Feasibility Study,
5 approaching 30 years old, are badly out of date. Based on
6 projected population growth within the Atchafalaya Basin region
7 alone, demand for access could be expected to grow in the next
8 two decades, although not as fast as has been the case in recent
9 decades past.

10
11 A review of data from recent decades and the current projections
12 (as discussed elsewhere in this section) does suggest that an
13 evolution may occur toward slower growth in demand, or even less
14 demand, for access or day-use opportunities originating among
15 residents of some areas in closer proximity to ABLP lands and
16 waters. This is because some of these areas seem likely to
17 experience slow or even negative population growth in the next
18 couple of decades. However, other areas seem likely to grow in
19 population, either incrementally as in the case of St. Landry and St.
20 Martin Parishes, or more significantly, as in the Baton Rouge and
21 Lafayette metropolitan areas (particularly their suburban areas).
22 Areas experiencing no population growth or even decline will
23 confront a whole series of socioeconomic impacts, only one of
24 which may be a decline in demands for access or recreation
25 originating from those geographic areas. Evolving population
26 residency patterns may not drive all aspects of access or
27 recreational development, but they could have an impact on a
28 number of construction choices and operational considerations.

29
30 The State *Master Plan for the Atchafalaya Basin Floodway* (ABFS
31 1998) is over a decade old and projected strong growth in regional
32 demand in the period 2000-2020. Consumptive user-days were
33 projected to grow by 22 percent in those two decades while non-
34 consumptive user days (including tourism) were projected to greatly
35 outpace consumptive user-days, and grow by more than 76 percent
36 between 2000 and 2020.

37
38 The total number of user days projected by LDNR in the State
39 Master Plan for all sites in and adjacent to the Atchafalaya Basin
40 are shown in Table 2-11.

1

Table 2-11. Projected Public Use, Atchafalaya Basin

	User Days*		
	2000	2010	2020
Consumptive Use:			
Hunting	200,000	225,000	240,000
Fishing	300,000	327,000	350,000
Trapping, crawfish, etc.	1,400	1,700	2,000
Non-Consumptive Use:			
General Recreation	210,000	438,000	745,000
Tourism: Motorists	200,000	472,000	675,000
Organized Tours	260,000	425,000	700,000
Educational Utilization	5,000	18,000	37,000
Totals	1,176,4000	1,906,700	2,749,000

*User day = one visit to a given site by one person

Source: ABFS 1998:7-16

Visitation data for the Indian Bayou Area collected by the USACE shows wide variations annually, with as much as an 82 percent increase or a 35 percent decrease in visitation from year to year (Table 2-12).

Table 2-12. IBA Visitation Data

Indian Bayou Visitation by Month

	2010	2009 IB	2008 IB	2007 IB	2006 IB	2005 IB	2004 IB	Grand Total	Annual Average
January	6723	6091	9068	5337	6379	7356	6916	47870	6838.571
February	4521	3297	4332	2454	3427	4850	6109	28990	4141.429
March	5020	4631	6687	4217	4287	5521	1444	31807	4543.857
April	4444	3476	2415	3213	3172	9019	1170	26909	3844.143
May	4901	2851	6120	3853	3792	11130	742	33389	4769.857
June	5681	2933	5665	3412	3889	6377	3504	31461	4494.429
July	4474	3206	4388	3901	2195	4782	342	23288	3326.857
August	4853	2634	7204	3894	5064	8419	1069	33137	4733.857
September	5228	3001	943	5001	5437	5617	6178	31405	4486.429
October	5459	3200	3136	5262	5740	4401	4615	31813	4544.714
November	6199	4405	5874	6686	3878	6209	4083	37334	5333.429
December	8284	5678	5405	9572	4656	6295	7761	47651	6807.286
Total	65787	45403	61237	56802	51916	79976	43933		

The above data suggests that the actual trend in visitation is less clear-cut than suggested by the data with which the State Master Plan projections were made. The variation in visitation numbers on an annual basis is likely influenced by environmental factors, such as weather and Basin water levels, that have impacts on wildlife and fish populations as well as on recreation choices made by visitors or potential visitors.

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1 More recent visitation data are available for the IBA, BDOA, and
 2 SBA. These data suggest that the previous lack of traffic counters
 3 at several ABFS parking areas led to a substantial underestimate
 4 of total visitation. Visitation data for the first four months of calendar
 5 year 2012 reflect an increase in total visitation count of more than
 6 36,000 persons (an increase of 44 percent) over the first four
 7 months of calendar year 2011, when numerous traffic counters
 8 were not yet in place. The data also indicate that the IBA receives
 9 the highest level of visitation of any single area, although dispersed
 10 use visitation occurs in even greater numbers (USACE 2012).

11
 12 Another important factor in recreational demand in the ABFS is the
 13 type of use visitors make of the fee lands in the area (Table 2-13).
 14 Data from 2009-2010 in the USACE *Activity Distribution Report*
 15 (2010) indicates that the IBA and BDOA are most favored by
 16 hunters, while the SBA is favored by boaters.

17
 18 **Table 2-13. Type of Visitor Activity on ABFS Fee Lands**

Area	Fishing	Boating	Hunting	Recreational Activities, Other
Indian Bayou	15.9%	22.8%	42.6%	18.7%
Bayou Des Ourses	16.2%	12.0%	54.0%	17.8%
Shatters Bayou	18.0%	54.0%	26.3%	1.6%
All Fee Lands	16%	20.0%	46.1%	18.0%

19 Source: USACE 2010

20
 21 Fishing is relatively evenly distributed among the three areas, but
 22 hunting activity accounts for nearly half of all activity and occurs at
 23 about three times the rate of either fishing or recreational activities
 24 such as nature watching or hiking.

25
 26 A preliminary analysis of the Activity Distribution Report leads to
 27 several general conclusions concerning management actions in the
 28 ABFS (Figure 2-1):

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 37
1. Hunting is the single most important visitor activity in the IBA and BDOA (see Figure 2-1). Management planning should recognize this fact and be appropriately weighted to benefit hunting activities. Examples of management actions to facilitate access to hunting resources could include vegetative management with a focus on maximizing and improving quality of game resources, and additional trails and bridges for ATVs, etc.

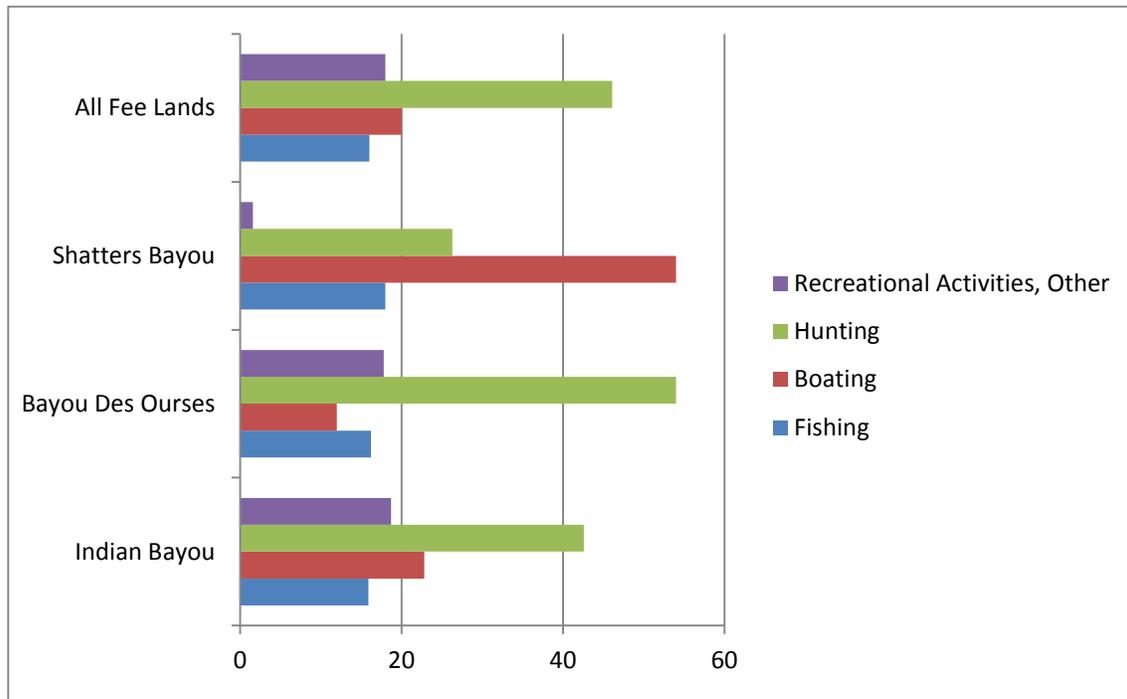


Figure 2-1. Relative Recreational Activity Level Within ABFS Areas (percent of participants by activity).

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2. Given the popularity of fishing statewide and among the regional public, but smaller representation of anglers on ABFS lands, access to resources for anglers should be developed and improved. Examples of management actions to facilitate access to hunting resources could include fishing piers and associated foot trails and parking areas, etc.

3. Non-consumptive recreational activities and educational activities may be currently under-served and are projected to grow in future decades. Access to resources for these activities needs to be developed and improved. Examples of management actions to facilitate access to non-consumptive recreational activities and educational activities could include improvement of hiking, canoe or bicycle trails, development of outdoor education facilities, development of bird-watching platforms or other facilities for nature-watching, etc.

4. The public seeks quality recreational amenities but also shorter and less expensive travel for recreational activities. The quality of information available concerning recreational opportunities and ease of access to that information is

1 increasingly important in the public's decision to visit natural
2 areas.
3

4 **2.2.5.8 Agricultural production**

5 Much of the socioeconomic analysis area is wetland and unsuitable
6 for agriculture, but some of the land which can be used for
7 agricultural purposes has been and remains highly productive.
8 Statistics from 2006 for agricultural production in the seven
9 parishes with ABLP lands are provided in Appendix G. The gross
10 farm value of total agricultural agriculture in the seven-parish sub-
11 region, in 2006 was worth approximately \$575 million. Of course,
12 most land developed for intensive agriculture in these parishes is
13 outside of the ABLP levees, but nevertheless significant agricultural
14 production is ongoing within the Basin.
15

16 Pointe Coupee and St. Landry parishes are the largest agricultural
17 producers of the seven-parish sub-region of parishes with area
18 inside the ABLP levees. This is not surprising given the large
19 extent of arable land and land suitable for livestock production that
20 each parish encompasses, including within the ABLP levees. Total
21 gross value of plant and animal production in Pointe Coupee Parish
22 in 2006 was approximately \$118.32 million, and in St. Landry,
23 \$114.86 million. Avoyelles came in third in agricultural production
24 with \$83.4 of plant and animal production, followed by Iberia Parish
25 with \$82.24 million, Iberville with \$63.78 million, St. Martin with
26 \$56.82 million, and St. Mary with \$56.06 million (LSU Ag Center
27 2009).
28

29 2.2.5.8.1 The Louisiana Horse Industry

30 While horse racing and the horse shows/competitions are not
31 particularly relevant for the Atchafalaya Basin, the extent of
32 recreational horse ownership in the region is worth consideration
33 since trail riding is already a recreational activity on ABFS lands.
34 Louisiana has an important horse industry, with a farm gate value
35 of nearly \$513 million in 2007 and an additional \$56.4 million in
36 value added enterprises, placing the equine industry third behind
37 forestry and poultry in total Louisiana farm gate value. The total
38 economic impact of the Louisiana equine industry was nearly \$2.5
39 billion through direct and indirect expenditures, while the overall
40 economic impact of the Louisiana recreational horse sector is
41 estimated at nearly \$128 million annually. The LSU Ag Center
42 estimates that over 124,000 horses are owned for recreational
43 purposes in the state and 2006 data shows that over 2,300 horses
44 were owned for recreational purposes in the seven parishes with
45 lands within the ABLP levees. In the primary parish zone the total
46 number of recreational horses (excluding foals) was over 7,500.

1 Daily expenditures for participating in recreational activities such as
2 trail rides are estimated at \$250 per participant (LSU Ag Center
3 2009).
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5 **2.2.5.9 Forestry**

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14 ***Hardwood***
15 ***sawtimber is the***
16 ***primary forest***
17 ***product harvested***
18 ***in the Atchafalaya***
19 ***Basin.***
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21 The baldcypress trees in most of the Atchafalaya Basin were
22 harvested during the cypress timber boom (between 1880 and
23 1920), and a second-growth has not been as economically
24 significant as the first-growth timber was. Timber production
25 remains extremely important in Louisiana, and particularly in
26 several of the upland parishes of the socioeconomic analysis area
27 as well. Decisions to harvest timber in particular localities are
28 influenced by a number of market forces, and annual production
29 figures in an individual parish can vary widely. Despite locally
30 significant harvests within the wider socioeconomic analysis area,
31 south-central Louisiana is not the predominant production area for
32 Louisiana forest products. While per-unit values are higher, total
33 production value of hardwood (including cypress) timber in
34 Louisiana is considerably less than that for softwood (pine), the
35 latter being grown in greater quantities in the central and northern
36 portions of the state. The LSU Ag Center data in Appendix G
37 indicates that in 2006 timber with a gross value of approximately
38 \$17.6 million was harvested in the seven parishes with lands in the
39 ABLP, approximately 2 percent of the Louisiana total. About 45
40 percent of the seven-parish basin area forestry value total was
41 accounted for by St. Landry Parish, which has significant non-basin
42 reserves, as do Avoyelles and Pointe Coupee parishes. Iberia
43 Parish, by way of contrast, produced very little timber in regional
44 terms. The vast majority of timber harvested in the Atchafalaya
45 basin is saw timber hardwood (including cypress) and a smaller
46 proportion is hardwood pulpwood (LSU Ag Center 2009).

33 **2.2.6 Petroleum**

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38 ***Onshore crude oil***
39 ***wells have declined***
40 ***since the mid-***
41 ***1980s.***
42

43 The Gulf Coast Salt Dome Basin encompasses the southern
44 portion of Louisiana and includes virtually all of the Atchafalaya
45 Basin. Exploratory petroleum wells were drilled in the Atchafalaya
46 Basin in the mid-1920s, and the IBA has had active oil and gas
extraction since the 1930s; the first producing well was in the
Atchafalaya Field and was drilled in 1934. The World War II and
post-war eras were times of expansion in the Louisiana petroleum
industry, and oil fields and pipelines throughout the Atchafalaya
Basin were extended and enlarged. Following 2.5 decades of
growth in well numbers after 1960, the number of producing
onshore crude oil wells in Louisiana has been in general decline
since the mid-1980s, while the number of onshore natural gas wells
has been relatively more stable. Proportionally, in recent decades

1 the number of oil and gas wells located in the Gulf Coast Salt
 2 Dome Basin has been declining relative to more northerly portions
 3 of the state, and the pace of exploratory petroleum activity in south
 4 Louisiana has fallen dramatically below that of north Louisiana. Yet
 5 surprisingly, the number of new onshore south Louisiana wells
 6 remained at about 500 wells drilled per year from 2000 to 2007. In
 7 terms of actual production, south Louisiana production levels have
 8 been in decline for a longer period than has the decrease in
 9 number of wells. Onshore south Louisiana oil production peaked in
 10 1971 to 1972 and in 2000 was less than one-sixth of peak levels.
 11 Gas production in south Louisiana reached a high point at about
 12 the same time as did oil production, and gas production was about
 13 20 percent of early 1970s levels by 2000. The southern parishes of
 14 the Gulf Coast Salt Dome Basin principally produce oil, although
 15 some natural gas is also produced (BLM 2008; Smith et al. 2003).

16
 17 Table 2-14 shows petroleum well numbers for the primary parishes
 18 in the socioeconomic study area. Of these parishes only
 19 Terrebonne ranks as a high producer of oil, and Iberia, Pointe
 20 Coupee, and St. Mary rank as medium producers; all of the rest
 21 rank as low producers in statewide terms.
 22
 23

Table 2-14. Petroleum Wells in the Primary Parishes

Parish	Oil Rank	2007 Production wells	2007 Horizontal Wells	2007 Dry Holes	2000-2007 Total Production Wells	2000-2007 Average Production Wells
Acadia	Low	5	29	5		
Ascension	Low		8			
Assumption	Low		8			
Avoyelles	Low		2	4		
Catahoula	Low	6	0	4		
Concordia	Low	5	0	7		
East Baton Rouge	Low	5	0	2		
East Feliciana	Low		1			
Evangeline	Low	7	9			
Iberia	Medium	4	27	3	63	7.9
Iberville	Low	3	17	4		
Lafayette	Low					
Lafourche	High	20	82	5	139	17.4
LaSalle	Low	36	1	30		
Livingston	Low	0	3	1		
Pointe Coupee	Medium	5	4	1	34	4.3

Table 2-14, continued

Parish	Oil Rank	2007 Production wells	2007 Horizontal Wells	2007 Dry Holes	2000-2007 Total Production Wells	2000-2007 Average Production Wells
Rapides	Low	3	13	3		
St. Charles	Low	0	11	1		
St. Helena	Low	0	0	1		
St. James	Low	0	9	1		
St. John the Baptist	Low	0	0	1		
St. Landry	Low	2	5	3		
St. Martin	Low	1	52	0		
St. Mary	Medium	21	63	7	144	18
Terrebonne	High	20	98	7	218	27.3
Vermilion	Medium	9	38	13	102	12.8
West Baton Rouge	Low	2	0	0		
West Feliciana	Low					

(BLM 2008)

Active petroleum fields are located on, or adjacent to ABFS fee lands.

There remain dozens of active petroleum fields within the area encompassed by the ABLP levees. Of particular note are the fields that lie within or adjacent to ABFS fee lands. Petroleum fields developed within or in near proximity to the ABFS over the decades include the Atchafalaya, Plumb Bob, Happytown, Happytown South, Krotz Springs, Pecaniere, Cecilia North, and Lake Valerie fields. In the ABFS area, Plumb Bob Field, centered in Henderson Lake north of I-10, was far and away the most active of these petroleum fields during the expansion period, with approximately 80 wells drilled between World War II and 1970. Drilling in Plumb Bob Field slowed in the 1970s; about 20 wells were drilled in that decade. Both oil and gas production peaked in Plumb Bob Field in 1980. Only about two dozen new wells were drilled in all of Plumb Bob Field, Happytown, Krotz Springs, Pecaniere, Cecilia North, and Lake Valerie fields in the 1980s, and only about six were drilled in the 1990s. Oil and gas production in Plumb Bob Field has been erratic since the mid-1990s; after a modest increase in the years 2004-2007, production has dwindled to nearly nothing. Seven inactive wells and one active well were removed from Henderson Lake between 2010 and 2012 by Goodrich Petroleum. Happy Town (or Happytown) Field and Lake Valerie Field are within the BDOA/Sherburne area. Happy Town Field was first drilled in 1939 and remains a small but diminishing production field of oil and natural gas. No data are available concerning production at Lake Valerie Field. Happy Town (or Happytown) South Field is in the IBA. It was first drilled in 1960 and LDNR data shows Happy Town

1 South Field last produced oil or gas in 1989. Myette Point Field
2 encompasses the SBA and was first drilled in 1972. Production of
3 oil and natural gas in this field declined from the 1970s to the
4 1990s and ceased in 1996, only to be revived in 2006. Myette
5 Point Field continues to produce small quantities of oil and gas
6 (LDNR 2011; Smith et al. 2003).

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SECTION 3.0
DESCRIPTION AND MANAGEMENT OF THE ABFS



3.0 DESCRIPTION AND MANAGEMENT OF THE ABFS

3.1 AUTHORIZATION

3.1.1 Project Authorization

The ABFS was authorized by the U.S. Congress in the Supplemental Appropriations Act for Fiscal Year 1985 (PL 99-98).

The ABLP project feature of the MR&T project, was authorized by the Flood Control Act, approved May 15, 1928 (PL 391, 70th Congress), as amended. This act authorized the project for the flood control of the Mississippi River in its alluvial valley and for its improvement from the Head of Passes, Louisiana, to Cape Girardeau, Missouri. In accordance with the recommendations of Paragraph 3 of the Chief of Engineers Report, dated February 28, 1983, the project known as the ABFS, which included features to provide public access, environmental protection, flood control through flowage and developmental control easements, water management, canal closures and water circulation improvements, and recreational development in the Lower Atchafalaya Basin Floodway, was authorized by the Congress in the Supplemental Appropriations Act for Fiscal Year 1985, PL 99-88, August 15, 1985 (H.R. 2577, July 2, 1985), as amended by WRDA of 1986, PL 99-662, November 17, 1986, by the Energy and Water Development Appropriations Act of 1991, PL 101-514, by the Energy and Water Development Appropriations Act of 1997, PL 104-206, and WRDA of 2007, PL 110-114, November 8, 2007 (121 Statue 1041).

3.1.1.1 WRDA 2007

Section 3075 of WRDA of 2007 authorizes the acquisition of fee interest (exclusive of oil, gas, and minerals) of an additional 20,000 acres of land in the Lower Atchafalaya Basin Floodway from willing sellers. As originally authorized, the first cost of the public access feature of the project was subject to a limitation on Federal expenditures of \$32,000,000. Section 3075 removes that cost limitation retroactive to November 17, 1986. However, the removal of this cost limitation does not increase the total authorized cost of the ABFS project. In addition, Section 315 of WRDA of 2007 states that the Secretary shall initiate, in collaboration with the State of Louisiana, construction of the visitor center authorized as part of the project at or near Lake End Park in Morgan City, Louisiana. The action also amends the authorization to consider Eagle Point Park near Jeannerette, Louisiana, and the town of Melville, Louisiana, as alternative sites for recreation features.

1 **3.1.2 Other Applicable Laws and Regulations**

2 Several Federal and state legislative acts, executive orders, and
3 governmental policies have a significant bearing on the planning
4 process and the resulting Master Plan. These laws and regulations
5 govern the manner in which the USACE administers and manages
6 this project. A partial list and description of the more significant
7 laws and regulations that have a direct impact on this project are
8 presented as follows:
9

- 10 • National Environmental Policy Act of 1969

11
12 The National Environmental Policy Act (NEPA) of 1969, PL 91-190,
13 and its subsequent amendments provide a national policy
14 encouraging the maintenance and protection of environmental
15 quality for the welfare and development of humanity. This act
16 requires that proposals for major Federal actions address: (1) the
17 environmental impact of the proposed action, (2) any adverse
18 environmental impact that cannot be avoided should the proposal
19 be implemented, (3) alternatives to the proposed action, (4) the
20 relationship between local short-term uses of the environment and
21 the maintenance of long-term productivity, and (5) any irretrievable
22 commitments of resources that would be involved in the proposed
23 action.
24

- 25 • PL 85-624

26
27 The Fish and Wildlife Coordination Act of 1958, as amended,
28 directs that fish and wildlife conservation receive equal
29 consideration with other water project purposes and that Federal
30 agencies coordinate among themselves, as well as with
31 appropriate state agencies, to accomplish the purposes of this act.
32

- 33 • PL 86-717

34
35 The Forest Conservation Act of 1960, as amended, provides for the
36 protection of forest cover for reservoir areas under the jurisdiction
37 of the Secretary of the Army and the Chief of Engineers.
38

- 39 • PL 89-72

40
41 The Federal Water Project Recreation Act of 1965, as amended,
42 requires consideration of opportunities for outdoor recreation and
43 fish and wildlife enhancement in water resource projects. Non-
44 Federal agencies are encouraged to participate and cost-share
45 recreational and fish and wildlife enhancement facilities at
46 50 percent first cost, unless otherwise authorized. Operation and

1 maintenance of these facilities are normally at 100 percent non-
2 Federal cost.

- 3
- 4 • PL 89-665
- 5

6 The National Historic Preservation Act of 1966, as amended, sets
7 forth the basic policy for preservation of the national heritage. It
8 provides for an expanded National Register of districts, sites,
9 buildings, structures, and objects significant to the American
10 heritage, and establishes procedures for their identification,
11 acquisition, and preservation.

- 12
- 13 • PL 93-205
- 14

15 The Endangered Species Act of 1973, as amended, requires
16 Federal agencies, in consultation with the Secretaries of Interior
17 and Commerce, to utilize their authorities to carry out programs for
18 conservation of endangered and threatened species protected by
19 the act.

- 20
- 21 • Executive Order 11593
- 22

23 This order, "Protection and Enhancement of the Cultural
24 Environment," issued May 13, 1977, sets policy for federal
25 leadership in the inventorying, protection, planning, and impact
26 mitigation process for archaeological resources affected by Federal
27 programs.

- 28
- 29 • Executive Order 11988
- 30

31 This order, "Flood Plain Management," issued May 24, 1977,
32 outlines the responsibilities of Federal agencies in the role of flood
33 plain management. Each agency evaluates the potential effects of
34 actions on flood plains, and should not undertake actions that
35 directly or indirectly induce development in the floodplain, unless
36 there is no practical alternative.

- 37
- 38 • Executive Order 11989
- 39

40 This order, "Off Road Vehicles on Public Lands," issued May 24,
41 1977, complements NEPA, in order to clarify the authority of
42 government agencies to define zones of use by off-road vehicles
43 on public lands. It allows Federal agencies to close trails or areas
44 of public land to off-road vehicles if it is determined that such
45 vehicles are adversely affecting soils, vegetation, wildlife, wildlife
46 habitat, or cultural and historic resources until the effects have

1 been eliminated and measures implemented to prevent further
2 recurrence.

- 3
- 4 • Executive Order 11990

5

6 This order, "Protection of Wetlands," issued May 24, 1977, sets the
7 Federal policy of taking action to minimize the destruction, loss, or
8 degradation of wetlands, as well as to preserve and enhance the
9 natural and beneficial values of wetlands. Federal agencies will
10 avoid support of new construction in wetlands whenever there is a
11 practicable alternative.

- 12
- 13 • Executive Order 12088

14

15 This order, "Federal Compliance with Pollution Control Standards,"
16 issued October 13, 1978, ensures that actions of Federal agencies
17 comply with applicable pollution control standards. Each executive
18 agency is responsible for such compliance, as well as the
19 coordination with EPA, state, interstate, and local agencies in the
20 preservation, control, and abatement of environmental pollution.

- 21
- 22 • ER 405-1-12

23

24 This engineer regulation, "Real Estate Handbook," Chapter 8,
25 dated September 30, 1994, prescribes the general procedures for
26 management of Army (Civil) controlled real property and for
27 issuing, managing, and administering outgrants authorizing the use
28 of real property.

- 29
- 30 • ER 1130-2-406

31

32 This regulation, entitled, "Project Operation - Shoreline Mangement
33 at Civil Works Projects," dated May 28, 1999, provides policy and
34 guidance on management of shorelines of Civil Works projects
35 where 36 Code of Federal Regulation (CFR) Part 327 is applicable.

- 36
- 37 • Engineering Pamphlet (EP) 1130-2-434

38

39 This engineer pamphlet (EP), entitled, "Interpretive Services and
40 Outreach Program (ISOP)" (5 vols. and 4 supplements), dated
41 September 30, 1993, describes strategy and goals, introductory
42 training, evaluation procedures, environmental education, and
43 sources of exhibits for an ISOP.

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- ER 1130-2-500

This ER, entitled, "Project Operations - Partners and Support (Work Management Guidance and Procedures)," dated June 1, 2006, establishes guidance and procedures for the management of activities by volunteers at USACE water resource development projects (supplemented by ER 1130-2-500).

- ER 1130-2-530

This regulation, "Project Operations - Flood Control Operations and Maintenance Policies," dated October 30, 1996, establishes policy for the operation and maintenance (O&M) of USACE flood control and related structures at civil works water resource projects and of USACE-built flood protection projects operated and maintained by non-Federal sponsors.

- ER 1130-2-540

This regulation, "Environmental Stewardship and Maintenance Policies," dated 11 August 2008, establishes land management policy for USACE-administered project lands and water, based on various authorizing legislation and the principles of good environmental stewardship.

- ER 1130-2-550

This regulation, "Recreation Operation and Maintenance Policies," dated August 15, 2002, establishes the policy for the management of recreation programs and activities and for the operation and maintenance of USACE recreation facilities and related structures at civil works water resource projects.

- ER 1165-2-400

This regulation, "Recreation Planning, Development, and Management Policies," dated August 9, 1985, defines the objectives, philosophies, and basic policies for the planning, development, and management of outdoor recreation and enhancement of fish and wildlife resources at USACE's water resource development projects.

- PL 91-611

The Flood Control Act of 1970 provides Federal citation authority to USACE for administration and management of public activities on

1 USACE-controlled lands and waters. Section 234 provides that
2 persons designated by the Chief of Engineers shall have authority
3 to issue a citation for violations of regulations and rules of the
4 Secretary of the Army published in the CFRs.
5

- 6 • OMP, The Atchafalaya Basin Floodway System, Louisiana,
7 Project
8

9 This USACE document, dated May 29, 1998, outlines in detail the
10 specific operation and administration requirements for natural
11 resources and park management of project resources. The OMP is
12 used as a working tool and includes funding plans, staffing, and
13 time frames required to implement management strategies
14 consistent with authorized project purposes and the approved
15 project master plan.
16

- 17 • EP 1165-2-1
18

19 The Digest of Water Resources Policies and Authorities, dated
20 July 30, 1999, provides a brief summary, in digest form of the
21 existing administrative and legislative water resources policies and
22 authorities pertinent to the Civil Works activities of USACE.
23

24 **3.1.3 Project Partnership Agreements (PPAs)**

25 In addition to the number of laws and regulations, there are
26 agreements and documents that are specific to this project and
27 ultimately govern its execution. The initial and most controlling
28 document is, of course, the project authorization, which was
29 described above (Section 3.1.1). Subsequent agreements that
30 execute the authorized mandate are described in descending
31 hierarchical order below. All are important, and all have a legal
32 basis and result in a contractual agreement.
33

34 The execution of a PPA (formerly titled Project Cooperation
35 Agreements or PCA) by the non-Federal sponsor is required by
36 Section 221 of the Flood Control Act of 1970, PL 91-611, as
37 amended (codified as amended at 42 [U.S.C.] 1962d-5b), and
38 Section 103(j) and 108 of WRDA of 1986, PL 99-662, as amended.
39 Section 221 provides, *inter alia*, that the Secretary of the Army shall
40 not commence construction of any water resources project, or
41 separable element thereof, until each non-Federal sponsor has
42 entered into a written agreement to furnish its required cooperation
43 for the project or separable element.
44

45 The PPA is a legally binding agreement that sets forth the terms of
46 the relationship between the Federal Government and a non-

1 Federal sponsor (a legally constituted public body with full authority
2 and capability to perform the terms of its agreement and to pay
3 damages, if necessary, in the event of a failure to perform)
4 regarding the construction (or implementation), operation, and
5 maintenance of a water resources project. The PPA describes the
6 scope of the project to be implemented, together with the specific
7 work to be covered by the PPA, and sets forth the responsibilities
8 and obligations of the parties, in accordance with the requirements
9 of the project authority and Federal law, regulation, and policy.
10 PPAs will be executed for each of the features of the ABFS. In
11 accordance with Act 3 of the 1998 First Extraordinary Session of
12 the Louisiana Legislature, the non-Federal sponsor for the majority
13 of the features of the ABFS is the State of Louisiana, represented
14 by the Atchafalaya Basin Program, an agency within the office of
15 the Secretary of LDNR.
16

17 Several PPA/PCAs have been concluded for features of the ABFS.
18 The Avoyelles Parish Police Jury is the non-Federal sponsor for the
19 Atchafalaya River Landing, Simmesport, Louisiana, project an
20 element of the recreational development feature of the ABFS.
21 Following a PCA between USACE, LDNR, and Avoyelles Parish,
22 construction of the Simmesport boat launch began in 2004. It is
23 now operational. The Myette Point Boat Launch project was the
24 subject of a PCA between USACE and the St. Mary Parish
25 Government. The project area is in the vicinity of the town of
26 Charenton, Louisiana, in St. Mary Parish, and near the SBA of the
27 ABFS. Construction of the Myette Point Boat Launch began in
28 2007, and the launch was opened to the public in 2010. The
29 Bayou Sorrel boat launch has been an ongoing project of USACE,
30 the State of Louisiana, and Iberville Parish Government. Project
31 design is nearing completion. The project was funded through
32 capital outlay in the state's FY2011 Annual Basin Plan. Iberville
33 Parish has elected to move forward with this funding immediately
34 and intends to construct the facility as soon as possible. The
35 Bayou Sorrel Boat Launch project in Iberville Parish is the subject
36 of a PPA between USACE, State of Louisiana, and Iberville Parish
37 Government. Matching funds have been provided to USACE for
38 project design by the state's Atchafalaya Basin Program, and
39 USACE is expected to provide the Federal match for construction.
40

41 The ABLP includes five WMUs that will improve water quality,
42 enhance fish and wildlife, and control sediment flow. These have
43 proven to be more complicated subjects of PPAs than have access
44 or recreational features such as boat launches (Appendix C,
45 Figure 6). Congress has authorized construction of two WMUs to
46 serve as pilot projects. Construction of the Buffalo Cove WMU (in

1 the southwest portion of the Basin) has begun without the
2 conclusion of the PPA, which is currently under review by
3 Headquarters USACE and will be executed once approved. An EA
4 of Buffalo Cove was released for public review on July 25, 2003.
5 The document evaluated the potential impacts associated with the
6 construction and maintenance of the proposed water circulation
7 and sediment management improvements. The Finding of No
8 Significant Impact was signed on March 15, 2004. USACE began
9 construction on Buffalo Cove in 2004, and constructed elements
10 include 1, 8, 9-1 and 7. USACE received funding through the
11 American Recovery and Reinvestment Act of 2009 to complete
12 construction of additional elements of the project. Construction
13 Element 9-2 in the Buffalo Cove Water Management Unit was
14 completed in 2010. USACE is in the process of easement
15 acquisition for the remaining elements prior to construction. Once
16 the last element is constructed, USACE is required to monitor the
17 project's effectiveness for a 5-year period.
18

19 The Henderson Lake WMU is located just below Krotz Springs
20 extending south from U.S. 190 to below Interstate 10. This project
21 is in the planning stage and a PPA has not been concluded
22 between USACE, LDNR, and St. Martin and St. Landry parishes.
23 In an October 2006 scoping report, USACE identified three major
24 challenges within the Henderson WMU in St. Martin and St. Landry
25 parishes: hydrology, environment/habitat, and environmental
26 quality. Proposed actions, benefits, and alternatives are being
27 identified, as well as additional details such as dredging
28 dimensions and the size of gaps to be cut to restore water flow
29 patterns. USACE planning group, consisting of state and Federal
30 agencies, is holding regular meetings to complete the planning
31 documents. An EIS is also being prepared.
32

33 The remaining three WMUs, namely Flat Lake, Beau Bayou, and
34 Cocodrie Swamp WMUs, have passed the preliminary planning
35 and assessment phase but have not yet entered the construction
36 phase. PPAs have not been concluded for any of these three
37 WMUs.
38

39 The Sherburne Freshwater Diversion Structure at Big Alabama
40 Bayou was authorized by WRDA of 1986 in accordance with the
41 plan recommended in the February 1983 Chief's Report. This
42 project is in the planning stage. The plan includes construction of
43 freshwater distribution structures from the Atchafalaya River to
44 provide water inflow into the Alabama Bayou area. To date, no
45 funds have been budgeted for or allocated to this effort by the
46 USACE, and no PPA has been concluded.

1 **3.2 ABFS PROJECT LANDS**

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9 ***The State of***
10 ***Louisiana dedicated***
11 ***150,000 acres for***
12 ***the construction,***
13 ***operation, and***
14 ***maintenance of the***
15 ***ABFS.***

As currently authorized, the ABFS consists of the public access feature (acquisition of a fee interest, excluding minerals) over approximately 70,000 acres (50,000 acres in the original ABFS authorization and 20,000 additional acres in WRDA of 2007) of privately owned lands from willing sellers; the flood control feature (the acquisition of flowage easements, over 59,000 acres of privately owned lands, and of developmental control easements over 338,000 acres, which include the 59,000 acres of flowage easements); and the environmental protection feature (acquisition of environmental protection easements over the above-referenced 338,000 acres of privately owned land). The ABFS also consists of a water management feature, a canal closure and water circulation feature, and a recreational development feature. Additional state-owned and/or claimed land comprises the remaining land area in the ABFS that is to be provided to the ABFS by the non-Federal sponsor as a portion of its share of total project costs. The State of Louisiana will dedicate, as deemed necessary by USACE, state-owned lands within the boundaries of the ABFS for the construction/implementation, operation and maintenance of the ABFS, in accordance with the purposes of the specific project feature or element described in the PPA.

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25 A breakdown of the total acreage within the ABFS boundary is
26 outlined below:
27

28 **State-Owned Lands, part of the authorized ABFS project:**

29
30 Existing Lands and Water-bottoms 150,000 acres
31 Dow Chemical Co. donation 30,000 acres
32

33 **State-Owned Lands, not part of the authorized ABFS project:**

34
35 SWMA 12,000 acres
36

37 **Department of the Interior, U. S. Fish and Wildlife Service, not**
38 **part of the authorized ABFS project:**

39
40 Atchafalaya National Wildlife Refuge 15,000 acres
41

42 **USACE Acquisition for the ABFS Project:**

43
44 Public Access (Fee, excluding minerals) 70,000 acres

1	Flood Control and Environmental Protection ¹	
2	(Flowage; Developmental Control &	
3	Environmental Protection Easements; or	
4	Developmental Control & Environmental	
5	Protection Easements)	338,000 acres
6		
7	Total Project Area	<u>595,000 acres</u>

8
9 **Additional ABFS features that will be contained within above**
10 **listed acreages:**

- 11 Recreation
- 12
- 13
- 14 Non-Federal Sponsor acquisition in Fee: 1,500 Acres
- 15
- 16 Water Management²
- 17
- 18 Canal Closures and Water Circulation²

19
20 The authorized plan calls for recreation on 1,500 acres of fee land
21 that is to be provided by the non-Federal sponsor. Fifty percent of
22 the cost of construction will be borne by the non-Federal sponsor,
23 as well as 100 percent of the cost of operation, maintenance,
24 repair, replacement, and rehabilitation of the recreation feature.
25 With the exception of 24 acres, which were acquired for the
26 Atchafalaya River Landing, Simmesport, Louisiana, project, this
27 land has not been formally identified and located. The recreational
28 development feature or its discrete elements will be implemented
29 when scheduling authority is provided, the FDM(s) and REDMs are
30 developed, environmental compliance has been obtained, and a
31 PPA has been executed between the USACE and non-Federal
32 sponsor.

33
34 USACE is proceeding with the purchase, from willing sellers, of
35 70,000 acres of privately owned lands for the public access feature
36 that will be managed to maximize the public's opportunity to utilize
37 the abundant fish and wildlife resources. In addition, USACE is
38 also proceeding with the acquisition of easements for the flood
39 control and environmental protection features of the ABFS. Real
40 property interests acquired to date are shown in Appendix C,
41 Figure 2.

¹ Flowage easements will only be acquired over 59,000 acres of the 338,000 acres subject to the ABFS project's flood control feature.
² Land acquisition requirements for these features will be determined.

1 **3.3 PROJECT OPERATIONS**

2
3 O&M of USACE projects is coordinated by the Operations
4 Managers (OMs) in MVN. The ABFS OM is responsible for the
5 overall management of the natural resource features of the project,
6 including the public access feature, environmental easements,
7 developmental control easements, and, when implemented, the
8 recreation and visitor center features. The OM's management
9 objectives and strategies are conducted by field personnel based in
10 the ABFS Project Office (PO), currently located in Port Barre,
11 Louisiana.

12
13 **3.3.1 Project Operations for Flood Control and Navigation Features**

14 Operations of the flood control structures and navigation features
15 of the Atchafalaya Basin, Morganza Floodway, and the Old River
16 Complex are set forth in their respective O&M Manuals.

17
18 These structures and their operation determine to a great degree
19 what types of uses can be accommodated in the ABFS and the
20 degree of physical constraints governing its development. At Old
21 River Control, the public is allowed access to 3,000 acres of fee-
22 owned land only provided their activities do not interfere with the
23 O&M of the project. These lands and waters provide opportunities
24 for fishing, crawfishing, hunting, dog training, camping, and wildlife
25 watching. The Old River Lock area contains two boat launching
26 sites and a primitive campground, and another boat launch is on
27 the Mississippi River. Public access at Old River is managed
28 entirely by USACE. A future Master Plan will be developed to
29 address the area above U.S. Highway 190 to the Old River
30 Complex. Some navigation locks possess a potential for public use
31 beyond current levels. Preparation of Master Plans and
32 supplements that more fully realize these potentials are scheduled
33 for future development. These structures are not new, and likewise
34 their O&M systems are well developed, both in normal situations
35 and during emergencies. Therefore, a full discussion of their
36 operating conditions is not a part of this plan. This plan fully
37 recognizes their importance and the overriding control and effect
38 they have on the entire Atchafalaya Basin.

39
40 **3.3.2 Project Operations of the ABFS Project**

41 The ABFS is operated and maintained by the USACE ABFS PO.
42 This office is in turn managed directly by the MVN's OM for the
43 ABFS. Real Estate Division of MVN assists in this management
44 effort, including the issuance, management, and administration of
45 outgrants authorizing the use of the project lands, performance of
46 routine compliance and utilization inspections, and encroachment

1 resolution. On-site management follows the guidelines set forth in
2 this Master Plan and the approved OMP.
3

4 Operations Division (OD) will engage in and conduct those natural
5 resource and park management activities necessary to fulfill its
6 authorized project responsibilities and to ensure that all authorized
7 features are managed in a prudent, responsible, professional
8 manner. Management activities will be closely coordinated with the
9 non-Federal sponsor.
10

11 When PPA(s) are executed for each of the features of the ABFS
12 and/or the elements thereof, the responsibilities and obligations of
13 the Federal Government and the non-Federal sponsor of that
14 project feature or element will be clearly defined.
15

16 **3.3.2.1 Operation, Maintenance, Repair, Replacement, and Rehabilitation**
17 **(OMRR&R) Planning and Execution of the Atchafalaya Basin Floodway**
18 **System, Louisiana, Project**

19 The statutory authority for the ABFS, Federal laws and regulations,
20 the PPA and the internal regulations and policies of USACE define
21 OMRR&R responsibilities of ABFS. These documents and
22 authorities determine USACE's and the non-Federal sponsor's
23 responsibilities within the context of project authorization and cost-
24 sharing provisions. This Master Plan and the OMP will aid in the
25 definition of the scope of project feature or element described in a
26 given PPA.
27

28 The ABFS PO staff organizational structure, approved by the
29 District Engineer, acknowledges USACE's responsibility for
30 stewardship of the ABFS. Staff structure and the associated
31 project management costs are identified in the OMP. Positions
32 include a Supervisory Park Manager, an Office Assistant, a Natural
33 Resource Specialist, a Senior Park Ranger, and seven Park
34 Rangers. As additional acreage is acquired for project purposes,
35 additional personnel may be needed within the Real Estate Division
36 to perform those functions as required by laws and regulations in
37 assisting OD personnel at MVN and the ABFS PO. The OMP
38 addresses budget requirements for these future Real Estate
39 Division personnel needs.
40

41 The Natural Resource Specialist is responsible for O&M programs
42 in support of the public access feature and provide expertise for the
43 management of the WMU feature of the ABFS to the extent of the
44 real estate interests acquired. Regarding the public access
45 feature, the flood control feature and the environmental protection
46 feature of the ABFS, the responsibilities of the Natural Resource

1 Specialist include activities for ecosystem management in support
2 of the applicable ABFS feature in order to assure sustained
3 populations of plants and animals for future generations, and to
4 assure that natural resources on all project features are managed
5 wisely in accordance with project authorities. This effort will consist
6 primarily of forest management and working with the non-Federal
7 sponsor in providing guidance for, and approving all fish and
8 wildlife management on, USACE public access lands. The Natural
9 Resources Specialist assists the non-Federal sponsor with the
10 development and review of its Annual Management Plans (AMPs)
11 for natural resources management of the ABFS features. The
12 Natural Resources Specialist forwards these plans for approval to
13 the Park Manager and the OM.
14

15 The Senior Park Ranger is responsible for O&M programs and
16 activities on lands acquired in support of the public access feature,
17 and USACE Master Plan for the ABFS, to the extent of the real
18 estate interests acquired. Management responsibilities for the
19 public access feature include the responsibility to (1) plan, develop,
20 implement, and maintain public access features, such as roads,
21 trails, project signs, etc., and coordinate hunting and fishing access
22 with the state; and (2) assist the non-Federal sponsor with the
23 development and review of its Annual Management Plans for visitor
24 use of the public access feature. The Senior Park Ranger forwards
25 these plans for approval to the Park Manager and the OM.
26 Management responsibilities for the flood control feature (flowage,
27 developmental control easements) and the environmental
28 protection feature include (1) assisting USACE Real Estate Division
29 personnel with inspections and encroachment resolution; (2) being
30 the landowners' point of contact for the landowners' applications to
31 receive consents, including field inspections of proposed consent
32 areas, assisting applicants with paperwork, reviewing and writing
33 Operations Division positions; and (3) inspections of timber
34 harvests and assessing compliance with easement guidelines. The
35 Senior Park Ranger and staff work closely with the non-Federal
36 sponsor to determine areas being harvested and identify
37 construction activity. They will also assist the non-Federal sponsor
38 with the development and review of its Annual Management Plans
39 for management of the USACE Master Plan for the ABFS project.
40 The Senior Park Ranger forwards these plans for approval to the
41 Park Manager and the OM.
42

43 **3.3.2.2 AMP Submittal, Review, and Approval Process for the ABFS Project**

44 A public access feature O&M AMP submittal, review, and approval
45 process has been in effect since Fiscal Year 1997, between the
46 Operations Division of the New Orleans District (MVN-OD),

1 Throughout the Federal fiscal year, quarterly reports will be
2 submitted no later than 30 days following the end of each Federal
3 fiscal quarter. These reports will be an account of actual revenues
4 and expenditures with a description of work accomplished (same
5 format as the AMP) during the preceding quarter.
6

7 At the end of the Federal fiscal year, the non-Federal sponsor will
8 be required to give a final yearly report that reflects total
9 accomplishments, revenues, and expenditures. This report will be
10 due no later than 60 days following the Federal fiscal year.
11

12 This submittal process and reporting system will allow USACE and
13 non-Federal sponsor to coordinate management activities within
14 the ABFS. This procedure will precisely describe management
15 objectives for a given project feature and will enable the USACE
16 and the non-Federal sponsor to utilize their respective resources to
17 accomplish these tasks.
18

19 **3.3.3 Operations of Public Access Feature of the ABFS Project**

20 The public access feature and the incumbent public use of this
21 feature demand a wide variety of management strategies and
22 techniques in order to assure adequate access and quality outdoor
23 experiences. These lands are to be managed jointly with the non-
24 Federal sponsor in a cooperative manner to provide outdoor
25 recreation, consumptive and non-consumptive outdoor recreation
26 activities, and to protect and enhance the natural resources. This
27 will be accomplished through the assignment of USACE personnel
28 to manage the Federal aspect of the project and to provide a
29 Federal basis for the monitoring and assurance that it is managed
30 and utilized consistent with the Federal project authorization and
31 Federal laws, regulations (including, but not limited to, Title 36 CFR
32 Chapter 327), and policies. As Title 36 regulations cannot be
33 delegated to the non-Federal sponsor, there remains a compelling
34 Federal interest in project oversight and management. It is
35 necessary that USACE use in-house staff, supplemented with
36 contracts and other agreements, as needed, to fulfill its mission,
37 responsibility, and role in the management and enhancement of
38 the ABFS. Management will be performed in conjunction with
39 personnel of the non-Federal sponsor whose responsibility will be
40 described in PPA(s) for the public access feature. Presently, the
41 lands acquired by USACE in support of the public access feature
42 are comprised of three geographical units: a) BDOA, lands
43 acquired by USACE in Pointe Coupee, Iberville, and St. Martin
44 parishes, Louisiana, in the vicinity of SWMA and ANWR; b) IBA,
45 lands acquired by USACE in St. Landry and St. Martin parishes,
46 Louisiana; and c) SBA, lands acquired by the USACE in St. Mary

1 Parish, Louisiana, in the vicinity of LDWF Attakapas Wildlife
2 Management Area (see Appendix C, Figure 2).
3

4 In the absence of a binding PPA for the public access feature of
5 the ABFS, OD, and LDWF currently share O&M efforts on the
6 lands acquired by USACE in support of the public access feature.
7 MVN-Real Estate Division has granted two licenses to LDWF,
8 DACW29-3-91-5 and DACW29-3-94-10. These licenses will be
9 terminated concurrently with the execution of a PPA for the public
10 access feature. Thereafter, the OMRR&R plan will govern these
11 efforts and the respective responsibilities of USACE and the non-
12 Federal sponsor with regard to these lands.
13

14 By Department of the Army License Number DACW29-3-91-5
15 dated October 5, 1990, USACE granted a 1-year license to LDWF
16 for the management (for purposes of fish and wildlife
17 enhancement) of the BDOA in the vicinity of LDWF SWMA. This
18 license has been renewed annually, subject to those amendments
19 necessitated by USACE's implementation of the public access
20 feature, in the BDOA.
21

22 By Department of the Army License Number DACW29-3-94-10,
23 signed by LDWF on March 21, 1994, and the District Engineer,
24 MVN on March 22, 1994, to commence April 1, 1994, USACE
25 granted a 25-year license to LDWF for the management (for
26 purposes of wetland and migratory bird management) of certain
27 portions of the BDOA in the vicinity of the LDWF SWMA,
28 comprising approximately 2,400 acres.
29

30 ER 1130-2-540, section 2-2,c,6,c clearly defines LDWF's role in
31 managing fish and wildlife for the enhancement of those
32 populations pursuant to and during the term of the above described
33 licenses. As stewards of USACE land, an ecosystem management
34 approach must be taken to ensure that a sustainable population of
35 animals and plants remains available for future generations. At this
36 time, there are no licenses with LDWF or any other agency of the
37 State of Louisiana for the IBA or SBAs. The majority of LDWF's
38 management activities in support of the ABFS public access
39 feature are conducted on the BDOA. The majority of the public
40 access feature management activities of USACE are conducted on
41 the IBA. Little management activity has taken place on the SBA to
42 date.
43

44 When the PPA for the public access feature of the ABFS project is
45 executed by the Government and the non-Federal sponsor, the
46 non-Federal sponsor will bear 25 percent of the cost of OMRR&R

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4
5 ***The non-Federal***
6 ***sponsor is***
7 ***responsible for 25***
8 ***percent of the***
9 ***OMRR&R costs for***
10 ***USACE fee lands***
11 ***acquired for the***
12 ***public access***
13 ***feature.***
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of USACE fee lands acquired in support of the public access feature. The non-Federal sponsor would be entitled to receive a credit against, but not exceeding, its 25 percent cost share for the performance of USACE-approved work-in-kind, which USACE has examined and audited (pursuant to the terms of the project cooperation agreement) and found to be reasonable, allowable, and allocable to the public access feature of the ABFS. In the event that the value of the contributions provided by non-Federal sponsor are less than 25 percent of the cost of OMRR&R of the public access feature (or the element of the public access feature that is described in the PPA), the non-federal sponsor will be required to provide additional cash contributions in an amount necessary to make the non-Federal sponsor's total contribution equal to 25 percent of the total cost of OMRR&R of the Public Access feature of the ABFS (or the element thereof that is described in the PPA). It is anticipated that the majority of the in-kind services performed by the non-Federal sponsor on lands acquired by USACE for the public access feature will take place on the BDOA. MVN-OD management responsibilities within the BDOA will mainly consist of public access, forest management, and real estate functions. In addition, USACE will provide guidance and assistance on all aspects of O&M listed below.

24 It is currently anticipated that the non-Federal sponsor will provide minimal services on the IBA and the SBA. On these areas, it is anticipated that the non-Federal sponsor will assist with the setting of hunting seasons and the enforcement of state laws governing fish and wildlife.

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29
30 The USACE Master Plan; OMP; and OMRR&R Plan will outline the following management activities regarding the ABFS public access feature and identify the following O&M responsibilities:

31
32
33
34 USACE Responsibilities:

- 35
36 a. Coordination, review, and approval of all management
37 activities.
38
39 b. Enforcement of CFR, Title 36, Part 327.
40
41 c. Stewardship such as research and ecosystem management.
42
43 d. Forest habitat management.
44
45 e. Development and maintenance of roads and trails on the
46 public access lands acquired by USACE, as well as road

1 and channel easements acquired in support of the public
2 access feature.

- 3
- 4 f. Special use permits, such as rights-of-way for private in-
5 holdings.
- 6
- 7 g. Special Event Permits, such as dog field trials.
- 8
- 9 h. Reforestation.
- 10
- 11 i. Sign Management Program.
- 12
- 13 j. Boundary maintenance.
- 14
- 15 k. Real estate outgrants and encroachment resolutions.
- 16
- 17 l. All other USACE required programs.
- 18

19 Non-Federal sponsor responsibilities:

- 20
- 21 a. Wildlife and fisheries enhancement.
- 22
- 23 b. Maintenance of enhancement features, such as the
24 waterfowl impoundment areas.
- 25
- 26 c. Enforcement of state laws governing the use of public land.
- 27
- 28 d. Hunting and fishing rules and regulations.
- 29

30 **3.3.4 Project Operations of the Lands Acquired for the Flood Control and** 31 **Environmental Protection Features of the ABFS**

32 When the acquisition of authorized easements under the ABFS is
33 complete, the majority of the lands contained in the ABFS will be
34 encumbered by either a flowage easement; a flowage,
35 developmental control, and environmental protection easement; or
36 a developmental control and environmental protection easement.
37 The non-Federal sponsor will be responsible for 25 percent of the
38 total cost of OMRR&R for these features of the ABFS. The non-
39 Federal sponsor will provide in-kind services in support of USACE
40 O&M of the ABFS easement programs.

41
42 To assess compliance with the easements acquired for the
43 USACE's ABFS Master Plan, USACE employees will conduct
44 inspections.

1 The most critical part of the management of USACE easement
2 provisions of the ABFS is to inform the landowners and their
3 tenants, licensees, permittees, and assigns of their responsibilities
4 under the easement guidelines, and then to place these tracts on
5 an inspection cycle in order to assess compliance. Real Estate
6 Division has developed a database that keeps track of all
7 easement lands. They inform OD of new acquisitions and jointly
8 the personnel of these two divisions meet with and inform
9 landowners of easement guidelines. The acquired easements are
10 placed on an inspection cycle maintained by Real Estate Division.

11
12 USACE is conducting discussions with the proposed non-Federal
13 sponsor to determine the extent of in-kind services that the non-
14 Federal sponsor desires to provide for USACE easement
15 management feature of the ABFS. Owners of lands or interests
16 encumbered by the easements acquired for these features are
17 informed to contact USACE regarding easement issues. The
18 ABFS PO serves as the primary point of contact for USACE
19 regarding these easement issues. The PO coordinates all O&M
20 activities on the easement areas, such as, consent applications,
21 inspections, and timber exception applications, etc. It is anticipated
22 that the non-Federal sponsor will perform periodic aerial
23 inspections of all easement areas to determine if any timber
24 harvesting is being conducted and to identify any new construction
25 sites. It is also anticipated the non-Federal sponsor will conduct
26 title searches in local courthouses to identify timber-harvesting
27 deeds. When the non-Federal sponsor identifies a timber
28 harvesting site or new construction site or obtains a copy of a
29 timber deed or similar document, the non-Federal sponsor will
30 advise the PO, and will provide that office with all available
31 information. The non-Federal sponsor may assist the PO with
32 inspections and landowner meetings.

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44
***The ABFS PO is the
point of contact for
USACE regarding
easement issues.***

It is anticipated that the Master Plan, OMP, and OMRR&R, for the
ABFS will outline the following management activities and identify
the following O&M responsibilities:

USACE responsibilities:

- a. Meet with landowners to discuss application procedures.
- b. Application review, evaluation, and processing.
- c. Inspections.

1 Non-Federal Sponsor responsibilities:

- 2
- 3 a. Aerial inspections to identify timber harvesting sites and
- 4 construction activity.
- 5
- 6 b. Conduct title searches to identify timber-harvesting deeds.
- 7
- 8 c. Assist USACE with inspections and landowner meetings.
- 9

10 **3.3.5 Project Operations of the Water Management Units, Canal Closures and**

11 **Water Circulation Improvements**

12 Implementation of WMU feature is intended to compensate for

13 adverse impacts on Atchafalaya Basin aquatic habitats resulting

14 from flood control and navigation, such as the channel training

15 works on the Atchafalaya Basin main channel and the East and

16 West Protection Levees. Natural processes and human activities

17 have combined to produce 13 hydrologically distinct areas in the

18 ABFS, where water regimes could be managed to mimic historical

19 water overflow patterns to improve water circulation. Originally, the

20 kinds of improvements anticipated would include the dredging of

21 inlet and outlet channels or construction of new ones; constructing

22 low levees or dikes around the units; installing weirs in inlet and

23 outlet channels to control flows; and closing certain bayous and

24 canals. Retaining water within the units by these means, however,

25 could exacerbate stagnation and water circulation problems.

26 Therefore, management unit goals are now redefined as

27 restoration of historic north-to-south flows to the greatest extent

28 practicable, while managing or redirecting sedimentation for the

29 purpose of improving water quality and circulation within the units.

30 Two pilot WMUs will be implemented first, with the implementation

31 of future units dependent on operational success of the pilots. Of

32 13 units, the five areas selected with the greatest potential for

33 accomplishing the goal of restoring historical overflow conditions

34 were Buffalo Cove, Henderson, Beau Bayou, Flat Lake, and

35 Cocodrie Swamp (see Appendix C, Figure 6). Flat Lake

36 subsequently replaced Henderson as the second pilot unit because

37 of Flat Lake's greater potential for significant improvement, as well

38 as its greater public support. Implementation, operation, and

39 monitoring of the pilot units would be evaluated according to plans

40 developed in conjunction with Federal and state agencies. Work

41 has begun in the Buffalo Cove Pilot WMU.

42

43 USACE and the non-Federal sponsor are working together to

44 design and implement the ABFS-authorized WMUs. USACE's

45 authority to construct the WMUs and to bear 75 percent of the cost

46 of OMRR&R applies only to ABFS-authorized WMUs. Construction

1 and OMRR&R of the Federally authorized ABFS WMUs will be
2 conducted in accordance with the terms of the PPA, executed in
3 support of this feature of the ABFS, or the elements thereof, and in
4 accordance with the requirements of the OMRR&R Plan, and
5 developed by USACE, in coordination with the non-Federal
6 sponsor.
7

8 **3.3.6 Project Operations of the Recreational Development Feature of the ABFS** 9 **Project**

10 The O&M of the recreational development feature of the ABFS will
11 be the responsibility of the non-Federal sponsor. AMPs, in
12 accordance with the OMRR&R Plan, will be submitted to USACE
13 and incorporated into the OMP. The recreational feature, or its
14 separable elements, will be inspected periodically by USACE to
15 ensure that the feature is being operated in accordance with
16 statutory authority for the ABFS, the PCA, the OMRR&R Plan,
17 Federal laws, regulations, and policies. The USACE also will be
18 including these areas in its visitation reporting.
19

20 The USACE and the non-Federal sponsor will enter into
21 recreational PPA(s) to share cost in the construction of recreational
22 development features, 50 percent/50 percent, as authorized. In
23 accordance with the project authority, the PPA(s) will provide that
24 the OMRR&R of the completed recreation features, or a functional
25 portion thereof, and all of the cost thereof, are the responsibility of
26 the non-Federal sponsor. The PO personnel will be responsible for
27 performing periodic reviews of the recreational development
28 feature, or the functional portions thereof, to assure that the non-
29 Federal sponsor is in compliance with the requirements of the PPA
30 and the OMRR&R developed thereunder.
31

32 The Master Plan, OMP, and OMRR&R Plan, for the recreational
33 development feature of the ABFS will outline the following
34 management activities and identify the following OMRR&R
35 responsibilities:
36

37 USACE responsibilities:

38
39 Periodic reviews of the OMRR&R of the completed recreational
40 development feature and or the functional portions thereof.
41

42 Non-Federal Sponsor responsibilities:

43
44 OMRR&R of the completed recreation features of the ABFS, or the
45 functional portions thereof, in accordance with the requirements of
46 the PPA and the OMRR&R Plan developed thereunder.

1 **3.3.7 Project Outgrants, Public Access Feature**

2 Numerous outgrants have been granted on USACE fee-owned
3 public access lands. Outgrant management is the responsibility of
4 USACE. Appendix I contains a list of current active outgrants.

SECTION 4.0
FACTORS INFLUENCING AND CONSTRAINING RESOURCE USE,
DEVELOPMENT, AND MANAGEMENT

1 **4.0 FACTORS INFLUENCING AND CONSTRAINING RESOURCE USE,**
2 **DEVELOPMENT, AND MANAGEMENT**

3
4 **4.1 FLOOD CONTROL AND NAVIGATION OPERATIONS**

5
6 **4.1.1 Flood Control Operations**

7
8 *The primary*
9 *mission of USACE*
10 *and the ABLP is*
11 *flood control.*

The primary mission of USACE in the entire ABLP is flood control. The O&M of a complex system of levees, drainage, and flood control structures are vital to the economic, social, and physical existence of the lower Mississippi Valley, including the majority of the population of Louisiana. Inherent in the flood control operation are the limits it places on the physical and social desires and needs of the region, including economic development in areas that flood or their total preservation as a natural ecosystem.

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21 *The Morganza*
22 *Floodway has*
23 *opened twice, in*
24 *1973 and 2011.*

The flood control operation requires that excess floodwater flow through the ABLP. This flowage causes inundation and submerged lands for as much as several months of the year. Most of the natural resource base, as well as potential recreation areas and other developments, are immediately adjacent to and/or within the ABFS. Consequently, they are susceptible to floodwaters from Old River Control Complex and the Morganza and West Atchafalaya Basin Floodways. Nearly the entire area is subject to frequent and sometimes severe headwater and backwater flooding. Although such flooding represents a severe limitation for many types of management/development, the physical condition and annual flooding present unique opportunities that are compatible with and even enhanced by periodic flooding. The West Atchafalaya Floodway has never been opened, and the Morganza Floodway has only been opened twice, in 1973 and 2011.

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The operation of the Old River Control Complex and the possibility of operating Morganza are of themselves major investments that not only affect the natural resources and potential recreational development of the ABFS, but also control the economic development of the area. Through a system of acquired easements, developments that are an impediment to the operation of the ABLP to pass the project flood, or that may represent a potential or imminent threat to life and property, are prohibited or in some manner controlled.

The massiveness of the flood control operation has to rely on a system of levees and channels. These same levees require borrow, building, and maintenance, placing a limitation on what can

1 and cannot be developed within their boundaries and causing
2 various developmental impacts on adjacent lands.

3
4 Within the context of flood control, the overriding constraint of this
5 plan is to limit public use and recreational opportunities within the
6 ABFS to those areas where such activities will not affect the flood
7 control mission of the USACE.
8

9 **4.1.2 Navigation**

10 There are several existing USACE navigation projects within the
11 limits of the ABFS. The operation and maintenance of these
12 existing navigation projects require periodic dredging and
13 placement of dredged material onto existing USACE easement
14 lands, which were acquired for dredged material placement and for
15 channels and channel improvements. Easements for the flood
16 control feature (or flowage and developmental control easements)
17 and easements for the environmental protection feature of the
18 ABFS are being acquired over the existing dredged material
19 placements and the existing channel and channel improvement
20 easements for navigation projects. These existing easements
21 control development in some cases consistently with the rights
22 acquired, but do not contain the timber-harvesting restrictions
23 found in the ABFS environmental protection easements. The
24 easements for both the existing projects and the flood control and
25 environmental protection features of the ABFS are being managed
26 consistently with the rights obtained. In those areas encumbered
27 by both sets of easements, project-specific management criteria
28 have been established for developmental control, which is
29 consistent with the stricter easement.
30

31 Navigation traffic, while not a major deterrent to resource use and
32 protection within the ABFS, is a constraint on some developmental
33 scenarios. Barge traffic is frequent on the main channel of the
34 Atchafalaya River. Smaller waterways within the ABFS are
35 devoted to a variety of commercial endeavors, notably oil and gas
36 extraction, as well as commercial fishing and timber harvesting.
37 These activities give rise to support facilities, docks, wharves,
38 camps, and other commercial facilities located throughout the
39 Lower Atchafalaya Basin Floodway. Maintenance of navigable
40 waterways is necessary for the viability of commercial use of the
41 ABFS, but commercial use precludes some concepts popular with
42 some special interest groups, such as turning the entire ABFS area
43 into a vast wilderness area.

1 The primary constraint of the navigation system in developing the
2 ABFS project features is to attempt to locate recreational and
3 public-use facilities away from river traffic nodes. It is equally
4 important to manage the existing channel, channel improvement,
5 and dredged material disposal easements in a manner that
6 ensures their continued availability for use as dredged disposal and
7 maintenance of the navigational channels.
8

9 **4.2 ABFS PROJECT, FEATURE CONSTRAINTS**

10 Full implementation of the ABFS and its goal of protecting and
11 enhancing the resources of the Lower Atchafalaya Basin Floodway
12 is inhibited by several constraints. Among these constraints are a
13 lack of PPAs and the necessity to prepare technical design
14 memoranda for some of the project features and to obtain
15 environmental clearances, funding, and programming authority.
16 Refer to section 3.1.3 of this document for further details on status
17 of PPAs for the project.
18

19 **4.2.1 WMUs**

20 Issues affecting the WMUs are generally the same as those
21 associated with the channel training feature. The circulation and
22 movement of water to benefit the environment has been the
23 subject of several studies and will likely continue.
24

25 The major factors constraining implementation of the WMUs are
26 that the feature is unscheduled; hence, it is unfunded for
27 construction. Additionally, design memoranda, REDMs, and/or
28 technical reports must be prepared and approved, and
29 environmental clearances must be obtained. Thereafter, a PPA(s)
30 will be negotiated and executed by USACE and the non-Federal
31 sponsor.
32

33 Water management will require the acquisition of easements in
34 addition to those that are currently being acquired for the public
35 access, flood control, and environmental protection features of the
36 ABFS. This acquisition cannot commence until the WMUs are
37 funded and scheduled, environmental clearances are obtained,
38 and the PPA is executed.
39

40 ***WMUs require the
41 acquisition of
42 easements beyond
43 those obtained for
44 other project
45 features.***

46 In order to be fully effective, WMUs may hinder and complicate
47 access to private properties and small craft navigation. Water
48 management units are somewhat experimental, with high
49 implementation costs and unknown results.
50

1 **4.2.2 Easements for the Flood Control and Environmental Protection Features of**
2 **the ABFS**

3 **4.2.2.1 Camp Development**

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13 ***Easements prohibit***
14 ***the construction of***
15 ***structures in the***
16 ***ABFS unless***
17 ***approved by the***
18 ***District Engineer of***
19 ***MVN.***

The developmental control element of the flood control feature of the ABFS prohibits the construction of new permanently habitable structures, and prohibits the construction of other structures, such as camps, unless previously approved by the District Engineer of MVN. Population increases continue to cause a demand for private camp development.

Camp development is an important issue and one that continues to require constant monitoring. The Atchafalaya Basin has always been an area of high public use and the culture in the area is tied very closely to the land and the natural resources.

Large, close-knit families gather together in order to enjoy life, instill family values, socialize, and just generally have fun. For the most part, "the camp" has been the place where these gatherings take place. These camps can range from just a covered shed on the bank of a bayou to a larger more elaborate structure. There is a strong tradition surrounding the use of these structures, and this tradition must be understood in order to manage the developmental control and environmental protection easement lands. Many landowners will be applying for consents for new non-permanently habitable structures, and these requests must be evaluated with understanding of their social needs. At the same time, USACE must fulfill its role in managing the developmental control and environmental protection easements. All aspects of the natural resource needs and the publics' needs must be weighed in order to make sound decisions concerning the granting, conditioning, or denial of these applications for structure consents.



Photograph 4-1. Camps within the ABFS.

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38
39 ***USACE completed***
40 ***Formal Section 7***
41 ***consultation under***
42 ***the Endangered***
43 ***Species Act for the***
44 ***Louisiana black***
45 ***bear.***

Potential adverse impacts on the Louisiana black bear may result from the issuance of real estate camp consents for private camp construction and use on USACE developmental control and environmental protection easement lands acquired as part of the ABFS. In essence, the issuance of consents could lead to increased levels of human-related disturbance and potential human/bear conflicts and loss of riparian habitat and den trees. To reduce the potential for adverse impacts, USACE currently

1 provides materials to educate camp consent applicants on the
2 provisions of the Endangered Species Act in relation to the
3 Louisiana black bear, and guidelines on how to prevent the
4 possibility of attracting bears to campsites. The camp consent
5 issue was resolved under a process of formal consultation with the
6 USFWS. The USACE prepared a Biological Assessment that
7 included educational materials to be provided to camp applicants.
8 The resulting USFWS Biological Opinion, dated January 30, 1998,
9 concurred that the camp consent program is not likely to jeopardize
10 the continued existence of the Louisiana black bear.

11
12 The main challenge arising from the camp development consent
13 program is incorporating fair even-handed management of the
14 ABFS project, so as to protect and enhance the environment, while
15 simultaneously respecting the desire of private landowners to build
16 and maintain camps on property encumbered by an easement,
17 which prohibits the construction of new, permanently habitable
18 structures, and requires the written consent of the USACE prior to
19 construction of non-permanently habitable structures, including
20 camps.

21 22 **4.2.2.2 Timber Harvest Management**

23
24
25
26 ***Timber harvests***
27 ***must comply with***
28 ***environmental***
29 ***protection***
30 ***easement***
31 ***guidelines.***

23 The environmental protection easement of the ABFS does not
24 require landowners to inform the USACE of their intent to conduct a
25 timber operation on environmental protection easement lands.
26 Landowners are required to obtain written permission to exercise
27 one of the three limited exceptions to the timber harvesting
28 restrictions contained in the ABFS environmental protection
29 easement. Therefore, USACE land managers have to rely on
30 periodic inspections of the ABFS environmental protection
31 easement lands to locate any timber operation activities. After
32 timber operation activities are found, the USACE will assess
33 compliance with easement guidelines. As part of USACE's
34 management procedures, the ABFS PO requests that landowners
35 voluntarily notify the PO of upcoming timber operations.

36
37 Periodic inspections of timber operation activities on easement
38 lands are conducted, but these surveillance activities are limited by
39 funding and personnel constraints. Over the past decade, USACE
40 has actively filled its authorized and funded manpower positions to
41 proactively inspect and manage the ABFS easement lands. While
42 these efforts have increased the effectiveness of the easement
43 management program, the task will become ever more challenging
44 as additional acreages are purchased as funds become available.
45 As of 2011, the total acreage of easements within the 338,000
46 authorized acres is approximately 144,000 acres, approximately 37

1 percent of the ultimate project size. Improved surveillance can be
2 achieved through increased participation by the non-Federal project
3 sponsor (see section 3.3.2.1 of this document for discussion of
4 increasing role expected after completion of the PPA), as well as
5 increased use of remote sensing technologies.
6

7 If it is determined that the easement provisions are not adhered to,
8 MVN, Real Estate Division, in consultation with the other MVN
9 representatives, determines the appropriate course of action.
10 Every encroachment on the government's interests is unique and
11 are evaluated and resolved in a fashion that gives due
12 consideration to its special circumstances. Efforts are made to
13 resolve all encroachment issues expeditiously, at the lowest
14 administrative level possible and at the least cost to the
15 government.
16

17 **4.2.2.3 Land Conversions**

18 The developmental control element of the flood control feature of
19 the ABFS contains a provision that prohibits the conversion of the
20 property from an existing use. The management and monitoring of
21 the land use conversion prohibition in this easement is a challenge
22 with the current levels of project funding and personnel to
23 adequately inspect and manage the ABFS easements.
24

25 **4.2.3 Recreation Development**

26 The primary constraint to recreation development is that it is
27 unscheduled, with the exception of the Atchafalaya River Landing,
28 Simmesport, Louisiana, and Myette Point Boat Launch projects,
29 which have been completed. In addition, the non-Federal sponsor
30 is required to provide the lands, easements, rights-of-way,
31 relocation, and disposal areas for this feature.
32

33 The statutory authority for the recreation feature of the ABFS
34 requires that the non-Federal sponsor provide, *inter alia*, all of the
35 lands, easements, rights-of-way, relocation, and dredged material
36 areas (LERRDs) (a minimum of 1,500 acres of fee lands), and bear
37 50 percent of the cost of construction of the recreation features of
38 the ABFS. OMRR&R of these recreation features will be entirely
39 non-Federal and will be subject to compliance with the OMRR&R
40 Plan developed by the USACE for this feature.
41

42 Revenues generated through campground user fees, day-use fees,
43 or other incidental fees associated with operation of developed
44 public recreation facilities and supporting third-party concessions,
45 will be retained by the state under appropriate lease agreement,
46 between the non-Federal sponsor and third party concessionaires,

1 and must be spent on ABFS lands. All fees collected by state or
2 concessions have to be reviewed and managed in accordance with
3 USACE guidelines, subject to Federal regulations, monitoring, and
4 reporting requirements.
5

6 **4.2.4 Public Access Lands**

7 **4.2.4.1 Land Acquisition**

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10
11
12 *A total of 70,000*
13 *acres is authorized*
14 *for acquisition as*
15 *part of the public*
16 *access feature of*
17 *the ABFS.*
18

19 The original authorized level of public access lands was \$32 million
20 or approximately 50,000 acres, of which 47,324 acres have been
21 acquired. WRDA of 2007 removed the spending cap on this project
22 feature and authorized an additional 20,000 acres of acquisition.
23 The 2007 authority has opened the possibility of additional large
24 acreage purchases to augment the existing inventory of public
25 access lands. There are, however, a number of constraints that
26 impact the full acquisition of the authorized acreage. The ABFS
27 authorization requires that the public access feature's fee lands be
28 purchased from non-governmental, willing sellers. Obviously, this
29 legislative directive is a significant constraint on the ability to target
30 acquisitions to meet project needs and public desires. Another
31 constraint in any future acquisitions is the limitation imposed by
32 annual budget allocations that are normally insufficient to acquire
33 large tracts of land.

34 There are a number of project needs and priorities that must factor
35 into decisions about the acquisition of future tracts from willing
36 sellers. Among these are the advisability of purchasing in-holding
37 tracts (those that are completely or partially surrounded by current
38 project lands), as well as purchasing adjacent tracts where the
39 purchase would help solve management problems or otherwise
40 advance the objectives of the public access feature. Examples of
41 strong rationale for purchase of in-holding tracts and lands
42 adjoining existing public access areas would be improvements in
43 road or trail access, high fish and wildlife values that would
44 enhance the public's enjoyment, and a determination that the
45 proposed purchase would not cause significant new O&M costs or
46 significant management problems.

The potential purchase of additional public access tracts that are
not contiguous with the existing inventory of project lands requires
a careful review to evaluate the costs of development (roads,
parking lots, site amenities, etc.) and day-to-day management
requirements. These costs must then be weighed against the value
of the potential purchase in increasing public access to the
resources of the Atchafalaya Basin. Potential land purchases that
are remote from existing public access lands and/or introduce
significant management issues must be thoughtfully considered. A

1 willing seller is required for acquisition under the public access
2 feature, but the availability of the property is not sufficient, by itself,
3 to justify expenditure of project funds.
4

5 Various stakeholders have expressed preferences regarding where
6 future public access lands purchases should be focused. These
7 expressed public desires are a consideration in the review process
8 as well. For example, some environmental proponents have long
9 argued that the remaining authorized purchases should be
10 baldcypress-tupelo gum swamp that is representative and
11 characteristic of a special and unique environment in the
12 Atchafalaya Basin. USACE will continue to evaluate future
13 purchase of baldcypress-tupelo gum tracts, but the challenge is
14 locating available tracts that are contiguous and amenable to
15 management for public access.
16

17 **4.2.4.2 Physical Constraints of Public Access Lands**

18 Due to the “willing seller” requirement imposed on the acquisition of
19 fee lands for the public access feature of the ABFS and the
20 undeveloped nature of the terrain, a number of current fee tracts
21 have been acquired that are not adjacent to public roads or
22 navigable streams. Often these tracts are land-locked and the
23 government has determined that it must obtain road or channel
24 easements in order to make these lands available to the general
25 public for the project purposes of the public access feature. Real
26 Estate Division is working with OD to identify and is now acquiring
27 road and channel easements and private in-holdings where
28 possible.
29

30 **4.2.4.3 Forest/Vegetative Cover**

31 Timber management for the enhancement of wildlife and to protect
32 and enhance the vitality of valuable forest species’ is the major
33 impetus to an active and aggressive forest management program.
34 Efforts to manage the public access lands in a manner that reflect
35 their national values as productive bottomland hardwoods and
36 baldcypress-tupelo gum forests are constrained, in part, by past
37 actions of private landowners and the nature and reality of the
38 constraints placed by Congress upon USACE authority to acquire
39 the fee estate (excluding minerals) from willing sellers of privately
40 owned lands. Much of USACE fee-owned tracts have been high-
41 graded in the past, and require extensive silvicultural treatments
42 and reforestation to reestablish a more historical forest condition.
43 These treatments and reforestation are very costly, and O&M funds
44 for these activities are limited.

*Much of USACE's
fee-owned tracts
were improperly
managed at the time
of acquisition.*

1 **4.3 CONSTRAINTS AFFECTING ABFS PROJECT LANDS**

2
3 **4.3.1 Cultural Resources**

4 Archaeological and other cultural resources are important factors in
5 the overall management programs and practices that are an
6 inherently Federal responsibility. This responsibility is not confined
7 solely to fee-owned lands and is not relegated only to properties
8 where an active field presence is situated, but is defined for all
9 lands, fee and easement, where there is a Federal interest. It is
10 USACE’s responsibility to ensure that all significant cultural
11 resources on ABFS lands are identified and protected.

12
13 Three archaeological sites have been identified on ABFS fee lands:
14 the Henderson lake site (16SM95), the Bayou Fardoche Mound
15 site (16SL34), and a site associated with the historic town of
16 Atchafalaya (16SM102).

17
18
19
20
21 *One prehistoric site*
22 *eligible for the*
23 *NRHP has been*
24 *identified on ABFS*
25 *lands.*

18 The Henderson Lake site is located in the northeastern portion of
19 Henderson Lake, approximately 1.2 mile north of I-10. The site is a
20 “highly sensitive area” (Smith et al. 2003:77), and is subject to and
21 threatened by the dynamic hydrological conditions of the
22 Atchafalaya Basin. The Henderson Lake site is typically
23 submerged and only exposed during very low-water conditions,
24 such as a draw-down in 2000. Plans for further investigations,
25 stabilization, or preservation of these sensitive sites must be
26 appropriately coordinated with the Louisiana State Historic
27 Preservation Officer (SHPO) and Native American tribes.

28
29 The deposits identified in 1975 as the Bayou Fardoche Mound site
30 are located in the Bayou Fardoche Natural Area, approximately 1.3
31 mile southeast of the Bayou Fardoche gaging station. Since little
32 was known about this site, archaeological investigations were
33 conducted in 2006 and 2009 and concluded that the mounds were
34 in fact not prehistoric in origin, but were likely spoil deposits from
35 twentieth century land use (Barse and Heller 2011). Therefore, this
36 site is no longer considered a cultural resource. The site
37 associated with the historic town of Atchafalaya site is at the
38 southern edge of USACE fee lands, and is not considered eligible
39 for NRHP listing (Godzinski et al. 2005).

40
41 Comprehensive knowledge of potential cultural resources within the
42 ABFS public access lands was lacking at the time of the 2000
43 Master Plan and remains lacking. Previous cultural resources
44 investigations (Vigander and Maygarden [1994] for BDOA; and
45 Smith et al. [2003] for IBA) recommended more extensive cultural
46 resources investigations, including collection and/or analysis of

1 additional geophysical data (seismic profiling) to more accurately
2 assess the probability of archaeological resources in any particular
3 location and, ultimately, creation of an inventory of prehistoric and
4 historic sites. No cultural resource evaluation has been performed
5 for USACE fee lands in the SBA.
6

7 When surveys reveal significant sites, protection plans, including
8 monitoring of sites for damage, will need to be established. This
9 site protection may impede other activities (USACE and private)
10 that could destroy or damage the protected site.
11

12 There is a lack of comprehensive cultural resources surveys of the
13 lands acquired by easement, and easement lands may contain
14 sites that should be considered when destructive activities are
15 proposed. A monitoring and permit review process has been
16 established to ensure that significant cultural resources are not
17 destroyed by Federally approved actions.
18

19 **4.3.2 Oil and Gas Activities**

20
21 *USACE does not*
22 *control the mineral*
23 *rights on fee or*
24 *easement lands*
25 *acquired for the*
26 *ABFS Project.*
27

28 The entire ABFS area has been and is subject to oil and gas
29 exploration and development. The public access feature's fee
30 estate and the flood control and environmental protection features'
31 easement estate both exclude minerals from the rights acquired
32 therein. The nature of oil and gas development is a detriment to
33 the enhancement of the environment and, specifically, to the
34 overall natural resource management activities in the ABFS. Such
35 impediments include:
36

37 Oil and gas activities require transportation corridors, including
38 roads, bridges, wharves, docks, and pipelines, all of which require
39 the clearing of vegetated areas, as well as containment areas for
40 wells.
41

42 Excavated canals for well sites may alter water flow regimes, as
43 well as increase erosion and denude bank lines.
44

45 Exploration lines (transects) require some clearing without regard
to sensitive habitats.

46 **4.3.3 Social and Traditional Cultures**

47 There is an importance to the preservation of the traditional
48 lifestyles and pursuits that have defined the character of the
49 Atchafalaya Basin. This principle is recognized in the natural
50 resource and cultural resource management regulations of
51 USACE.

***The ABFS is located
in the Atchafalaya
National Heritage
Area.***

Public interest in the distinctive cultures of the south-central Louisiana region has grown over recent decades. As evidence of this, in 1997 the State of Louisiana established the Atchafalaya State Heritage Area encompassing St. Mary, Iberia, St. Martin, St. Landry, Avoyelles, Pointe Coupee, Iberville, Assumption, Terrebonne, Lafayette, West Baton Rouge, Concordia, East Baton Rouge, and Ascension parishes. In 2006, PL No. 109-338 (Section B), Section 213 established the Atchafalaya National Heritage Area, supplanting the State area. National heritage areas are regions with concentrations of significant natural, scenic, cultural, historic, and recreational resources. As a concept, heritage areas are partnerships where residents, businesses, local governments, and state and Federal agencies collaborate to create more livable and economically sustainable regions. The charge upon the management entity of the Heritage Area (the Atchafalaya Trace Commission) is to implement a management plan, including providing assistance to units of government and others in carrying out programs that recognize important resource values within the Heritage Area; encouraging sustainable economic development within the Heritage Area; establishing and maintaining interpretive sites within the Heritage Area; and increasing public awareness of, and appreciation for the natural, historic, and cultural resources of the Heritage Area.

The practical effect of the Atchafalaya National Heritage Area Act largely remains to be seen. It is a cooperative initiative only and does not affect any authority of the Federal government to regulate any use of land as provided for by law, or authorize any particular Federal action. The responsibilities of the ABFS and its management remain the same as they were prior to the Act. The focus of the Atchafalaya Trace Commission so far seems to be on economic development of the wider region (including significant area outside of the hydrologic basin of the Atchafalaya River). Despite the fact that creation of the Atchafalaya National Heritage Area does not substantially alter the legal and regulatory status of the ABFS, it suggests that traditional lifestyles and pursuits (or activities perceived as such) are the subject of growing interest among a wider public of stakeholders. Regardless of effects connected specifically with the creation or management of the National Heritage Area, the development of new or better organized stakeholder groups has a potential to influence public opinion and behavior in a number of ways. Given stronger or more widespread public interest, levels of tension or conflict resulting from differing viewpoints on how ABFS resources should be managed could escalate as demands upon those resources

1 evolve. Such conflicts may include (some already occurring or
2 likely to occur):
3

- 4 • Consumptive versus non-consumptive recreational uses
5 (eg., hunting and fishing versus birding, hiking, canoeing, or
6 bike riding)
7
- 8 • Commercial resource exploitation versus recreational uses
9 (e.g., commercial crawfishing versus waterfowl hunting)
10
- 11 • Preservation versus commercial development or resource
12 exploitation (e.g., public opposition to logging or petroleum
13 activity)
14
- 15 • Public sentiment versus private land rights and controls.
16 (e.g., conflict over easement regulations)
17
- 18 • Public sentiment versus management decisions (e.g.,
19 opposition to timber cutting for wildlife management,
20 opposition to special permit policy changes)
21
- 22 • Divergent interests of local, state, and Federal governments
23

24 A case in point illustrating the complexity of issues affected by
25 social and traditional cultures is the conflict arising between
26 commercial crawfish harvesters and waterfowl hunters in the use of
27 Henderson Lake during migratory waterfowl season. Essentially, it
28 is difficult for these user groups to co-exist in the same areas at the
29 same time. Commercial crawfishing is a significant economic
30 activity in the Atchafalaya Basin, and the community of
31 independent fishermen is relatively well-organized, vocal, and
32 politically well-connected in the region and state. Crawfishing is
33 widely considered a “traditional” activity, but it is arguable whether
34 the commercial crawfish industry (as opposed to subsistence
35 harvesting) existed to any extent in almost all of the historic period.
36 A perception that the commercial activity is “traditional” and
37 therefore carries certain desirable values nevertheless affects any
38 discussion of possible management activities that could have an
39 effect upon the crawfish harvest, including decisions about water
40 quality management, aquatic nuisance vegetation management,
41 special permit policy and season limitations, and so on. The
42 interests of recreational waterfowl hunters, participating in another
43 activity of several hundred years of tradition, who come into conflict
44 with the interests of the crawfish harvesters while also sharing
45 many of their overarching goals of maintaining high-quality
46 environmental conditions in the Atchafalaya Basin. The complexity

***Commercial
crawfishing and
waterfowl hunting
are conflicting uses
on Henderson Lake.***

1 of these sorts of constraints is likely to grow as the public interest in
2 the Atchafalaya Basin and how it is managed (whether they all
3 physically use it or not) becomes wider and more diverse, and as
4 activities viewed as “traditional” are considered desirable to
5 preserve and under a range of threats.
6

7 **4.4 ADMINISTRATIVE AND POLICY FACTORS**

8 9 **4.4.1 Federal Cost-Sharing Requirements**

10 Cost-sharing requirements for ABFS features are the most
11 constraining administrative and policy concerns that limit Federal
12 involvement. The specific PPAs for each of these features will
13 define the obligations and responsibilities of the USACE and the
14 non-Federal sponsor, therefore including, but not limited to,
15 crediting and accounting procedures under the PPA.
16

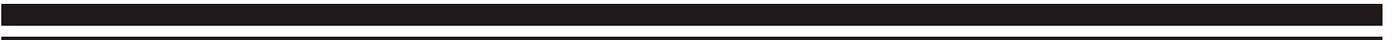
17 **4.4.2 Non-Federal Sponsor Constraints**

18 The non-Federal sponsor for the ABFS, with the exception of the
19 Atchafalaya River Landing Simmesport, Louisiana, Project (an
20 element of the recreation feature of the ABFS) is proposed to be
21 LDNR. Until PPAs have been executed, the non-Federal sponsor
22 cannot fully participate in the ABFS.

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SECTION 5.0
RESOURCE USE OBJECTIVES



1 **5.0 RESOURCE USE OBJECTIVES**

2
3 **5.1 USACE-WIDE OBJECTIVES**

4
5 The objectives of USACE Natural Resource Stewardship and
6 Recreation Management Program (ERs 1130-2-540 and 1130-2-
7 550, dated November 15, 1996) are listed below:

- 8
9 a) to manage natural resources on USACE administered lands
10 and waters, in accordance with ecosystem management
11 principles, to ensure their continued availability;
12
13 b) to provide a quality outdoor recreation experience, which
14 includes an accessible, safe, and healthful environment for a
15 diverse population;
16
17 c) to increase the level of self-sufficiency for the USACE
18 recreation program;
19
20 d) to provide outdoor recreation opportunities on USACE
21 administered lands and waters on a sustained basis; and
22
23 e) to optimize the use of leveraged resources to maintain and
24 provide quality public experiences at USACE water
25 resources projects.
26

27 Sound resource use strives to achieve a balance among the
28 numerous and often conflicting options typically involved in a large
29 water-based project. Scarce and fragile resources must be
30 managed in the context of competing demands, and the natural
31 and human environments must be able to absorb the effects of
32 changes brought on by the project. Objectives must be framed to
33 meet the best use of the natural and man-made resources,
34 appropriately meet the needs of the project users, and offer long-
35 term value to the region and the Nation.
36

37 **5.2 PROJECT-SPECIFIC OBJECTIVES**

38
39 The primary purpose of the ABFS project, as recommended in
40 Paragraph 3 of the Chief of Engineers Report dated February 28,
41 1983, is to implement a multipurpose plan to protect south
42 Louisiana from Mississippi River flooding, while retaining and
43 restoring the unique environmental features and long-term
44 productivity of the natural environment of the Basin, and in turn,
45 establishing a cohesive, comprehensive policy for guidance of

1 planning, design, and resource management decisions on project
2 lands and waters.

3
4 The primary project objectives are listed as follows:

- 5
6 a) to implement a flood control system that will safely pass the
7 project flood to the Gulf of Mexico in an environmentally
8 sound manner, and to reduce to the maximum extent
9 practical, the deposition of sediments that reduce the ability
10 of the floodway to pass the project flood;
- 11
12 b) to retain, restore, and protect the unique environmental
13 features of the floodway, and maintain or enhance the long-
14 range productivity of the wetlands and woodlands;
- 15
16 c) to control land-use changes;
- 17
18 d) to maximize public opportunity to observe and utilize the fish
19 and wildlife resources of the floodway, by providing public
20 access and public recreation facilities; and
- 21
22 e) to develop and manage public access lands in a manner
23 consistent with the environmental goal of maintaining or
24 enhancing productivity of the habitat (i.e., allowing the
25 management of timber for fish and wildlife habitat
26 improvement), as well as preserving existing aesthetic
27 values to benefit the public access user.

28
29 The implementation of plan features to accomplish these project-
30 specific objectives will provide a balanced approach to addressing
31 water resources problems encountered in the ABFS, while
32 providing for the safe passage of the project design flood in an
33 environmentally acceptable manner.

34 35 **5.3 MISSION STATEMENT FOR THE ABFS**

36
37 The following project mission statement was developed by the
38 USACE project team in July 2003 during a strategic planning
39 session and provides context for use and management of the
40 project's natural and cultural resources:

41
42 *The ABFS Team, in cooperation with public and private interests,*
43 *maintains and enhances a nationally significant environmentally*
44 *and culturally diverse system, provides traditional and non-*
45 *traditional outdoor uses, balancing competing interests through*

1
2

forward thinking and technical expertise to benefit the people of Louisiana and the nation.

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SECTION 6.0
LAND CLASSIFICATION PLAN FOR DEVELOPMENT
AND RESOURCE MANAGEMENT

1 **6.0 LAND CLASSIFICATION PLAN FOR DEVELOPMENT AND RESOURCE**
2 **MANAGEMENT**

3
4 **6.1 LAND ALLOCATION**

5
6
7
8
9 *Land allocations in*
10 *the ABFS are*
11 *consistent with ER*
12 *and EP 1130-2-550.*

All lands are allocated in accordance with the authorized purposes for which they were, or are to be, acquired. These allocations are an admixture of several authorizations, spanning many years. The ABFS in effect authorized new features (as recommended in Paragraph 3 of the Report of the Chief of Engineers dated February 28, 1983) and incorporated the previously authorized feature "Lands Below the Latitude of Krotz Springs" project into one comprehensive project. In this section, an attempt is made to describe and to define the land allocation system consistent with ER and EP 1130-2-550 that is applied to various ABFS components and detailed in succeeding chapters.

13
14
15
16
17
18 **6.1.1 Plan Component Organization for Classification**

The ABFS features are organized as functional land areas that are managed as separate distinct parts of the overall project. These lands and waters are organized as follows:

- 19
20
21
22
23 a) BDOA (Public Access Feature)
24
25 b) IBA (Public Access Feature)
26
27 c) SBA (Public Access Feature)
28
29 d) Flowage Easements; Flowage, Developmental Control and
30 Environmental Protection Easements; Developmental
31 Control and Environmental Protection Easement Lands
32 (Flood Control and Environmental Protection Features)
33
34 e) Recreation Lands (Recreation Feature)
35
36 f) WMUs
37
38 g) Canal Closures and Water Circulation Improvements
39 (unscheduled and currently not addressed in this master
40 plan)
41

42 **6.1.2 Land Allocation System**

43 All lands will be allocated in accordance with the authorized
44 purposes for which they were, or are to be, acquired. A project

1 map delineating land according to the land allocation is depicted in
2 Appendix C, Figure 7. Land allocations are defined as follows:
3

4 a) Operations. Operations lands are defined as lands acquired
5 in accordance with the authorizing documents for the
6 operation of the project. The authorized features of the
7 ABFS are flood control, environmental protection, water
8 management, canal closure and water circulation
9 improvements, public access, and recreation. This
10 allocation is made for lands acquired for all of these
11 features, insofar as said lands are necessary for the
12 operation, maintenance, repair, replacement, and
13 rehabilitation of the ABFS.
14

15 b) Recreation. These are defined as separable lands acquired
16 in accordance with authorizing documents for public
17 recreation. For the ABFS, these lands are the 1,500 acres
18 authorized for recreation development.
19

20 c) Fish and Wildlife. These lands are defined as those
21 separable lands acquired in accordance with authorizing
22 documents for fish and wildlife management. No lands in
23 the ABFS meet the definition for fish and wildlife lands.
24 Accordingly, none are allocated to this purpose.
25

26 d) Mitigation. Land acquired or designated in accordance with
27 authorizing documents to offset losses associated with
28 development of the project. There are no mitigation lands
29 required by this project. Some lands have been used for
30 mitigation planting to offset provisions of a Section 404
31 permit, but those actions are not directly related to this
32 project.
33

34 **6.2 LAND CLASSIFICATION**

35
36 Allocated project lands have been further classified to provide for
37 development and resource management consistent with authorized
38 project purposes. The classification process consistent with ER
39 and EP 1130-2-550 refines the land allocations to fully utilize
40 project lands, cognizant of public desires, project-specific resource
41 requirements and suitability. A project map delineating land
42 according to the land classification is depicted in Appendix C,
43 Figure 8. Land classifications are defined as follows:
44

45 a) Project Operations

1 This classification category includes those lands required for the
2 engineered project structures, operations center, PO and visitor
3 information center, maintenance compound, and other areas that
4 are used solely for project operations. A project operations
5 equipment and vehicle warehouse, with a small administrative
6 office is located in the IBA. This category is minimally used on the
7 public access and recreation development lands, and is non-
8 existent for easement lands.

9
10 b) Recreation

11
12 This classification category is reserved for those lands developed
13 for intensive recreational activities by the visiting public, including
14 developed recreation areas and areas for concession, resort, and
15 quasi-public development. At new projects, recreation areas
16 planned for initial development are included in this classification.
17 Future areas are classified as multiple resource management
18 areas until initiation of the development. As such, all recreation
19 feature properties are classified in this version of the plan as
20 multiple resource management areas pending their development.

21
22 c) Mitigation

23
24 This classification category only includes land acquired or
25 designated specifically for mitigation. The ABFS has no such
26 properties.

27
28 d) Environmentally Sensitive Areas

29
30 This classification category covers areas where scientific,
31 ecological, cultural, or aesthetic areas have been identified. With a
32 project as large as the ABFS, the presence of all three types is
33 likely.

34
35 e) Multiple Resource Management

36
37 This classification category is applied to lands managed for one or
38 more of, but not limited to, the following activities to the extent that
39 they are compatible with the primary allocation(s). This
40 classification category applies to the majority of the 70,000 acres of
41 authorized public access lands. Classification sub-categories are:

42
43 1) Vegetative Management

44
45 This sub-category is concerned with management activities for the
46 protection and development of forest and vegetative cover.

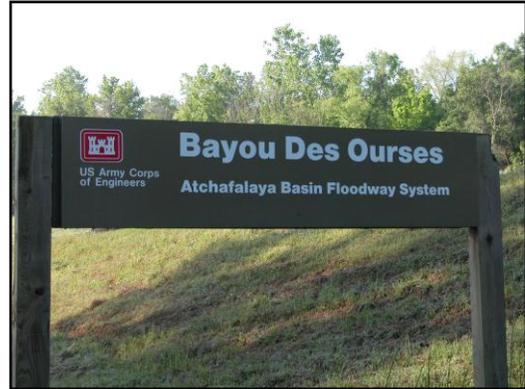
SECTION 7.0
BAYOU DES OURSES AREA, ABFS PUBLIC ACCESS LANDS



7.0 BAYOU DES OURSES AREA, ABFS PUBLIC ACCESS LANDS

7.1 BDOA LAND ALLOCATIONS AND CLASSIFICATIONS FOR DEVELOPMENT AND RESOURCE MANAGEMENT

The USACE has acquired approximately 16,400 acres of fee lands, exclusive of minerals, in the BDOA, which is located in the vicinity of the LDWF's SWMA in support of the public access feature of the ABFS (Appendix C, Figure 9 and Photograph 7-1). The USACE is in the process of acquiring road easements in support of this project feature. These lands were acquired in close proximity to SWMA and the ANWR (see Appendix C, Figure 9). Both SWMA and ANWR were acquired and managed by the respective agencies under authorities, which are separate and independent of the statutory authority for the ABFS. This area is bounded on the west by the Atchafalaya River, north by U.S. Highway 190, south by I-10, and east by the East Atchafalaya Basin Protection Levee (EABPL). Road access is available on the western boundary via Louisiana Highway 975, which parallels the river and runs between U.S. Highway 190 and I-10.



Photograph 7-1. Bayou Des Ourses Area.

The BDOA (acquired by USACE for the public access feature), SWMA, and ANWR are all available for the public's use in accordance with the regulations and requirements of each of the respective jurisdictional agencies and comprise the following approximate acreage:

USACE	16,400 acres
USFWS	15,220 acres
LDWF	11,780 acres

This section of the Master Plan is limited to classifications and management guidelines that are specific to the BDOA. No attempt is made to address SWMA and ANWR lands. However, as a rule all three properties are similar in the opportunities afforded the public. Interspersed in BDOA, SWMA, and ANWR are easement lands acquired by USACE for the flood control and environmental protection features of the ABFS (easements for flowage,

1 developmental control, and/or environmental protection). These
2 easements are not addressed in this section. Management
3 concerns applicable to the easements acquired for the ABFS flood
4 control and environmental protection features are contained in
5 Section 10.
6

7 **7.1.1 BDOA Land Allocations**

8 As stated in Section 6, there are four distinct project allocations:
9 Operations, Recreation, Fish and Wildlife Management, and
10 Mitigation.
11

12 The Operations land allocation is applicable to all BDOA lands.
13 The remaining three allocations do not apply.
14

15 **7.1.2 BDOA Land Classifications**

16 Using the Land Classification System for Development and
17 Resource Management, the following classifications have been
18 made for the BDOA (see Appendix C, Figure 8). The land
19 classification scheme is intended to fully utilize ABFS lands relative
20 to legislative authority and policy directives. The resource use
21 objectives listed in Section 5 of this plan reflect these authorities
22 and policy directives, and therefore, they provide the goals for the
23 classification process.
24

25 **7.1.2.1 Operations**

26 Operations lands at BDOA are limited to a single equipment
27 storage and maintenance compound. Additional structures may be
28 added in the future to assist with project management. These
29 areas would then be added to this classification and this section
30 would be updated. All operations areas are off-limits to the visiting
31 public, except when accompanied by project personnel. Security
32 measures will be implemented or enhanced where necessary to
33 protect Government property and maintain public safety.
34

35 **7.1.2.2 Recreation**

36 There are no lands classified as recreation lands within the BDOA.
37 There is no intensive recreation development, and none is
38 envisioned in the future.
39

40 **7.1.2.3 Mitigation**

41 There are no lands classified as mitigation lands within the BDOA.
42 Portions of the BDOA have been used and will continue to be used
43 for off-site mitigation banking; however, these sites will be

1 managed in a manner consistent with the other land classifications
2 used.

3 4 **7.1.2.4 Environmentally Sensitive Areas**

5 7.1.2.4.1 Ecological Resources

6 At this time, no lands are classified as ecologically sensitive within
7 the BDOA. If future resources, such as black bear den trees,
8 eagle/kite nests, special rookeries, endangered plant communities,
9 etc., are located, then this designation will be applied to those sites,
10 with a goal to preserve or retain the values associated with these
11 resources.

12 13 7.1.2.4.2 Cultural Resources

14 As discussed in Section 2, portions of the BDOA have been
15 surveyed for cultural resources. There is a possibility of significant
16 cultural resources within the BDOA, but until the the entirety of fee
17 property is surveyed and assessed for cultural resources, this land
18 classification cannot be employed.

19 20 7.1.2.4.3 Aesthetic Resources

21 At this time, no lands are classified as aesthetic resources.

22 23 **7.1.2.5 Multiple Resource Management**

24 This classification category, with all its sub-categories, is applicable
25 to virtually all of the BDOA. At some locations, a particular sub-
26 category will be dominant, but by and large, all three sub-
27 categories are compatible with each other.

28 29 7.1.2.5.1 Vegetative Management

30 This land classification sub-category is generally applied to the
31 entire BDOA, excluding areas designated as recreation low-density
32 and inactive and/or future recreation areas. The objectives for this
33 category of resource management are essentially the same as for
34 fish and wildlife management. Maintenance and improvement of
35 aesthetic resource quality, especially along transportation corridors,
36 is an objective. Therefore, vegetative manipulation in these areas
37 will be an integral part of wildlife and fisheries management and
38 also integral to the provision of compatible recreational activities.
39 Another major consideration in providing stewardship to the natural
40 and created resources associated with USACE projects is the
41 preservation and enhancement of the aesthetic integrity of stream
42 banks and shorelines.

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The management approach will be to permit natural processes to proceed in an uncontrolled fashion in existing forested areas. Preservation may require management efforts to perpetuate ecologically balanced forestlands, including control of insects and disease. Technical assistance and coordination may be sought from U.S. Forest Service and USFWS. In low-intensity recreation use areas, management of forest resources will be consistent with the maintenance of natural characteristics. Plantings, as well as necessary clearings or selective removal of trees will seek to promote the creation or preservation of natural landscapes and seek to enhance wildlife habitats.

Vegetative management will focus on providing a diversity of habitats.

Any management plan to benefit wildlife should provide diversity of vegetation types and age classes. Nature provides this diversity through windstorms, catastrophic fires, disease epidemics, and insect infestations. With management, decisions can be made concerning the interspersion of vegetation types. Diversity is enhanced through creation and maintenance of openings in and near forested areas. Openings provide food, breeding habitat, nesting cover, brooding habitat, or escape cover. Wildlife openings can also be used to concentrate species populations in a given area in order to promote a more complete utilization of the resource or to increase the amount of edge effect, which provides more diverse habitat in one location.

Several vegetative management techniques may be used for areas along powerline and pipeline rights-of-way and other open transportation corridors. A program for managing these areas customarily involves fertilizing, seeding, and mowing or bushhogging. The featured wildlife species or group determines the particular mix of seed and cultural treatment. Portions of large pipeline and powerline rights-of-way can be planted and mowed or bushhogged, and the remainder allowed to revert to brush and saplings (Photograph 7-2).



Photograph 7-2. Maintained pipeline right-of-way opening.

The margins of adjacent forested land should form a scalloped pattern to maximize edge effect. Large rights-of-way can be managed to provide patches of vegetation in various stages of succession. The utilization of these types of areas as permanent openings results in less hard mast and fiber production loss

1 because less land is taken out of production. Using these lands
2 that are often neglected or left idle can raise the wildlife carrying
3 capacity. Maintenance and management of pipeline, powerline,
4 and range line openings in the BDOA will benefit a variety of wildlife
5 populations, including swamp rabbits, deer, turkey, and various
6 neotropical migrant species.

7
8 Significant areas of giant cane (*Arundinaria gigantea*) or
9 canebrakes should be identified and possible management
10 procedures implemented to protect this unique habitat type. Where
11 possible, expansion of this habitat type into adjacent agricultural or
12 forested areas should be encouraged.

13
14 7.1.2.5.2 Wildlife Management General (Fish and Wildlife Management Activities)

15
16
17
18
19 ***Threatened and***
20 ***endangered species***
21 ***on ABFS land will***
22 ***receive the highest***
23 ***management***
24 ***priority.***

15 This subcategory is applied to those lands where forested and
16 wetland areas can provide valuable habitat for fish and wildlife
17 resources. Of primary importance in this subcategory is the
18 maintenance and enhancement of fish and wildlife resources. Fish
19 and wildlife have ecological, economic, educational, aesthetic,
20 historical, recreational, and scientific value to the region and nation.
21 The management of any population of threatened or endangered
22 species that may be discovered on project lands or that colonizes
23 project lands and waters shall receive the highest priority from a
24 management perspective. The objective of a non-consumptive fish
25 and wildlife management program shall be to retain natural
26 resources for the visitor to observe and enjoy. This implies that the
27 widest variety of species endemic to each community is to be
28 maintained on project lands.

29
30 The provision of outdoor recreation opportunities, which are
31 compatible with or dependent upon fish and wildlife management,
32 is a secondary objective in this subcategory. This will include the
33 continued availability of existing recreational activity to the extent
34 practicable. New recreational opportunities should also be
35 provided. When required, project maintenance activities should be
36 designed and implemented to minimize adverse effects on the
37 natural resources.

38
39 Aquatic resource measures for public access feature project lands
40 will fall under one of two categories. All water areas will be
41 passively managed for freshwater finfish and shellfish, and there is
42 the potential for some of these project lands or waters to be
43 enhanced for fisheries resources in cooperation with a non-Federal
44 sponsor.

1 Wildlife resource objectives include the management for big game,
2 small game, non-game, waterfowl, furbearers, commercial
3 herpetofauna, and wildlife observation. This involves passive
4 management and participation in various enhancement projects for
5 wildlife resources. Wildlife is a part of the outdoor experience for
6 many recreationists, and wildlife observation and photography can
7 be incidental to other project activities, or they can be a primary
8 reason for visiting a site. Management activities will be undertaken
9 to provide for both of these types of wildlife utilization.

10
11
12
13 ***Existing or potential***
14 ***den trees will be***
15 ***retained during***
16 ***silvicultural***
17 ***treatments.***

18 Important existing or potential den or cavity trees should be
19 preserved and managed, and attempts should be made to make
20 ample den or nest trees continuously available as a natural and
21 vital component of the forest as passive management for cavity-
22 nesting species. The artificial nest structure for cavity nesters is a
23 secondary technique to be used only when insufficient numbers of
24 suitable cavities do not exist in the natural environment. Other
25 active management procedures include intermediate timber
26 harvests, water level manipulations, and maintenance of vegetative
27 openings.

28 Public hunting, fishing, and trapping of a harvestable surplus of fish
29 and wildlife resources will be a result of passive and active
30 management. A permit system may be utilized to control harvest
31 and prevent overuse.

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39 7.1.2.5.3 Recreation Low-Density

40 This subcategory is applied to BDOA lands that are not already
41 covered by a more restrictive specific classification. Indeed, one of
42 the goals of the public access feature of the ABFS project is to
43 "...maximize public opportunity to observe and utilize the fish and
44 wildlife resources..." in the project area. All allowed recreational
45 activities, including hunting, wildlife observation, and photography,
fall into this classification. All existing trails, parking areas/access
points, sanitary facilities and other site amenities, roads, and
wildlife observation areas will be maintained as part of the
classification.

46
47
48
49 7.1.2.5.4 Inactive and/or Future Recreation Areas

50 There are no inactive recreation areas. Future development to
51 facilitate low-density recreation features should include:

- 52 • further development of nature trails to provide increased
53 opportunities for wildlife observation for persons of varying
54 physical capabilities;

- expansion of ATV trails to address overuse problems and provide access to areas of public interest for persons of varying physical capabilities;
- additional site amenities and sanitary facilities at access/parking areas as required by public use patterns;
- possible primitive camping area(s) with minimal site development and provision of sanitary facilities where appropriate; and
- additional development of the project's interpretive services and outreach program to facilitate public access and increase enforcement of project policies and rules (Appendix J).

7.1.2.6 Easement Lands

USACE will acquire road and/or channel easements, as needed, to provide access to the BDOA. They will be managed in strict accordance with the terms and conditions of the easement estate acquired.

7.2 NATURAL RESOURCES MANAGEMENT GUIDELINES FOR BDOA

7.2.1 Vegetative Management Guidelines

Vegetation resource objectives include passive and active management for various resource needs. This involves management and participation in various stewardship projects for resources. Management activities will be undertaken to provide for this type of resource. Important existing or potential den or cavity nesting trees should be preserved and managed. Attempts should be made to make ample den or nest trees continuously available as a natural and vital component of the forest.

A number of techniques or tools are available that enable resource managers to manipulate vegetation to meet the resource needs. With the use of these tools, the needs of a certain situation at a given location for a specific period of time can be met. Techniques available are discussed in this section, as are guidelines for their utilization. The theory behind the various management techniques, as well as guidelines for their use, are also included in this section. Primarily, techniques that emphasize the principal way of meeting the habitat requirements of target species are stressed. Nonstructural techniques are initially less expensive and require no

1 outlay of continuing maintenance funds. In contrast, structural
2 techniques may be expensive to build and maintain.
3

4 Vegetative management strategies should be realized primarily by
5 providing and maintaining a diversity of age-classes and species
6 compositions, and by identifying potential old-growth emphasis
7 areas, environmentally sensitive areas, and habitat restoration
8 sites. Old-growth forest is essential for preserving biological
9 diversity, given that these areas are those in shortest supply and in
10 greatest endangerment from development. Old-growth ecosystems
11 with stable species composition and large dominant trees are
12 characterized by particular structural and functional attributes.
13 Habitat elements that contribute most to the value of the old-growth
14 forest are large, standing dead trees and fallen decaying logs with
15 tip-up mounds. Large snags provide dens and cavity-nest sites;
16 fallen logs provide resting sites for reptiles and amphibians, and
17 substrates provide habitat for insects and larvae. Other old-growth
18 attributes include overstory and understory plant species diversity,
19 vertical foliage-height stratification (associated with bird species
20 diversity), a complex soil/litter continuum (providing substrates for
21 ground-dwelling and burrowing animals, soil microorganisms, and
22 mycorrhizae), hard and soft mast production (wildlife food sources),
23 ground vegetation (herbs, shrubs, and vines for cover and browse),
24 and canopy gaps of various sizes and ages.
25

26 **Old-Growth Restoration Areas:** Forest management, based on a
27 natural disturbance model, must be supplemented by artificial
28 means, if a diversity of shade-intolerant, hard-mast producing
29 forest species is desired to enhance wildlife habitat values.
30 Forested lands will be managed to favor age classes
31 underrepresented in the area, usually mature and overmature (late
32 successional) age classes, in contiguous tracts where possible.
33 The conversion of some younger stands to mature ones will be
34 accelerated by appropriate silvicultural practices, such as thinning
35 to encourage canopy diversification, enrichment planting of mast-
36 producing species, and partial cutting to create scattered canopy
37 gaps. Natural gap-phase regeneration supplemented by planned
38 cutting cycles would ensure replacement of hard mast producers in
39 late successional bottomland hardwood stands as they approach
40 overmaturity (higher proportion of dying and damaged trees).
41

42 **Intermediate Cuttings:** Intermediate cuttings consist of the
43 removal of selected trees from forest stands during that portion of
44 stand existence not included in the period of regeneration. These
45 are the various cuttings made during development from the
46 reproduction stage to maturity. Cuttings aimed primarily at

32 *Forested lands will*
33 *be managed for old-*
34 *growth where this*
35 *forest condition is*
36 *underrepresented.*

1 controlling stand growth by adjusting stand density are called
2 thinnings. Those conducted to regulate composition by species
3 and improve the quality of very young stands are release cuttings.
4 Cuttings made in older stands for the same purpose are called
5 improvement cuttings.
6

7 Silvicultural theory, and specifically intermediate cutting, proceeds
8 on the basic principle that vegetation on any site tends to extend
9 itself aggressively to occupy the available growing space. Growing
10 space is limited by factors such as available sunlight, water, and
11 inorganic nutrients from the soil. A given piece of land can produce
12 a given quantity of biomass. By the application of intermediate
13 treatments and silviculture, biomass production is concentrated in
14 specifically selected trees. In commercial forest management, the
15 production of a given piece of land is concentrated in those species
16 having valuable wood. When managing for wildlife production,
17 growth is concentrated in those species and individual trees that
18 provide both food and shelter for featured wildlife species. The
19 redistribution of growth potential in forest stands, by regulating the
20 distribution of growing space for the advantage of the existing crop,
21 is perhaps the most commonly used tool in forest management
22 next to the planting of seedlings.
23

24
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28
29 ***Bottomland***
30 ***hardwoods will be***
31 ***managed on a 120-***
32 ***to 200-year rotation.***

24 The history of high grading and agricultural practices has, in many
25 locations, created forest stands of less valuable species of an
26 inferior quality. Trees are often poorly positioned within stands,
27 and optimum use is not made of existing growing space. Forest
28 management practices will largely consist of improvement cuts.
29 With 120- to 200-year rotation for most of the bottomland
30 hardwoods, approximately 8 to 15 thinning/improvement cuts will
31 be made in each stand before areas are possibly regenerated.
32 Long rotations are utilized because many forest-dwelling wildlife
33 species utilize tree cavities for nesting and shelter, and mast is
34 consumed for food. Natural cavities do not customarily begin
35 forming in hardwoods until they reach an advanced age. Long
36 rotations are used for management of wood ducks, songbirds,
37 raccoons, and squirrels in assorted bottomland hardwood habitats.
38

39 **Mast Management:** Mast, particularly acorns and nuts, is a rich
40 source of high-energy food. It is by far the most important source
41 of winter food for squirrels, raccoon, and wood ducks. Population
42 levels, reproductive success, body weight of individuals, and the
43 overall condition of these species are directly related to the annual
44 acorn crop. Mast supplies are variable, but they seldom completely
45 fail.

1 The primary objective of mast management is to produce enough
2 mast to sustain the desired population of a featured species in a
3 particular area. A combination of hard and soft mast producers
4 should be established and maintained, which will produce an even
5 yearly production to the extent possible. Reserve food producers
6 are established and maintained to provide emergency food
7 supplies when hard mast failures do occur.
8

9 Calculations of mast production capability at various stand ages
10 can be used to determine the approximate carrying capacity of an
11 area based on food supply. This procedure can be used to
12 determine if the the supply of mast is a limiting factor for a species
13 or group of species in a particular area. Mast-bearing species can
14 be distributed to meet the ability of the featured species.
15

16 Genetic, environmental, and stand factors determine the mast
17 production capability of a particular area. Different species of trees
18 and shrubs produce considerably different amounts of mast. Tree
19 species of the red oak group are the heaviest producers of acorns.
20 Tree species of the white oak group are quite variable in
21 production, with many nonbearing trees often intermingled with
22 seemingly suitable trees. Weather and soil factors have an impact
23 upon mast production. Extremes in temperature and rainfall affect
24 yearly production within a particular stand, whereas aspect,
25 elevation, and soil productivity cause production to vary from stand
26 to stand. For example, one tree within a stand may be a heavy
27 producer while an adjacent tree has no mast, and one stand may
28 have a good crop, whereas an adjacent stand produces little or no
29 crop. Normally, trees on moist, fertile sites and trees with vigorous
30 expanding crowns produce large crops. Stand densities that allow
31 full crown development favor mast crop production. The initial age
32 for mast production of most tree species is 25 years. Total stand
33 mast production is increased by favoring oaks and hickories in the
34 overstory. Stability of yield results from maintaining a variety of
35 hard mast-producing species.
36

*Oaks and hickories
in the overstory will
be managed for
mast production.*

37 **Management of Openings:** Any management plan to benefit
38 wildlife should provide diversity of vegetation types and age
39 classes. Nature provides this diversity through windstorms,
40 catastrophic fires, disease epidemics, and insect infestations. With
41 management, decisions can be made concerning the interspersion
42 of vegetation types. Diversity is enhanced through creation and
43 maintenance of openings in and near forested areas. Openings
44 may be simply an earlier seral stage of surrounding vegetation, or
45 they may consist of special vegetation such as agricultural crops.
46 Openings may provide food, breeding habitat, nesting cover,

1 brooding habitat, or escape cover. Wildlife openings can also be
2 used to concentrate populations in a given area in order to promote
3 a more complete utilization of the resource or to increase the
4 amount of edge effect.

5
6 The creation and maintenance of openings is a very versatile and
7 frequently used tool in wildlife management. The many techniques
8 available require that a manager have a particular species or
9 species group in mind when the creation of an opening is planned.
10 Several management techniques, such as the planting of powerline
11 and pipeline rights-of-way, have good value to most forest-
12 dependent wildlife species. A program for managing these areas
13 customarily involves fertilizing, seeding, and mowing or
14 bushhogging. The particular mix of seed and cultural treatment is
15 determined by the featured wildlife species or group. Portions of
16 large pipeline and power line rights-of-way can be planted, mowed
17 or bushhogged, and the remainder allowed to revert to brush and
18 sapling stages. The margins of adjacent forested land should form
19 a scalloped pattern to maximize edge effect. Large rights-of-way
20 can be managed to provide patches of vegetation in various stages
21 of succession. The utilization of these types of areas as
22 permanent openings results in less hard mast and fiber production
23 loss because less land is taken out of production. The carrying
24 capacity can be raised by using these lands that are often
25 neglected or left idle. Maintenance and management of pipeline
26 and power line openings in the BDOA will benefit populations of
27 swamp rabbits and various songbird species.

28 29 **7.2.1.1 Primary Management Objectives**

30 Development of forest resources for timber production is not a
31 prime objective of the ABFS, as specified in the 1982 Final EIS.
32 Environmental features, such as the WMUs and the public access,
33 flood control environmental protection features were designed to
34 preserve existing conditions, and preclude any significant losses in
35 any forest habitat type in the ABFS during the project life. In
36 recognition of the need for preserving certain areas where natural
37 processes alone can operate, timber yield is not a consideration on
38 USACE public access fee lands, except as a by-product of habitat
39 restoration and maintenance. A more complete Forest
40 Management plan is presented in the OMP.

**Forest resources on
USACE public
access fee lands
are adaptively
managed with an
emphasis on
ecosystem
management.**

41
42 Management of forest resources on USACE public access fee
43 lands will be based on adaptive management concepts, with a
44 primary emphasis on ecosystem management rather than on
45 development and implementation of rigid silvicultural prescriptions.
46 Natural disturbance regimes will be incorporated as part of the

1 adaptive plan for suitable sites. The adaptive approach is a flexible
2 one based on developing stand treatments by analyzing baseline
3 data, followed by research and monitoring of the ongoing, long-
4 term results of methods implemented in the field. Original
5 recommendations are adjusted, as needed, to achieve revised
6 objectives. The silvicultural practices recommended are aimed at
7 enhancement of wildlife habitat.
8

9 **7.2.1.2 Forest Management Guidelines**

10 Implementing management practices to meet the following specific
11 guidelines will attain broad management goals:
12

- 13 • Improve erosion control by maintaining adequate forest and
14 herbaceous cover crops and using appropriate silvicultural
15 practices.
16
- 17 • Improve or maintain interspersion of forest successional
18 stages and community types.
19
- 20 • Restore converted or deteriorated areas to appropriate
21 forest types.
22
- 23 • Maintain adequate snags and other nesting cavities for
24 forest-dwelling species.
25
- 26 • Maintain suitable existing forest types.
27
- 28 • Control insects, disease, and wildfire, and restore weather-
29 damaged forest stands, as necessary.
30
- 31 • Manage forest stands to ensure minimal impact on other
32 natural resources, such as aquatic ecosystems.
33
- 34 • Provide and maintain significant forest resource areas
35 supporting locally rare species of plants and animals.
36

37 **7.2.1.3 Public Use Considerations Related to Vegetation Management**

- 38 • Project allocated resources will be managed to meet the
39 following public use objectives:
40
- 41 • Provide a diversity of habitat and forest types for consumptive
42 and non-consumptive recreational pursuits.
43
- 44 • Provide practical, safe, and adequate access to forested lands
45 for recreational purposes.

- Provide educational and research opportunities.
- Maintain or improve the aesthetic character of project lands.

7.2.1.4 *Natural and Unique Areas*

Certain areas within the forested acreage may be set aside for this purpose. Once these areas are identified, maps will be inserted into the OMP, showing their locations. The primary objectives of the "Natural and Unique Areas" are:

- to assure the preservation of a variety of significant areas for public use that, when considered together, illustrate the diversity of the natural environment.
- to preserve valuable environments that are essentially unmodified by man.
- to provide research and educational opportunities for scientists and others in the observation, study, and monitoring of the environment.
- to contribute to the National effort to preserve a full range of genetic and behavior diversity for native plants and animals, including endangered or threatened species.

The only management that may occur within these areas is the removal of water impounded by beaver activity or to stop the spread of insect and/or disease outbreaks, if they threaten the integrity of other managed property.

7.2.2 **Fish and Wildlife Management Guidelines**

7.2.2.1 *Primary Management Objectives*

Wildlife and fisheries resources are managed in accordance with PL 85-624, ER 1130-2-540, ER 1165-2-400.

A diversity of vegetation and habitat types exists within BDOA. The large contiguous forest, agricultural and former agricultural lands, and aquatic resources provide suitable habitat for a wide variety of wildlife and fish species. Wildlife and fisheries resources are managed in accordance with PL 85-624, ER 1130-2-540, and ER 1165-2-400, whereby resources are utilized in a multiple-use concept, so that future generations can enjoy their natural heritage. Non-consumptive management practices will receive equal consideration with those practices for consumptive game and fish management. Special consideration will be given to endangered/threatened species and species of concern, as listed in Sections 2.1.6.4, 2.1.6.5, and 2.1.7.3 of this document, when manipulating habitat.

1 **7.2.2.2 Wildlife and Fisheries Management Guidelines**

2 Implementing management practices to meet the following specific
3 objectives will attain broad management goals:

- 4 • Improve or maintain interspersion of plant successional
5 stages, community types, and open lands.
- 6 • Restore some converted areas to native vegetation and
7 improve wildlife cover.
- 8 • Maintain adequate nesting cavities for animal species.
- 9 • Maintain existing wetland habitats and restore converted
10 wetlands, as appropriate.
- 11 • Restore native populations, as appropriate.
- 12 • Manage lands leased for cropland, pasture, grazed woods,
13 or haylands to ensure minimal impact on natural resources.
- 14 • Conduct O&M activities in a manner to minimize impact on
15 land and aquatic-based habitats and inhabitants.

16 **7.2.2.3 Existing Management Agreements with LDWF**

17
18
19
20
21
22
23
24
25
26
27
28
29
30
31 **LDWF manages**
32 **BDOA through**
33 **licenses with**
34 **USACE.**

In the absence of a PPA, the BDOA has been licensed to LDWF, in accordance with ER 405-1-12. Pursuant to those license agreements, LDWF is responsible for the fish and wildlife management of this land. They have provided USACE with AMPs that outline their management strategies. These management efforts are coordinated with the ABFS PO and approved by the OM. BDOA is separated into two license areas. LDWF has a 25-year license (DACW29-3-94-10) for approximately 2,400 acres on the eastern portion of the BDOA, referred to as the South Farm area. Management activities on this area consist of reforestation of abandoned agricultural land, the development of a moist soil impoundment for migratory waterfowl, organized hunts, and enforcement of State game laws. The remaining acreage is being managed under a yearly license agreement (DACW29-3-91-5). The management activities on this area include organized hunts, wildlife food plots, woodcock and turkey research, and enforcement of State game laws. It is noted that both of these licenses will be terminated by the parties when the PPA for the public access feature is executed.

1 USACE and the non-Federal sponsor will develop and sign PPA
2 that will detail the management responsibilities for this feature in
3 accordance with the statutory and programming authority therefor.
4

5 **7.2.2.4 Resource Management Compartments**

6 The purpose for delineating management compartments in the
7 project master plan is to provide general resource management
8 guidelines for specific areas. Natural and geographic features, as
9 well as habitat types, were primary factors in defining boundaries to
10 separate the compartments. Items considered in the formulation of
11 management recommendations include aesthetics, disease
12 problems, soil erosion potential, wildlife carrying capacity, unique
13 resources, management potential, and manpower and funding.
14 More specific management objectives and prescriptions will be
15 developed in the annual OMP. The delineation and guidelines for
16 compartments should be adjusted annually during update of the
17 project OMP as new information, such as forest inventory data, or
18 completed improvements are obtained.
19

20 BDOA has been separated into three management compartments
21 (see Appendix C, Figure 9). Brief descriptions of the three areas
22 are provided below.
23

24 7.2.2.4.1 Bayou Des Ourses (BDO) Compartment

25 This compartment consists of scattered blocks of land that lie
26 between the East Protection levee and Atchafalaya River. These
27 lands, combined with
28 adjacent LDWF and
29 USFWS lands, and other
30 USACE lands make up the
31 SWMA, which is
32 sometimes referred to by
33 the partnering agencies as
34 the Sherburne Complex
35 (Appendix C, Figure 10 and
36 Photograph 7-3). These
37 lands are managed in
38 cooperation with LDWF,
39 the principal managing
40 agency under license
41 agreement DACW-29-3-91-5. Lands owned in fee within this
42 compartment comprise a total of 13,210 acres.



Photograph 7-3. USACE fee lands managed as part of SWMA.

1 The BDO Compartment is generally flat and characterized by
2 numerous bayous and ridges. Gentle slopes exist rising east and
3 west from the main Big Alabama Bayou with the area furthest east
4 having higher elevations. The western portion of the compartment
5 is comprised of bayous, lakes, and other low-lying areas. Bayou
6 Des Ourses Swamp and Bayou Des Glaises Swamp can be found
7 in this compartment and these low-lying areas stay inundated
8 approximately 6 months out of the year. Forest composition and
9 cover types are directly related to the elevation levels at which they
10 occur. Areas of lower elevation are forested swamp. Baldcypress,
11 willow, and buttonbush dominate these areas that are of elevations
12 below 15 feet mean sea level (msl). Above this level, the forest is
13 composed of bottomland hardwoods with a variety of oak species
14 and green ash dominating.

15
16 Hunters of upland bird, waterfowl, small game, and deer utilize the
17 area on a seasonal basis. LDWF has a daily-use permit system
18 that all users must adhere to while on the area.

19
20 Resource management guidelines for this compartment include:

- 21
22 • Identify and maintain adequate nesting cavities for animal
23 species.
- 24
25 • Maintain existing wetland habitats and restore converted
26 wetlands as appropriate.
- 27
28 • Implement terrestrial and aquatic weed monitoring and
29 suppression programs.
- 30
31 • Maintain annual wildlife food plots.
- 32
33 • Conduct forest inventories and improve forest composition
34 accordingly.
- 35
36 • Monitor, evaluate, and improve habitat for principal game
37 species.
- 38
39 • Implement nuisance animal control measures as necessary.
- 40

41 7.2.2.4.2 South Farm Compartment

42 This 2,534-acre unit is located in the southeast portion of SWMA
43 within Iberville Parish (see Appendix C, Figure 11 and
44 Photograph 7-4). It has been separated from the Bayou Des
45 Ourses compartment due to the physical separation of the area
46 and the moist soil management of the area. Prior to Federal

1 ownership of this property, which
2 occurred in 1989, lands were
3 used for rice and soybean
4 production. Since then, they
5 have been developed and
6 managed as moist soil
7 impoundments. Currently, the
8 LDWF manages the unit under a
9 25-year license agreement
10 (DACW-29-3-94-10).



11 **Photograph 7-4. South Farm**
12 **compartment entrance.**

13 The South Farm area is
14 generally flat and characterized by a series of man-made levees
15 and drainage structures creating 1,507 acres of 12 multiple sub-
16 compartments. Three naturally forested areas that exist in the unit
17 occur at elevations between 10 and 16 feet msl. The annual water
18 regimen in this compartment is controlled through a series of gated
19 culverts, levees, and pumps. Beginning in late October, water is
20 pumped from deep-water wells into the moist soil units. Maximum
21 water levels are reached by the end of November. A slow draw-
22 down is then conducted beginning in late June. Drawn-down is
23 usually completed by mid-August, leaving enough water to keep
24 the soils moist.

25 Forest composition in these areas consists of a mixture of
26 bottomland hardwood and forested swamp species. One of these
27 forested areas, located in the southwesternmost portion of the
28 compartment, is managed as a green tree reservoir. Water is held
29 for this reservoir beginning in November throughout the winter
30 months and is drawn down slowly starting in March for the summer
31 months, promoting the growth of more water-tolerant species.
32 From 1995 to 2000, reforestation efforts were conducted in the
33 northern half of the compartment. Approximately 652 acres were
34 planted with nutall oak, overcup oak, willow oak, persimmon, sweet
35 pecan, and baldcypress. Hunters of waterfowl, small game, and
36 deer utilize the area on a seasonal basis. Alligator trapping is
37 permitted with appropriate permits and other trapping is allowed if
38 access permission is obtained. Additionally, recreational fishermen
39 use the aquatic sections of this compartment.

40
41 This compartment falls under the rules and regulation of SWMA
42 due to the license agreement. Hunting is allowed during permitted
43 youth deer and lottery duck hunts. Recreational crawfishing is
44 allowed in the compartment from April 1 to July 31. Crawfish
45 harvest is limited to 100 pounds per vehicle per day.

1 Resource management guidelines for this compartment include:
2

- 3 • Work closely with LDWF to balance the competing interests
4 of crawfishing, waterfowl hunting, and non-consumptive
5 recreation (birders and wildlife watchers).
6
- 7 • Continue to maximize area diversity by implementing a moist
8 soil regimen.
9
- 10 • Implement aquatic and terrestrial vegetation monitoring and
11 suppression programs.
12
- 13 • Monitor, evaluate, and improve principal game species.
14
- 15 • Implement nuisance animal control measures as necessary.
16

17 7.2.2.4.3 North Farm Compartment

18 This unit encompasses 715 acres located in Iberville Parish just
19 north of the South Farm compartment (see Appendix C, Figure 12).
20 It has also been separated from the Bayou Des Ourses
21 compartment. Prior to Federal ownership, which occurred in 1989,
22 lands were used primarily for agriculture and were planted in rice
23 and soybean. This compartment has two distinct sections for
24 management purposes. The eastern portion (approximately 290
25 acres) is now under a three-year agriculture lease with a private
26 farming entity. The remaining 425 acres in the western portion are
27 managed as a large moist soil unit to provide habitat for waterfowl
28 and migratory birds (Photograph 7-5). Currently, the LDWF
29 manages the unit under
30 a 25-year license
31 agreement (DACW-29-3-
32 94-10). Public access to
33 this compartment is very
34 difficult. Individuals must
35 approach the area by
36 boat on Bayou Black
37 then walk approximately
38 0.5 mile to reach this
39 unit. Vehicular access to
40 the compartment can
41 only be gained by
42 crossing private land. Government employees have an access
43 easement but this easement, does not provide public access to the
44 area.



Photograph 7-5. Managed moist soil unit on BDOA.

1 The North Farm compartment is generally flat and characterized by
2 a series of man-made levees and drainage structures creating a
3 large moist soil impoundment area. The annual water regimen in
4 this compartment is controlled through a series of gated culverts,
5 levees, distribution canals, and one deep-water well pump similar
6 to that of the South Farm. There are slightly different water
7 management regimens for the east and west sections. In the
8 western section beginning in late October, water is pumped from a
9 deep-water well into the western moist soil impoundment.
10 Maximum water levels are reached by the end of November. A
11 slow draw-down is then conducted beginning in late June. Draw-
12 down is usually completed by mid-August, leaving enough water to
13 keep the soils moist. In the eastern agricultural section, water is
14 held starting in late November, reaching its maximum level in
15 December. Water is then drained in May to prepare for planting
16 season. Agricultural crops typically planted are soybeans and corn.
17

18 There are two small naturally forested areas in the western portion
19 of the unit. One is located in the southwesternmost corner and is a
20 wading bird rookery. Bald eagles are often sighted on or near the
21 North Farm compartment. The forest composition in these areas
22 consists of a mixture of bottomland hardwood and forested swamp
23 species. Two other areas have been reforested in the
24 compartment. The North Farm compartment limits duck hunting to
25 a limited number of permitted youth hunts annually. Currently,
26 three youth lottery waterfowl hunts per year are allowed on the
27 North Farm Compartment. As a result, this area provides one of
28 the few waterfowl resting areas in the northern portion of the
29 Atchafalaya Basin. A rookery is located in the southwest corner of
30 this compartment. Alligator trapping is permitted with appropriate
31 permits, and other trapping is allowed if access permission is
32 obtained.
33

34 Resource management guidelines for this compartment include:

- 35 • Continue to maximize area diversity by implementing a moist
36 soil regimen.
- 37 • Implement aquatic and terrestrial vegetation monitoring and
38 suppression programs.
- 39 • Monitor, evaluate, and improve principal game species.
- 40 • Monitor, evaluate, and improve principal game species.
- 41 • Monitor, evaluate, and improve principal game species.
- 42 • Monitor, evaluate, and improve principal game species.
- 43 • Monitor, evaluate, and improve principal game species.
- 44 • Implement nuisance animal control measures as necessary.

- Continue to offer agriculture lease and promote planting different crops to promote diversity.

7.2.3 Recreation

Recreation facilities development at BDOA is minimal. The area is managed primarily for natural resource-oriented recreational uses in the Atchafalaya Basin, and only minimal facility development has been undertaken to support a natural resource-oriented recreational experience. This is not meant to imply that recreation is discouraged but to underscore that the resource itself is the independent variable against which all recreational potentials are measured. If a recreational activity can be supported and that activity does not degenerate or pose a serious threat to the natural resource base, and if the activity does not exclude the traditional recreational activities, namely consumptive uses, then attempts to accommodate the proposed activity will be taken within funding and management capabilities.

Erection of signs, interpretation, trail improvement, and cooperative work with volunteer organizations will be conducted, in addition to habitat management, in order to meet the objectives of providing high-quality recreation and environmental educational experiences for the public at BDOA (Photograph 7-6). The ABFS allocated resources will be managed to meet the following public use objectives:



Photograph 7-6. Example of signage on BDOA.

- Provide high-quality wildlife and fish-oriented recreation.
- Provide practical, safe, and adequate access to wildlife and fish management areas suited for recreation.
- Provide educational and research opportunities.
- Maintain or improve the aesthetic character of ABFS Project lands.

- Provide and maintain significant wildlife and fish resource areas, including wetlands, and areas supporting locally rare species of plants, animals, fish, and unique habitat.

7.2.3.1 Public Hunting and Fishing

The primary recreational activities that occur on the public access fee lands at BDOA are hunting and fishing. Hunting regulations and seasons are coordinated by USACE field personnel and LDWF and are a part of the AMP.

USACE and LDWF establish limits and control on crawfishing on BDOA lands and waters to balance multiple use.

Crawfishing is a popular activity, and USACE allows the recreational harvest of crawfish on BDOA. Alligator hunting is the only commercial activity allowed on BDOA. Limits and controls on crawfishing on BDOA lands and waters are coordinated between LDWF and USACE in order to balance recreational crawfishing interests, public hunting, and other visitor activities.

There are fishing opportunities on USACE public access lands in BDOA. The nearest boat access is located on the Atchafalaya River and at Big and Little Alabama bayous. Many quality fishing areas are found throughout the ABFS. Big and Little Alabama bayous, Bayou Des Glaises, and Bayou Des Ourses offer popular fishing locations, while passing near or through parcels of BDOA.

7.2.3.2 Non-Consumptive Recreation

Non-consumptive recreational activities, such as wildlife observation and photography, are offered by existing project facilities and management, and there is significant potential for growth in these areas of visitor interest. Additional development of nature trails, viewing platforms, and other facilities/areas that can provide for these activities are envisioned for the future, subject to funding (Photograph 7-7).



Photograph 7-7. Viewing platform completed in 2010 on the South Farm compartment.

At present, camping is not allowed in BDOA; however, several private developed campgrounds exist in the immediate vicinity, and the LDWF provides two primitive camping areas on LDWF lands in

1 the SWMA. BDOA lands have the potential to provide primitive
2 camping site(s) to support both consumptive and non-consumptive
3 recreational activity. The possibility for primitive camping area(s)
4 on BDOA lands should be investigated and implemented in
5 consultation and partnership with LDWF.
6

7 Some all-terrain vehicle trails exist but are used primarily to provide
8 interior access. They are mainly used seasonally by hunters.
9 There are trails and areas where hiking, horseback riding, and
10 nature walks occur, but these activities are limited in scope.
11 Special events, such as dog field trials, are accommodated through
12 use or activity permits granted by the ABFS PO.
13

14 **7.3 PLAN OF DEVELOPMENT AND DESIGN CRITERIA FOR BDOA**

15 **7.3.1 Conceptual Plan**

16 The conceptual plan for this area is to minimize development while
17 maximizing public opportunity to observe and utilize the fish and
18 wildlife resources in BDOA.
19

20 **7.3.2 Facilities/Actions Proposed for Immediate Development**

21 The primary need that the USACE has regarding its public access
22 fee lands on BDOA is the acquisition of adequate road easements
23 and the construction and/or improvement of roads. Currently,
24 public road access does not exist to the North Farm Compartment.
25 Public use of the North Farm Compartment is restricted due to this
26 lack of access. Additionally, the existing roads and trails to other
27 BDOA lands are limited and substandard for road vehicles.
28 Associated with this limitation is the need to improve interior
29 circulation roads to sustain all-weather use from standard road
30 vehicles (not four-wheel drive).
31

32 **7.3.3 Future Development Under the Public Access Feature**

33 Future developments under the public access feature should
34 include:
35

- 36 a) further development of nature trails to provide increased
37 opportunities for wildlife observation for persons of varying
38 physical capabilities;
- 39 b) expansion of ATV trails to address overuse problems and
40 provide access to areas of public interest for persons of
41 varying physical capabilities;
42
43

- 1 c) additional site amenities and sanitary facilities at
2 access/parking areas as required by public use patterns;
3
4 d) possible primitive camping area(s) with minimal site
5 development and provision of sanitary facilities where
6 appropriate; and
7
8 e) additional development of the project's interpretive services
9 and outreach program to facilitate public access and
10 increase enforcement of project policies and rules.
11

12 Specific public access improvements that may be implemented,
13 contingent upon funding constraints and management concerns,
14 include:
15

- 16 • Atchafalaya River/Whiskey Bay Pilot Channel/Section 120
17 Road
18 Observation structure
19 Parking area
20 Foot trail
21
- 22 • Big Alabama Bayou Area
23 New Parking Areas (4) each with pier/platform
24 Lifejacket loaner program (unmanned) (Alabama Bayou)
25
- 26 • South Farm
27 Improvements to parking area
28 Shelter building
29 Water well/pump
30
- 31 • Interpretive Services elements
32 Signs on Interstate
33 Kiosks at all parking areas
34 Sign at beginning of hiking trails showing route in detail
35 Better brochures for hiking trails
36 Signs/carsonites along hiking trails showing proper way
37

38 **7.4 SPECIAL PROBLEMS AND CONSTRAINTS FOR BDOA**

39 **7.4.1 Public Health and Safety Concerns**

40 In addition to the safety issues discussed earlier in this Master
41 Plan, several public health and safety concerns deserve attention.
42

1 **7.4.1.1 Water Quality**

2 At present, testing of the project’s waters is only conducted in
3 conjunction with other studies. As additional opportunities are
4 created for the visiting public to access the project’s waters, state
5 standards for primary and secondary contact recreation should be
6 met. A comprehensive program of water quality testing of project
7 waterways should be implemented. The program should focus on
8 public health parameters but also provide information of value in
9 managing the project’s natural resources. Corrective actions
10 and/or use restrictions should be employed to address any
11 identified problems.
12

13 **7.4.1.2 Potential Hazardous, Toxic, and Radioactive Wastes (HTRW) Concerns**

14 No HTRW problems are presently known to exist on project lands
15 or waters; however, a potential concern centers on previous oil and
16 gas exploration activity on the project lands. If necessary, remedial
17 actions and/or precautions for project visitors and project personnel
18 will be implemented if HTRW hazards are identified.
19

20 **7.4.2 Law Enforcement**

21 Law enforcement has not proved to be a major problem owing in
22 part to the distinct division of responsibilities and cooperation of
23 separate governmental agencies. Enforcement of civil and criminal
24 law is responsibly handled by the local Parish Sheriff’s office.
25 Game and fish laws are enforced by LDWF and the USFWS, and
26 Title 36 CFR Chapter 327 regulations are enforced by USACE field
27 personnel with citation authority. All three entities cooperate and
28 notify each other of suspected violations that are under their
29 respective authorities. A Department of the Army license
30 (DACW29-4-96-73) issued to USFWS to “perform and conduct law
31 enforcement activities on the lands hereinbelow described as part
32 of the ANWR, in cooperation with LDWF:.” This license covers “all
33 the fee-owned land acquired by U.S. Army Corps of Engineers on
34 behalf of the United States of America, which forms a part of the
35 Atchafalaya Basin Floodway System, Louisiana, project.” This
36 license gives LDWF and USFWS the authority to enforce CFR Title
37 50 on USACE fee-owned lands. This license, along with the
38 coordination and cooperation of all these agencies, provides
39 excellent law enforcement coverage of the entire ABFS project.
40

41 **7.4.3 Natural Resource Hazards**

42 Natural resource hazards exist, ranging from poisonous snakes to
43 falling trees. There are no unique hazards that are different from
44 any other forested areas in the southeast United States. The only
45 added hazard could be in operation of USACE flood control

1 structures within the ABLP that could result in the
2 evacuation/removal of all visitors. This is a circumstance for which
3 warnings and emergency operations systems have been
4 developed.
5

6 **7.4.4 Endangered/Threatened Species**

7
8
9
10 ***USACE consults***
11 ***with USFWS for***
12 ***management***
13 ***actions that may***
14 ***affect Louisiana***
15 ***black bear or its***
16 ***designated Critical***
17 ***Habitat.***

The Louisiana black bear and the American alligator currently are the only Federally listed species protected by the Endangered Species Act that are present (or potentially present) on ABFS lands. According to the final listing for the Louisiana black bear as a threatened subspecies (USFWS, 1992), maintenance of bottomland hardwood forest habitats is a critical conservation measure. The protection of actual and candidate den trees along water bodies, while not essential, also is important to conservation of the species. Designated black bear critical habitat includes forested areas of the Atchafalaya Basin Floodway (south to U.S. Highway 90) and of the Morganza Floodway (USFWS, 1993). Portions of BDOA are located within designated Critical Habitat and management actions that may adversely affect the black bear or adversely modify designated Critical Habitat for the black bear must be consulted on with USFWS.

23 **7.4.5 Archaeological and Cultural Resources**

24 Archaeological resources are an irreplaceable part of the Nation's
25 heritage and therefore must be protected to prevent their loss and
26 destruction. The OMP discusses the management of such areas.
27 It is possible that some disruption of an unknown site could occur in
28 connection with forest management practices. Certain measures
29 shall be taken to help prevent any such occurrences. These
30 actions include restriction of logging operations during wet weather
31 conditions to prevent soil disturbance and erosion, minimizing soil
32 disturbance during construction of roads, trails, and firebreaks, and
33 safeguarding any newly discovered archaeological sites or relics.
34

35 **7.4.6 Aesthetics**

36 Some habitat management treatments, however necessary to
37 achieve management goals, may be viewed by some members of
38 the general public as offensive. Some treatments impact the
39 aesthetic qualities of the forest more than others, and different
40 people look upon the results of these practices differently.
41 "Aesthetic standards vary among men. Some will be disturbed by
42 any harvest of mature timber, rejecting arguments that the trees
43 are likely to be blown down or to succumb to insects or disease
44 within a few years in any event. Others will be less disturbed, or
45 not disturbed at all, by the site of the harvested area; they will find a

1 newly established and thriftily-growing forest aesthetically more
2 pleasing than the old one, which in their eyes had passed its prime.
3 Measurement of social and cultural acceptability is difficult, in part
4 because of the variations among groups within the total society.
5 Moreover, what is not acceptable may become so tomorrow, and
6 what is acceptable now may be rejected at some future date. But,
7 the forest manager who neglects social and cultural attitudes does
8 so at his peril. Programs that are physically feasible and
9 economically sound may founder on public attitudes" (Clawson,
10 1975).

11
12 Forest management practices can enhance the forest as a visual
13 resource. "Foresters can manipulate stands of trees expressly to
14 increase the enjoyment of persons passing through. A person may
15 derive pleasure from the noticeable changes in spatial qualities as
16 he moves from one stand to the next. The transitions from closure
17 to openness, from darkness to brightness, from high canopy to low,
18 evoke stimulating visual impressions. One extreme quality may act
19 as a foil to intensify awareness of the opposite quality" (Brush,
20 1976).

21
22 The impact on aesthetics will be considered in all forest
23 management decisions, and sincere attempts shall be made to
24 minimize any adverse impacts as much as practicable. Certain
25 cutting areas can be selected for use over those more likely to
26 evoke negative public reaction but which accomplish essentially the
27 same results. Particular attention will be given to those areas that
28 receive relatively heavy public use, such as navigable waterways,
29 public access roads, parking areas, boat launch facilities, and
30 interpretive trails. An aesthetic zone bordering all major waterways
31 is in place, and stands within the zone will be managed to protect
32 and enhance their scenic qualities. If possible, reforestation
33 activities will be planned to shield timber cut areas from public view.
34

35 **7.4.7 Forest Openings**

36 Until inventory data is compiled and forested areas are better
37 defined, there is insufficient data to determine if permanent forest
38 openings or a planned cycle to provide continuous openings are
39 needed. The planned forest management activities will create
40 temporary openings throughout the managed forest acreage, and
41 this may be sufficient for this type of habitat requirement. Also,
42 some permanent openings may be maintained in agricultural land
43 scheduled for reforestation. As data is compiled, this section will
44 be updated.

1 **7.4.8 Insect and Disease Control**

2 Many hardwood stands, because of stress brought about by
3 overstocked conditions, flooding, drought (Broadfoot and Toole,
4 1958), overmaturity, fire, lightning, etc. (Houston 1971), have been
5 secondarily attacked by a variety of insect pests. Insects seldom
6 kill hardwood trees, but they cause loss of growth and further
7 decline in vigor. Numerous diseases in several different categories
8 occur on hardwood trees.

9
10 The most practical way to control insects and diseases is the
11 prevention of injuries (fire, logging, etc.) and the promotion of stand
12 conditions favoring healthy and vigorous trees that are more
13 resistant to infestation (Rexrode 1971). The goal is to maintain
14 insect populations at suitable levels to provide an adequate supply
15 for the various wildlife species that feed upon them, while at the
16 same time holding habitat losses at acceptable levels.

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SECTION 8.0
INDIAN BAYOU AREA PUBLIC ACCESS LANDS



8.0 INDIAN BAYOU AREA PUBLIC ACCESS LANDS

8.1 IBA LAND ALLOCATIONS AND CLASSIFICATIONS FOR DEVELOPMENT AND RESOURCE MANAGEMENT

The lands encompassing the IBA consist of approximately 28,500 acres acquired by USACE in support of the public access feature of the ABFS (Photograph 8-1). These lands lie between U.S. Highway 190 in the north and I-10 in the south (Appendix C, Figure 13). They are roughly bounded on the east by the Atchafalaya River and the west by the West Atchafalaya Basin Protection Levee. With purchase of the St. Martin Land property in 2001, the IBA includes the northern portion of the impounded Henderson Lake, that portion north of I-10.



Photograph 8-1. Indian Bayou Area entrance sign.

Road access to the IBA is available on the eastern boundary via Louisiana Highway 105 (LA 105), which parallels the river and extends in a southerly direction from U.S. Highway 190. South of Krotz Springs, LA 105 continues for 3.3 miles to its intersection with Parish Road 4-20-1. From this point south through its intersection with I-10, it is known as Parish Road 395 or West Atchafalaya Levee Road and is not maintained by DOTD. On the west side of the IBA, North Henderson Levee Road (running on the west side or outer side of the West Atchafalaya Basin Protection Levee) extends north from the intersection of LA 352 south of Henderson to a point north of the intersection with Parish Road 3-55-3. Parallel to North Henderson Levee Road, Spillway Road runs along the levee top from north of U.S. 190 to south of I-10.

This section of the Master Plan is limited to classifications and management guidelines that are specific to the IBA. Interspersed in the property are private in-holdings and easement lands acquired by USACE for the flood control and environmental protection features of the ABFS. These easements are not addressed in this section. Management concerns applicable to the easements are contained in Section 10.

1 **8.1.1 IBA Land Allocations**

2 As stated in Section 6, there are four distinct project allocations:
3 Operations, Recreation, Fish and Wildlife Management, and
4 Mitigation.

5
6 The Operations land allocation is applicable to all IBA lands. The
7 remaining three allocations do not apply.
8

9 **8.1.2 IBA Land Classifications**

10 Using the Land Classification System for Development and
11 Resource Management, the following classifications have been
12 made for IBA (see Appendix C, Figure 8).
13

14 **8.1.2.1 Operations**

15 At this time, Operations lands at the IBA are extremely limited. At
16 present, there is a fenced equipment storage area and metal
17 warehouse compound of approximately 2 acres set aside for the
18 purpose of storing equipment and vehicles necessary to operate
19 and maintain the IBA. In order to address the most pressing project
20 need for improvement of the natural resources management of the
21 IBA and the remainder of the ABFS project, there is an urgent
22 requirement to designate and utilize a small parcel of the project
23 lands under the operations classification to construct a fully
24 functional project office. At present, the temporary PO is located
25 off-project in leased office/warehouse space in Port Barre, LA,
26 some 30 to 45 minutes away from the project lands. This remote
27 office location is a significant barrier to the effective management
28 and development of the IBA public access lands, as well as the
29 ABFS project's other public access lands and project features.
30

*The current PO is
located 30 to 45
minutes from
project lands.*

31 The primary responsibilities of the manager and staff of the ABFS
32 project are to maintain the project's flood control function, facilitate
33 and support public access of the public lands and waters of the
34 ABFS, and provide surveillance and control of public activities in
35 order to protect the project's resources and promote visitor safety.
36 Overlapping with the public access mission are the staff's
37 responsibilities to provide for Federal stewardship of the project's
38 natural resources and environmental values. The accomplishment
39 of these important responsibilities is significantly hindered by the
40 remote office location. A brief summary of the problems
41 associated with the remote project office includes:
42

- 43 • reduced staff presence on the project lands;
- 44
- 45 • reduced effectiveness in enforcement of project rules;

- reduced ability to assist visitors and observe their activities;
- reduced surveillance of project lands and waters;
- greatly increased response time for emergencies; and
- much staff time wasted in travel between project and office.

Construction costs associated with a new PO would be 100 percent Federally funded.

The proposed PO should be located in the southeastern portion of the IBA in proximity to the state’s Atchafalaya Welcome Center and will include office space for project staff, equipment storage and maintenance facilities, and a project information center (Type C under USACE guidelines). Since this is an essential first-cost component of the public access feature, the cost of construction will be 100 percent Federal. The cost of O&M will be included in the Federal share for O&M for the public access feature. This project office is not part of the recreation feature of the ABFS. Approval of this master plan document is considered sufficient for authority to move forward with design and construction of the PO, subject to the availability of annual project funding.

A more complete discussion of the need and rationale for the design and construction of a project office on the public access lands at the IBA is provided in Appendix K.

8.1.2.2 Recreation

There are no recreation classifications at IBA. There is no intensive recreation development on the public access lands of the IBA, and none is envisioned in the future.

8.1.2.3 Mitigation

There are no officially classified mitigation lands in the IBA. Portions of the IBA could be used for off-site mitigation banking; however, these sites would be managed in a manner consistent with the other land classifications used.

8.1.2.4 Environmentally Sensitive Areas

8.1.2.4.1 Ecological Resources

Bayou Fordoche, encompassing 4000+ acres within the IBA, was designated a State Natural Area on September 26, 1997 (see Appendix C, Figure 13). A copy of the designation for the Bayou Fordoche Area is provided as Appendix L. Although consultation will take place for management activities listed below, the final management decision lies with the District Engineer. This

1 designation provides for the following considerations and
2 guidelines:
3

- 4 • In general, no timber removal, including salvage and
5 sanitation cuts, will be allowed.
6
- 7 • Disease and insect outbreaks within the natural areas may
8 be controlled using agreed-upon methods after consultation
9 among the USACE, Louisiana Nature Conservancy (LNC),
10 and LDWF.
11
- 12 • Every feasible effort should be made to ensure that disease
13 and insect outbreaks external to the natural area be
14 prevented from entering the natural area.
15
- 16 • No other mechanical disturbances that may disrupt the
17 vegetative/soil surface layer, including disking, plowing, food
18 plots, etc., will be in a natural area. Off-road vehicles (ORV)
19 and ATVs may be allowed only on designated routes after
20 consultation between USACE, LNC, and LDWF. ORVs and
21 ATVs may be used throughout the area for management
22 purposes.
23
- 24 • Where natural area boundaries are formed by streams, a
25 100-foot-wide belt of forest (or project boundary) on the side
26 of the stream opposite the natural area should be
27 considered part of the natural area and managed as such.
28
- 29 • Mineral exploration cannot be prohibited, but the ABFS PO
30 will coordinate with production and exploration activities to
31 hopefully minimize adverse impacts.
32
- 33 • Any new transmission lines (power lines, pipelines, etc.) are
34 to be strongly discouraged in a natural area.
35
- 36 • No livestock grazing is allowed.
37
- 38 • If beaver populations reach a level considered damaging to
39 the timber resource of natural areas, trapping and removal
40 should be conducted.
41
- 42 • Removal and control of all exotic plant species (e.g.,
43 Japanese Honeysuckle [*Lonicera japonica*], Chinese tallow
44 trees [*Sapium sebiferum*]) are encouraged.

- Limited hiking trails are permitted, but no wider than 5 feet. Every attempt should be made to make trails blend naturally with the environment.
- Hunting is allowed within natural areas. Hunting dogs and temporary blinds will be allowed, in accordance with state regulations, as they pertain to wildlife management areas.
- Crawfishing and fishing are allowed within natural areas, in accordance with state regulations.

Every effort will be made to maintain the natural hydrology of local waterways. Bayou Fordoche is a major drainage for the Bayou Courtableau Outlet Structure. USACE reserves the right to clear snags from this waterway in order to maintain the integrity of the ABFS and its surrounding projects and also to provide safe passage of boats for public access. After consultation among USACE, LNC, and LDWF, some activities may be conducted along waterways within the natural area in order to fulfill USACE’s mission throughout the ABFS. In addition, this being a floodway, the water levels will be regulated by USACE.

8.1.2.4.2 Cultural Resources

One cultural resources site is known to exist on the IBA.

Only a portion of the IBA has been physically surveyed for cultural resources. As discussed in sections 2 and 4 above, several recorded prehistoric sites have been identified in proximity to IBA lands, and one site eligible for the National Register of Historic Places is located within the IBA boundaries. This is the Henderson Lake site (16SM95) in St. Martin Parish. The sensitive Henderson Lake site is discussed further below. The Bayou Fordoche Mounds site (16SL34) was formerly identified in St. Landry Parish, but archeological investigations conducted in 2006 and 2009 determined that the mounds in question were not prehistoric in origin but were the result of twentieth-century land use. The mounds are no longer considered cultural resources. This former site is also discussed further below. The site associated with the historic town of Atchafalaya (16SM102) is at the southern edge of USACE fee lands of the ABFS, and is not considered eligible for NRHP listing (Godzinski et al. 2005).

Previous cultural investigations have developed plans for archeological evaluations throughout the IBA and evaluated portions of the IBA, and some field surveys have been conducted, but to date have not identified any prehistoric or historic sites additional to the sites mentioned above.

1 The cultural resource evaluation by Smith et al. (2003) developed
2 probability areas for prehistoric and historic sites in the IBA. The
3 extent of moderate and high probability areas for prehistoric sites in
4 the IBAs were thought to be extensive, including areas in proximity
5 to Bayou Fordoche and Bayou Fusilier of the Swamps, Bay Haha
6 and Opelousas Bay, and Henderson Lake. High probability areas
7 for historic sites were suggested to be located in proximity to the
8 Atchafalaya River Channel and at the historic site of the town of
9 Atchafalaya, in proximity to the alignment of I-10.

10
11 The geomorphological analysis presented in Smith et al (2003)
12 indicates that in much of the central and southern portions of the
13 IBA, elevations have not increased markedly since the construction
14 of the ABFS where there has not been cultural modification (i.e.,
15 canal or natural channel excavation/dredging and/or spoil
16 deposition). These considerations would support an expectation
17 that additional prehistoric sites could be encountered along natural
18 levees in the IBA. However, investigations by Weinstein and Wells
19 (2004) suggested high-probability areas along Bayou Courtableau
20 and Little Fordoche Branch and discovered no prehistoric or
21 historic sites. Investigations reported in Godzinski et al. (2005)
22 indicate that in proximity to the Atchafalaya River channel, on its
23 natural levee or beneath spoil banks, any prehistoric or historic
24 sites are likely to be deeply buried under sediment deposits of
25 several feet or more.

26
27 ***The Henderson Lake site (16SM95).*** The Henderson Lake site is
28 located in Section 10 of T8S R7E. The site is on the west side of
29 Bayou Coquille on a natural levee that has subsided and was
30 inundated by the construction of Henderson Lake. The shell
31 midden was truncated on its northern side by a canal excavation,
32 and a draw-down of Henderson Lake in 2000 exposed artifacts and
33 human remains eroding from the midden. McGimsey and Heller
34 (2001) state that ceramics recovered ranged from the Marksville
35 period (ca. AD 1-300) to Baytown (ca. AD 300-700) or Coles Creek
36 periods (ca. AD 700-1200). Human remains were also recovered,
37 and a determination was made that a number of other burials
38 remain in the midden. However, work concluded prematurely due
39 to the rising level of Henderson Lake.

38 ***Data from the
Henderson Lake
site could enhance
the knowledge of
the prehistory of the
Atchafalaya Basin.***

40
41 The Henderson Lake site is subject to inundation and periodic
42 exposure to erosion and site degradation during draw-downs of
43 Henderson Lake. Therefore, the site is under threat of further
44 degradation. Following the outline of “Compliance Procedures for
45 Project Activities” presented in the *Historic Properties Management
46 Plan* (Kelly 2004), a program of consultation with appropriate

1 parties, evaluation, and if necessary, mitigation should be
2 developed for the site. Additional field research at the site should
3 be a cultural resources management priority for the ABFS project,
4 initially to make a formal determination of NRHP Register of
5 Historic Places. Under the assumption that the site is likely to be
6 found eligible for listing in the NRHP, regular monitoring of the site
7 would be a minimum management strategy going forward; if
8 evidence of further and continuing disturbance is found,
9 appropriate preservation strategies (such as the installation of
10 erosion control material) should be developed and followed. If
11 further evaluation or monitoring of the site indicates that a more
12 active management strategy is necessary, data recovery should be
13 considered before the site is irretrievably degraded or lost.
14 Particular sensitivity is required in management of the Henderson
15 Lake site due to the presence of human burials.
16

17 Further research on the Henderson Lake site provides a potential
18 opportunity to contribute to scholarly knowledge of the prehistory of
19 the Atchafalaya Basin. Unfortunately, the site is not readily
20 accessible to the general public (other than by boat), and its
21 interpretive potential is constrained by difficulty of access.
22 Nevertheless, information on the site, and possibly artifacts from
23 them obtained in an appropriate cultural resources investigation,
24 could contribute effectively to an interpretive display at the
25 proposed project visitor center.
26

27 The Bayou Fardoche Mounds site (16SL34). As mentioned above,
28 the deposits formerly identified as the Bayou Fardoche Mounds site
29 are located on the west bank of Bayou Fardoche, straddling the
30 Section 11/14 line in T7S R6E. The site was identified in 1975 and
31 consisted of two earthen mounds, approximately 50 meters apart.
32 In 1991 cultural resources investigators revisited the site and
33 speculated the mounds dated to the Marksville period (ca. AD 1 to
34 400). However, the investigations at the site were not conclusive
35 and Weinstein and Wells (2004) proposed further cultural resource
36 investigations to clarify the condition, extent, and age of the site.
37 Additional archeological field research was conducted at the site in
38 2006 and 2009. The report of the investigations (Barse and Heller
39 2011) concluded that the mounds resulted from historic land
40 disturbance, either from early-twentieth century cypress logging or
41 from dredging used to create a boat launch platform. No cultural
42 material was that would suggest a prehistoric affiliation for these
43 two mounds. Further evaluation or monitoring of the site as a
44 cultural resource are not necessary.

1 8.1.2.4.3 Aesthetic Resources

2 At this time no lands are classified as aesthetic resources.
3

4 **8.1.2.5 Multiple Resource Management**

5 This classification category, with all its subcategories, is applicable
6 to virtually all of the IBA. At some locations, a particular sub-
7 category will be dominant, but by and large, all three sub-
8 categories are compatible with each other.
9

10 8.1.2.5.1 Vegetative Management

11 This land classification subcategory is generally applied to the
12 entire IBA, excluding areas designated as recreation low-density.
13 The objectives for this category of resource management are
14 essentially the same as for fish and wildlife management.
15 Maintenance and improvement of aesthetic resource quality,
16 especially along transportation corridors, is an objective.
17 Therefore, vegetative manipulation in these areas will be an
18 integral part of wildlife and fisheries management and also integral
19 to the provision of compatible recreational activities. Another major
20 consideration in providing stewardship to the natural and created
21 resources associated USACE projects is the preservation and
22 enhancement of the aesthetic integrity of streambanks and
23 shorelines.
24

25 Management will be in the approach of permitting natural
26 processes to proceed in an uncontrolled fashion in existing forested
27 areas. Preservation may require management efforts to perpetuate
28 ecologically balanced forestlands, including control of insects and
29 disease. Technical assistance and coordination may be sought
30 from U.S. Forest Service and USFWS. In low-intensity recreation
31 use areas, management of forest resources will be consistent with
32 the maintenance of natural characteristics. Plantings, as well as
33 necessary clearings or selective removal of trees, will seek to
34 promote the creation or preservation of natural landscapes and
35 seek to enhance wildlife habitats. Vegetation management and
36 management techniques would be the same as those discussed for
37 the BDOA in Section 7.1.3.5.1.
38

39 8.1.2.5.2 Wildlife Management General (Fish and Wildlife Management Activities)

40 This land classification subcategory is generally applied to the
41 entire IBA, excluding areas designated as recreation low-density.
42 Of primary importance in this subcategory is the maintenance and
43 enhancement of fish and wildlife resources. Fish and wildlife have
44 ecological, economic, educational, aesthetic, historical,
45 recreational, and scientific value to the region and nation. The

1 management of any population of threatened or endangered
2 species that may be discovered on project lands (or that colonize
3 project lands and waters) shall receive the highest priority from a
4 management perspective. The objective of a non-consumptive fish
5 and wildlife management program shall be to retain natural
6 resources for the visitor to observe and enjoy. This implies that the
7 widest variety of species endemic to each community be
8 maintained on project lands. General wildlife management would
9 be the same as discussed for the BDOA in Section 7.1.2.5.2.

10 11 8.1.2.5.3 Recreation Low-Density

12 This subcategory is applied to the IBA lands that are not already
13 covered by a more restrictive specific classification. One of the
14 goals of the Public Access feature of the ABFS is to "...maximize
15 public opportunity to observe and utilize the fish and wildlife
16 resources..." in the project area. All allowed recreational activities,
17 including hunting, wildlife observation, and photography, fall into
18 this classification. All existing trails, parking areas/access points,
19 sanitary facilities and other site amenities, roads, and wildlife
20 observation areas will be maintained as part of this classification.

21 22 8.1.2.5.4 Inactive and/or Future Recreation Areas

23 There are no inactive recreation areas. Future development to
24 facilitate low-density recreation should include:

- 25
26 • further development of nature trails to provide increased
27 opportunities for wildlife observation for persons of varying
28 physical capabilities;
- 29
30 • expansion of ATV trails to address overuse problems and
31 provide access to areas of public interest for persons of
32 varying physical capabilities;
- 33
34 • additional site amenities and sanitary facilities at
35 access/parking areas as required by public use patterns;
- 36
37 • possible primitive camping area(s) with minimal site
38 development and provision of sanitary facilities where
39 appropriate;
- 40
41 • additional development of the project's interpretive services
42 and outreach program to facilitate public access and
43 increase enforcement of project policies and rules;

- Acquiring fee lands to eliminate gaps in USACE ownership along public access roads; and
- the development of fishing ponds for children and persons of varying physical capabilities.

8.1.2.6 Easement Lands

USACE will acquire road and/or channel easements, as needed, to provide for improved safe visitor access to the IBA. They will be managed in strict accordance with the terms and conditions of the easement estate acquired.

8.2 NATURAL RESOURCES MANAGEMENT GUIDELINES FOR IBA

8.2.1 Vegetative Management Guidelines

Vegetation resource objectives include passive and active management for various resources' needs. This involves management and participation in various stewardship projects for resources. Management activities will be undertaken to provide for this type of resource. Important existing or potential den or cavity nesting trees should be preserved and managed. Attempts should be made to make ample den or nest trees continuously available as a natural and vital component of the forest. Vegetative management guidelines and techniques are the same as discussed for the BDOA in Section 7.2.1.

8.2.1.1 Primary Management Objectives

The primary management objectives of the IBA are the same as those discussed for the BDOA in Section 7.2.1.1. Development of forest resources for timber production is not a prime objective of the ABFS, as specified in the 1982 final Environmental Impact Statement. A more complete Forest Management plan is presented in the OMP.

8.2.1.2 Forest Management Guidelines

Implementing management practices to meet the following specific guidelines will attain broad management goals:

- Improve erosion control by maintaining adequate forest and herbaceous cover crops and using appropriate silvicultural practices.
- Improve or maintain interspersed forest successional stages and community types.

- Restore converted or deteriorated areas to appropriate forest types.
- Maintain adequate snags and other nesting cavities for forest-dwelling species.
- Maintain suitable existing forest types.
- Control insects, disease, and wildfire, and restore weather-damaged forest stands, as necessary.
- Manage forest stands to ensure minimal impact on other natural resources, such as aquatic ecosystems.
- Provide and maintain significant forest resource areas supporting locally rare species of plants and animals.

8.2.1.3 Public Use Considerations Related to Vegetation Management

Project allocated resources will be managed to meet the following public use objectives:

- Provide a diversity of habitat and forest types for consumptive and non-consumptive recreational pursuits.
- Provide practical, safe, and adequate access to forested lands for recreational purposes.
- Provide educational and research opportunities.
- Maintain or improve the aesthetic character of project lands.

8.2.1.4 Natural and Unique Areas

Certain areas within the forested acreage will be set aside for this purpose. Once these areas are identified, maps will be inserted into the OMP, showing their locations. The primary objectives of the "Natural and Unique Areas" are the same as those discussed for the BDOA in Section 7.2.1.4.

8.2.2 Fish and Wildlife Management Guidelines

8.2.2.1 Primary Management Objectives

A diversity of vegetation and habitat types exists within the IBA. The large contiguous forest, agricultural and former agricultural lands, and aquatic resources provide suitable habitat for a wide variety of wildlife and fish species. Wildlife and fisheries resources

1 are managed in accordance with P.L. 85-624, ER 1130-2-540, and
2 ER 1165-2-400, whereby resources are utilized in a multiple-use
3 concept, so that future generations can enjoy their natural heritage.
4 Non-consumptive management practices will receive equal
5 consideration with those practices for consumptive game and fish
6 management. Special consideration will be given to
7 endangered/threatened species and species of concern, as listed
8 in Sections 2.1.6.4, 2.1.6.5, and 2.1.7.3 of this document, when
9 manipulating habitat.

10 **8.2.2.2 Wildlife and Fisheries Management Guidelines**

11 Implementing management practices to meet the following specific
12 objectives will attain broad management goals:

- 13 • Improve or maintain interspersion of plant successional
14 stages, community types, and open lands.
- 15 • Restore some converted areas to native vegetation and
16 improve wildlife cover.
- 17 • Maintain adequate nesting cavities for animal species.
- 18 • Maintain existing wetland habitats and restore converted
19 wetlands, as appropriate.
- 20 • Restore native populations, as appropriate.
- 21 • Manage lands leased for cropland, pasture, grazed woods,
22 or haylands to ensure minimal impact on natural resources.
- 23 • Conduct O&M activities in a manner to minimize impact on
24 land- and aquatic-based habitats and inhabitants.

25 **8.2.2.3 Existing Management Agreements with Louisiana Department of Wildlife 26 and Fisheries**

27 ***LDWF assists
28 USACE with the
29 enforcement of
30 Federal and State
31 game laws.***

32 LDWF is providing limited assistance with the management of the
33 lands within the IBA, in accordance with ER 1130-2-540 and 550.
34 In the absence of an executed PPA for the public access feature,
35 USACE currently coordinates the hunting seasons with LDF to
36 closely match SWMA regulations. The LDWF's Enforcement
37 Division has provided USACE with law enforcement activities for
38 state and Federal fish and game laws.

1 USACE and the non-Federal sponsor will develop and sign PPA
2 that will detail the management responsibilities for this feature in
3 accordance with the statutory and programming authorities.
4

5 **8.2.2.4 Resource Management Compartments**

6 The purpose for delineating management compartments in the
7 project master plan is to provide general resource management
8 guidelines for specific areas. Natural and geographic features, as
9 well as habitat types, were primary factors in defining boundaries to
10 separate the compartments. Items considered in the formulation of
11 management recommendations include aesthetics, disease
12 problems, soil erosion potential, wildlife carrying capacity, unique
13 resources, management potential, and manpower and funding.
14 More specific management objectives and prescriptions will be
15 developed in the annual OMP. The delineation and guidelines for
16 compartments should be adjusted annually during update of the
17 project OMP as new information, such as forest inventory data, or
18 completed improvements are obtained.
19

20 The IBA has been separated into four management compartments.
21 Brief descriptions of the three areas are provided below.
22

23 8.2.2.4.1 Bayou Fordoche Compartment

24 This area encompasses all fee lands within St. Landry Parish (T7S
25 R6E and T7S R6E) from the West Protection Levee to the West
26 Atchafalaya River Guide Levee (see Appendix C, Figure 14). The
27 southern boundary of this compartment is the St. Landry/St. Martin
28 Parish line. There is one 40-acre block of private land within the
29 compartment boundaries. One other 40-acre block of land has
30 been restricted because it is completely surrounded by private land.
31 Lands owned in fee within this compartment comprise a total of
32 17,181.41 acres. Access to the Bayou Fordoche compartment is
33 gained by boat, vehicle, and/or ATVs. The Bayou Fordoche
34 Natural Area lies within this compartment.
35

36 The Bayou Fordoche compartment is generally flat and
37 characterized by numerous natural bayous and ridges. Bayou
38 Fordoche bisects the unit, and gentle slopes exist rising east and
39 west with the area furthest east having higher elevations.
40 Elevations range from 6 to 25 feet msl. Forest composition and
41 cover types are directly related to the elevation levels at which they
42 occur. Areas of lower elevation are forested swamp. Baldcypress,
43 willow, and buttonbush dominate those areas that are below 15
44 feet msl in elevation. Above this level, the forest is composed of
45 bottomland hardwoods with a variety of oak species and green ash
46 dominating.

1
2
3
4 **USACE regulates**
5 **hunting and fishing**
6 **on IBA through the**
7 **issuance of annual**
8 **permits.**
9

The western portion of the compartment is comprised of bayous with associated braided streams, lakes, and other low-lying areas that are inundated for approximately 6 to 9 months out of the year. Seasonal flooding generally occurs from December to June. This cyclic hydrology provides excellent habitat for crawfish. As a result, crawfish are abundant and heavily fished in season. This traditional use of the area is regulated through the issuance of annual permits by the ABFS PO. Hunters of upland bird, waterfowl, small game, wild turkey and white-tailed deer utilize the area on a seasonal basis. Annual permits issued by the ABFS PO regulate hunting activities. Additionally, recreational and commercial fishermen utilize the water resources of this compartment.

14
15 Resource management guidelines for this compartment include:

- 16
- 17 • Identify and maintain adequate nesting cavities for animal
- 18 species.
- 19
- 20 • Maximize and maintain annual wildlife food plots.
- 21
- 22 • Monitor, evaluate, and improve habitat for principal game
- 23 species.
- 24
- 25 • Control invasive species.
- 26
- 27 • Implement nuisance animal control.
- 28
- 29 • Create and/or maintain forest openings to enhance wildlife
- 30 habitat.
- 31
- 32 • Conduct intermediate harvests to enhance wildlife habitat.
- 33
- 34 • Create moist soil units for waterfowl benefits.
- 35

36 8.2.2.4.2 Henderson Lake Compartment

37 This area encompasses all fee lands within St. Martin Parish from
38 the West Protection Levee to the east shoreline of Henderson Lake
39 (Bay Andy) and following the western edge of the Enterprise
40 Pipeline to the Atchafalaya River Guide Levee (see Appendix C,
41 Figure 15). The majority of the property in this compartment was
42 acquired from St. Martin Land Company in November 2001. There
43 are four blocks of state-owned lands within this compartment
44 consisting of 1,056 acres. In addition, there are 10 privately owned
45 blocks of land totaling 1,050 acres. Lands owned in fee

1 encompass 10,034.61 acres. Access to the Henderson Lake
2 Compartment is gained by either boat or vehicle.
3

4 Henderson Lake is a backwater impoundment consisting of a
5 series of north-south bayous and bays. The lake was created in
6 1968 when the Henderson Control Structure (HCS) was built by the
7 Louisiana Department of Public Works. This structure is located in
8 Section 23 T9S R7E in St. Martin Parish adjacent to the West
9 Atchafalaya Basin Protection Levee. Backwater conditions occur
10 when river levels rise above 9 feet as that is the height of the HCS.
11 Prior to the installation of the HCS, this area went through annual
12 periods of flooding and receding. Currently, a lake regime exists
13 and the operation and management of the HCS is under the
14 direction of St. Martin Parish. In 2003, a Henderson Lake task force
15 was established and is comprised of the following agencies:
16 LDNR, LDWF, LSU, and USACE. The primary purposes of the
17 task force are to address the exotic aquatic weed control problems
18 and clarify the appropriate roles of the various stakeholder
19 agencies and/or public interest.
20

21 Henderson Lake was originally selected as a pilot WMU under the
22 ABFS project authority. Implementation would affect the
23 management of the lake, as well as the surrounding land,
24 especially the Henderson Lake compartment. The water
25 management units are primarily intended to help control water
26 quality issues. They will also address the aquatic vegetation
27 problems. Several documents will need to be created prior to any
28 construction of water management units, including, but not limited
29 to, an EIS, a Water Management PCA, and an O&M manual.
30

31 Elevations range from 0 to 25 feet msl. The terrestrial areas are
32 generally flat and characterized by small ridges and drainage
33 sloughs. Much of this compartment is commonly referred to as
34 Henderson Lake and the North Flats by the general public. The
35 vast majority of this compartment is inundated year-round. Lake
36 levels are predominantly influenced by a combination of the
37 Atchafalaya River stages and by the amount of water that is
38 entering from the Bayou Courtableau Structure. The lakebed is
39 better known as the northern flats and averages 4 feet in depth.
40 The lake has several deep bayous with numerous man-made
41 canals that were created for oil and gas exploration and for the
42 construction of I-10.
43

44 The Bayou Courtableau Structure provides the primary source of
45 freshwater flow to the lake via Bayou Fordoche. This structure was
46 designed to divert excess flood flows from the Bayou Courtableau

1 Basin though the West Atchafalaya Basin Protection Levee to
2 alleviate flood damage landside of the levee in the vicinity of Bayou
3 Courtableau to Charenton, LA. Common water bodies making up
4 this compartment include Bay Haha, Opelousas Bay, Lake
5 Bigeaux, Philips Canal, Lost Bayou, Bayou Fusilier of the Swamps,
6 and lower Bayou Fordoche.
7

8 Forest composition in the western portion of this area consists of
9 baldcypress swamp, while the easternmost portion is primarily
10 bottomland hardwood. Forest composition and cover types are
11 directly related to the elevation levels at which they occur. Areas of

12 lower elevation are forested
13 swamp. Baldcypress, willow,
14 and buttonbush dominate
15 elevations below 15 feet msl.
16 Above this level, forest is
17 composed of bottomland
18 hardwoods with a variety of
19 oak species and green ash
20 dominating. Areas east of
21 Bay Haha are generally
22 above 15 feet msl. Common
23 native aquatic vegetation
24 includes coontail



25 Photograph 8-2. Water hyacinth (*Eichornia*
26 *crassipes*).

27 (*Ceratophyllum demersum*), cattail (*Typha latifolia*), Southern naiad
28 (*Najas guadalupensis*), and waterlilies (*Nymphaea* spp.). Invasive
29 species found in the aquatic portion of this compartment include
30 alligatorweed (*Alternanthera philoxeroides*), water hyacinth
31 (*Eichornia crassipes*), water lettuce (*Pistia stratiotes*), hydrilla
32 (*Hydrilla verticillata*), and common salvinia (*Salvinia minima*)
33 (Photograph 8-2).

34 Hunters of upland bird, waterfowl, small game, and deer utilize the
35 area on a seasonal basis. An annual hunting permit regulates
36 hunting in this compartment. Additionally, recreational and
37 commercial fishermen utilize the water resources of this
38 compartment. The hydrologic cycle and shallow water conditions
39 provide excellent habitat for crawfish. As a result, crawfish are
40 abundant and heavily fished in season. This traditional use of the
41 area is regulated through the issuance of annual permits by the
42 ABFS office.

43 Resource management guidelines for this compartment include:

- 44 • Identify and maintain adequate nesting cavities for animal
45 species.
46

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- Maintain and/or implement protection measures for North Lake Bigeaux bald eagle nest
- Conduct forest inventories and develop prescriptions to improve forest composition
- Monitor, evaluate, and improve principal game species.
- Implement nuisance animal control measures as necessary.
- Implement aquatic weed monitoring and control programs.
- Monitor and implement protection measures for culturally sensitive areas
- Monitor crawfish harvesting during the state waterfowl season, and develop and implement restrictions if conflicts develop between the two or more user groups.

8.2.2.4.3 IBA Agricultural Compartment

This area encompasses lands within St. Landry Parish from the eastern boundary of the Bayou Fordoche compartment east to the West Atchafalaya River Guide Levee (see Appendix C, Figure 16). The main ATV trail marks the southern boundary of the compartment. There is one noncontiguous 160-acre blocks of land closed to hunting within this compartment. Lands within this compartment comprise a total of 2,428 acres. Users may obtain access to this compartment by boat, vehicle, and/or ATV.

The Agriculture compartment is generally flat and characterized by numerous old bayous, which have silted into small drainage canals. The area also has several man-made levees. Prior to the purchase of lands within this compartment, this area was cultivated for agriculture purposes. Approximately 1,720 acres of this compartment have been reforested with native BLH to restore the site. The installation of culverts and gates control the hydrology of this compartment. These structures allow water to be held and released during peak times of the year. About 350 acres of this area are relatively low (10 feet msl) and are flooded annually by rain and/or swamp levels. These flooded conditions provide excellent waterfowl habitat. Gates are closed in November to initiate flooding by rainwater and runoff. In 2003, additional leveling structures were installed to maintain the maximum water levels when gates are closed.

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The majority of this compartment has been reforested with native seedlings including water oak, nuttall oak, live oak, persimmon, green ash, and baldcypress. Pioneer species that have reestablished naturally include black willow, swamp dogwood, American sycamore, and cottonwood. Box elder (*Acer negundo*), and Chinese tallow (*Triadica sebifera*) are prevalent, unwanted, pioneer species. Common ground vegetation includes dewberry (*Rubus* spp.) and broomsedge (*Andropogon* spp.). This compartment adds a large amount of diversity to the entire IBA. The reforested areas provide thick habitat for both cover and feeding for large game, small game, non-game, and upland birds. The low-lying inundated portions provide excellent resting and feeding areas for both waterfowl and shore birds. The water cycles in these inundated areas are an excellent habitat for swamp crawfish.

The increase in small game and non-game species and the thickness of the habitat has increased coyote populations in the compartment. Beavers have also become a nuisance in this compartment by stopping up culverts and drainage canals (Photograph 8-3). These two species will require more attention and this compartment should be a major focus for nuisance animal control. Hunters of upland birds, waterfowl, small game, and deer utilize the area on a seasonal basis. This compartment receives more rabbit and woodcock hunting pressure than any of the other compartments.



Photograph 8-3. Beaver damage on small tree.

Resource management guidelines for this compartment include:

- Maximize and maintain annual wildlife food plots (Photograph 8-4).
- Monitor reforested areas to ensure that survival is sufficient.



Photograph 8-4. Annual wildlife food plot on IBA.

- Develop prescriptions on reforested fields to improve forest composition.
- Monitor, evaluate, and improve habitat for principal game species.
- Control invasive species
- Implement nuisance animal control
- Establish moist soil unit management for waterfowl benefit

8.2.2.4.4 Atchafalaya River Corridor Compartment

As this area’s name implies, the lands in St. Landry Parish are within the corridor between the Atchafalaya River and the West Atchafalaya River Guide Levee (see Appendix C, Figure 17). Further south, lands in St. Martin Parish included in this compartment are between the northwest forested line along the Enterprise Pipeline to the lower levee road. Lands within this compartment comprise 2,874 acres. There are two blocks of private land within this compartment consisting of approximately 240 acres. Users are allowed to access the Atchafalaya River Corridor via boat and vehicle.

This area is generally flat and characterized by numerous ridges and natural bayous. Elevations in this compartment are consistently above 15 feet msl. Accordingly, these elevations support forest composition of primarily bottomland hardwood species throughout. The northern portion of the compartment between the guide levee and river contains numerous bayous and low-lying areas that are inundated as river levels rise. One oxbow lake exists and is flushed annually with the rise and fall of the Atchafalaya River (Photograph 8-5). In the southern portion of the compartment, areas of lower elevations, such as sloughs and drainage beds, are directly affected by the hydrologic cycle of Lake Henderson. They are inundated for 6 to 9 months a year in accordance with the hydrologic cycle mentioned in previous compartment descriptions.



Photograph 8-5. Oxbow lake on IBA.

1 This area is relatively high in elevation and will contain a greater
2 variety of tree species. These include water oak, nuttall oak, live
3 oak, persimmon, green ash, baldcypress, black willow, sandbar
4 willow (*Salix interior*), swamp dogwood, American sycamore, and
5 cottonwood. The northern portion of this compartment was once a
6 cottonwood plantation when it was still privately owned in the
7 1980s. The plantation effort was abandoned and the area was
8 clearcut. This compartment is overstocked and will need some
9 type of timber stand improvement or release cut. A large portion of
10 the timber in St. Martin Parish was clearcut between 1990 and
11 1993. This has created a stand comprised mostly of even-aged
12 timber.

13
14 A portion of the west Atchafalaya River Levee traverses this
15 compartment. The Atchafalaya Basin Levee District maintains an
16 approximately 270-foot corridor adjacent to the levee. Grass is
17 mowed several times a year throughout the growing season.

18
19 The area supports a variety of wildlife, including large, small, and
20 non-game species and upland birds. All of these species are
21 hunted on a seasonal basis. This area also contains a large
22 population of beaver and coyote. This should be a primary focus
23 compartment for the nuisance control program, Resource
24 management guidelines for this compartment include:

- 25 • Maximize and maintain annual wildlife food plots.
- 26
- 27 • Conduct forest inventories and develop prescriptions to
28 improve forest composition.
- 29
- 30 • Monitor, evaluate, and improve principal game species.
- 31
- 32 • Implement nuisance animal control measures as necessary.
- 33
- 34

35 **8.2.3 Recreation**

36 Recreation facilities development at IBA is minimal. The area is
37 managed primarily for natural resource-oriented recreational uses
38 in the Atchafalaya Basin, and only minimal facility development has
39 been undertaken to support a natural resource-oriented
40 recreational experience. This is not meant to imply that recreation
41 is discouraged but to underscore that the resource itself is the
42 independent variable against which all recreational potentials are
43 measured. If an activity can be supported and that activity does
44 not degenerate or pose a serious threat to the natural resource
45 base, and if the activity does not exclude the traditional recreational
46 activities, namely consumptive uses, then attempts to

1 accommodate the proposed activity will be taken within funding and
2 management capabilities.

3
4 Erection of signs, interpretation, trail improvement, and cooperative
5 work with volunteer organizations will be conducted, in addition to
6 habitat management, in order to meet the objectives of providing
7 high-quality recreation and educational experiences for the public
8 at the project. Project-allocated resources will be managed to meet
9 the following public use objectives:

- 10
11 • Provide high-quality wildlife and fish-oriented recreation.
- 12
13 • Provide practical, safe, and adequate access to wildlife and
14 fish management areas suited for recreation.
- 15
16 • Provide educational and research opportunities.
- 17
18 • Maintain or improve the aesthetic character of ABFS project
19 land.
- 20
21 • Provide and maintain significant wildlife and fish resource
22 areas, including wetlands and areas supporting locally rare
23 species of plants, animals, fish, and unique habitat.
- 24

25 **8.2.3.1 Public Hunting and Fishing**

26 The primary recreational activities that occur on the public access
27 fee lands at the IBA are hunting and fishing. Hunting regulations
28 and seasons are coordinated by USACE field personnel with
29 LDWF personnel and are a part of the AMP.

30
31 Crawfishing is a popular activity, and the USACE allows the
32 commercial and recreational harvest of crawfish on its public
33 access fee lands. Limits and controls on crawfishing on the IBA
34 lands and waters are implemented by USACE in order to balance
35 recreational and commercial crawfishing interests, public hunting,
36 and other visitor activities.

37
38 There are significant fishing opportunities on the IBA, especially
39 focused on the Henderson Lake compartment. Boat access sites
40 are located at numerous locations on the Atchafalaya River and at
41 the Bayou Courtableau outlet structure, along the West
42 Atchafalaya protection levee, and Henderson Lake. Many quality
43 fishing areas are found throughout the IBA.

1 **8.2.3.2 Non-Consumptive Recreation**

2 Non-consumptive recreational activities, such as wildlife
3 observation and photography, are offered by existing project
4 facilities and management, and there is significant potential for
5 growth in these areas of visitor interest. Additional development of
6 nature trails, viewing platforms, and other facilities / areas that can
7 provide for these activities are envisioned for the future, subject to
8 funding.
9

10 At present, camping is not allowed on the IBA; however, several
11 private developed campgrounds exist in the general vicinity, and
12 the state provides two primitive camping areas on lands they own
13 in the SWMA. The IBA lands have the potential to provide primitive
14 camping site(s) to support both consumptive and non-consumptive
15 recreational activity. The possibility for primitive camping area(s) on
16 IBA lands should be investigated and implemented as deemed
17 necessary by public demand and compatible with project goals.
18

19 Some all-terrain vehicle trails exist but are used primarily to
20 exist but are used primarily to provide interior access. They
21 are mainly used seasonally by hunters. There are trails and
22 areas where hiking, horseback riding, and nature walks occur,
23 but these activities are limited in scope through use or activity
24 permits granted by the ABFS PO (Photograph 8-6).
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Photograph 8-6. Trail ride on IBA lands.

31 **8.3 PLAN OF DEVELOPMENT AND DESIGN CRITERIA FOR IBA**

32 **8.3.1 Conceptual Plan**

33 The conceptual plan for this area is to provide a basic level of
34 project development while maximizing public opportunity to observe
35 and utilize the fish and wildlife resources.
36
37

38 **8.3.2 Facilities/Actions Proposed for Immediate Development**

39 There are two primary needs that USACE has regarding its public
40 access fee lands in the IBA. One of these urgent needs is the
41 acquisition of adequate road easements and the construction
42 and/or improvement of roads. The existing roads and trails to
43 these lands are limited and substandard for road vehicles.
44 Associated with this limitation is the need to improve interior ATV
45 and hiking trails to sustain all-weather use.

1 The other urgent need for the IBA is the provision of a fully
2 functional PO / visitor information center on project lands. The
3 proposed PO should be located in the southeastern portion of the
4 IBA in proximity to I-10 and the state's Atchafalaya Welcome
5 Center and will include office space for project staff, equipment
6 storage, and maintenance facilities, as well as a project information
7 center (Type C under USACE guidelines). A more complete
8 discussion of the need and rationale for the design and
9 construction of a PO on the public access lands at the IBA is
10 provided in section 8.1.2.1 and Appendix K.

11 **8.3.3 Future Development Under the Public Access Feature**

12 Future developments under the public access feature should
13 include:

- 14 a) further development of nature trails to provide increased
15 opportunities for wildlife observation for persons of varying
16 physical capabilities;
- 17 b) expansion of ATV trails to address overuse problems and
18 provide access to areas of public interest for persons of
19 varying physical capabilities;
- 20 c) additional site amenities and sanitary facilities at
21 access/parking areas as required by public use patterns;
- 22 d) possible primitive camping area(s) with minimal site
23 development and provision of sanitary facilities where
24 appropriate;
- 25 e) additional development of the project's interpretive services
26 and outreach program to facilitate public access and
27 increase enforcement of project policies and rules; and
- 28 f) acquisition of fee lands to eliminate gaps in Federally owned
29 lands on access roads.

30 Specific public access improvements that may be implemented,
31 contingent upon funding constraints and management concerns,
32 include:

- 33 • WABPL/Dixie Pipeline Boat Launch Site
 - 34 ○ Courtesy dock
 - 35 ○ Boardwalk

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- IBA Site
 - Water well and pump
 - Bridge across Indian Bayou by ranger station
 - Surfacing or boardwalk at trail on interior of Indian Bayou Parking Area
 - Central pavilion
 - Update of signage, maps, and brochures
 - Sport fishing pond near Indian Bayou
 - Two primitive campgrounds near the Atchafalaya River Guide Levee
 - Interpretive trail and outdoor education area along Indian Bayou
 - Designation of existing east-to-west main ATV trail as a foot trail
 - 1- to 2-acre managed fishing pond for children and physically handicapped persons
 - Foot trail from the main ATV trail to the previously restricted 160-acre hunting area

- Oxbow Site
 - Outdoor classroom at oxbow
 - Nature trail
 - Canoe launch
 - Ranger shelter
 - Restrooms
 - Fishing piers/observation deck at oxbow

- Other amenities and interpretive features
 - Lifejacket loaner program (unmanned)
 - Markers on low-water stumps

- Interpretive Services Elements
 - Signs on I-10
 - Kiosks at all parking areas
 - Sign at beginning of hiking trails showing route in detail
 - Better brochures for hiking trails
 - Signs/carsonites along hiking trails showing route

8.4 SPECIAL PROBLEMS AND CONSTRAINTS FOR IBA

8.4.1 Public Health and Safety Concerns

In addition to the safety issues discussed earlier in this Master Plan, several public health and safety concerns deserve attention.

1 **8.4.1.1 Water Quality**

2 At present, testing of the project’s waters is only conducted in
3 conjunction with other studies. As additional opportunities are
4 created for the visiting public to access the project’s waters, state
5 standards for primary and secondary contact recreation should be
6 met. A comprehensive program of water quality testing of project
7 waterways should be implemented. The program should focus on
8 public health parameters but also provide information of value in
9 managing the project’s natural resources. Corrective actions
10 and/or use restrictions should be employed to address any
11 identified problems.
12

13 **8.4.1.2 Potential HTRW Concerns**

14 No hazardous, toxic or radioactive waste problems are presently
15 known to exist on project lands or waters; however, a potential
16 concern centers on previous oil and gas exploration activity on the
17 project lands. If necessary, remedial actions and/or precautions for
18 project visitors and project personnel will be implemented if HTRW
19 hazards are identified.
20

21 **8.4.2 Law Enforcement**

22 Law enforcement has not proved to be a major problem owing in
23 part to the distinct division of responsibilities and cooperation of
24 separate governmental agencies. Enforcement of civil and criminal
25 law is responsibly handled by the local parish sheriff’s office.
26 Game and fish laws are enforced by the LDWF and the USFWS,
27 and Title 36 CFR Chapter 327 regulations are enforced by USACE
28 field personnel with citation authority. All three entities cooperate
29 and notify each other of suspected violations that are under their
30 respective authorities. Contracts exist with St. Landry Parish and
31 St. Martin Parish Sheriff’s Departments to provide supplemental
32 surveillance during peak times. The coordination and cooperation
33 of all these agencies, provides excellent law enforcement coverage
34 of the entire ABFS project.
35

36 **8.4.3 Natural Resource Hazards**

37 Natural resource hazards exist, ranging from poisonous snakes to
38 falling trees. Large alligators also pose a hazard, specifically adults
39 which have been fed frequently by visitors and have lost their fear
40 of humans. “No Feeding Gators” signs are intended to reduce
41 these instances. There are no unique hazards that are different
42 from any other forested areas in the southeast United States. The
43 only added hazard could be in the operation of USACE flood
44 control structures within the ABLP that could result in the
45 evacuation/removal of all visitors. This is a circumstance for which

1 warnings and emergency operations systems have been
2 developed.
3

4 **8.4.4 Endangered/Threatened Species**

5 The Louisiana black bear and American alligator are currently the
6 only Federally listed species protected by the Endangered Species
7 Act present (or potentially present) on USACE lands. No bald
8 eagle nest sites have been identified on USACE fee-title lands.
9 Constraints associated with the black bear on the IBA are the same
10 as those discussed for the BDOA in Section 7.4.4. However,
11 designated Critical Habitat for the Louisiana black bear does not
12 occur on the IBA. Alligator populations will be monitored and
13 management decisions will be made for future issuance of special
14 use permits for alligator harvest. However, the current population
15 of large alligators within the IBA serves a natural role in maintaining
16 the balance of nuisance animals, such as nutria and beavers
17

18 **8.4.5 Archaeological and Cultural Resources**

19 Archaeological resources are an irreplaceable part of the Nation's
20 heritage and therefore must be protected to prevent their loss and
21 destruction. The Operational Management Plan discusses the
22 management of such areas in detail. As discussed above in
23 Section 8.1.2.4.2, the IBA contains two sensitive prehistoric sites,
24 The Bayou Fardoche mounds (16SL34) in St. Landry Parish and
25 the Henderson Lake site (16SM95) in St. Martin Parish. General
26 recommendations for management of these sites are presented in
27 Section 8.1.2.4.2.
28

29 Section 8.1.2.4.2 discusses previous cultural resource
30 investigations in the IBA. Data from these investigations suggests
31 that, due to sediment deposition in most locations under
32 consideration in the IBA for public access feature development, it is
33 not likely that development of such features under the ABFS
34 Master Plan would impact prehistoric or historic sites. However, it
35 is possible that some disruption of an unknown site could occur in
36 connection with land management practices in a number of areas.
37 Certain measures shall be taken to help prevent any such
38 occurrences. These actions include an evaluation of prehistoric
39 site probability and historic land use prior to any sub-surface
40 disturbance. Other measures, for example, could be restriction of
41 logging operations to dry weather to prevent soil disturbance and
42 erosion, minimizing soil disturbance during construction of roads,
43 trails, and firebreaks, and safeguarding any newly discovered
44 archaeological sites, artifacts, or remains in accordance with
45 USACE guidance.

1 **8.4.6 Aesthetics**

2 Aesthetic constraints on the IBA are the same as those discussed
3 for the BDOA in Section 8.4.5.

4

5 **8.4.7 Forest Openings**

6 Until inventory data is compiled and forested areas defined, there is
7 insufficient data to determine if permanent forest openings or a
8 planned cycle to provide continuous openings are needed. The
9 planned forest management activities will create temporary
10 openings throughout the managed forest acreage, and this may be
11 sufficient for this type of habitat requirement. Also, some
12 permanent openings may be maintained in agricultural land
13 scheduled for reforestation. As data are compiled, this section will
14 be updated.

15

16 **8.4.8 Insect and Disease Control**

17 Many hardwood stands, because of stress brought about by
18 overstocked conditions, flooding, drought (Broadfoot and Toole,
19 1958), over-maturity, fire, lightning, etc. (Houston, 1971), have
20 been secondarily attacked by a variety of insect pests. Insects
21 seldom kill hardwood trees, but they cause loss of growth and
22 further decline in vigor. Numerous diseases in several different
23 categories occur on hardwood trees.

24

25 The most practical way to control insects and diseases is the
26 prevention of injuries (fire, logging, etc.) and the promotion of stand
27 conditions favoring healthy and vigorous trees that are more
28 resistant to infestation (Rexrode, 1971). The goal is to maintain
29 insect populations at suitable levels to provide an adequate supply
30 for the various wildlife species that feed upon them, while at the
31 same time holding habitat losses at acceptable levels.

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SECTION 9.0
SHATTERS BAYOU AREA, ABFS PUBLIC ACCESS LANDS



1 **9.0 SHATTERS BAYOU AREA, ABFS PUBLIC ACCESS LANDS**

2
3 **9.1 SBA LAND ALLOCATIONS AND CLASSIFICATIONS FOR DEVELOPMENT**
4 **AND RESOURCE MANAGEMENT**

5
6 USACE has acquired approximately 2,359 acres of fee lands,
7 exclusive of minerals, in the vicinity of the LDWF Attakapas Wildlife
8 Management Area (AWMA) in support of the ABFS project
9 (Appendix C, Figure 18 and Photograph 9-1). This area is
10 bounded on the east by Grand Lake and on the west by the West
11 Atchafalaya Basin Protection Levee (WABPL). Access to this area
12 is by boat.



30 **Photograph 9-1. Shatters Bayou Area.**

31
32 This section of the Master Plan is limited to classifications and
33 management guidelines that are specific to the SBA. Interspersed
34 in the SBA will be easement lands acquired by USACE for the flood
35 control and environmental protection features of the ABFS. These
36 easement lands are not addressed in this section. Management
37 concerns applicable to the easements acquired for the ABFS
38 project flood control and environmental protection features are
39 contained in Section 10.

40
41 **9.1.1 SBA Land Allocations**

42 As stated in Section 6, there are four distinct project allocations:
43 Operations, Recreation, Fish and Wildlife Management, and
44 Mitigation.

1 The Operations land allocation is applicable to all SBA lands. The
2 remaining three allocations do not apply.
3

4 **9.1.2 SBA Land Classifications**

5 Using the Land Classification System for Development and
6 Resource Management, the following classifications have been
7 made for the SBA (see Appendix C, Figure 8). The land
8 classification scheme is intended to fully utilize ABFS lands relative
9 to legislative authority and policy directives. The resource use
10 objectives listed in Section 5 of this plan reflect these authorities
11 and policy directives, and therefore, they provide the goals for the
12 classification process.
13

14 **9.1.2.1 Operations**

15 There are no lands classified as Operations within the SBA.
16

17 **9.1.2.2 Recreation**

18 There are no lands classified as recreation within the SBA. There
19 is no intensive recreation development, and none is envisioned in
20 the future.
21

22 **9.1.2.3 Mitigation**

23 There are no lands classified as mitigation within the SBA.
24

25 **9.1.2.4 Environmentally Sensitive Areas**

26 9.1.2.4.1 Ecological Resources

27 At this time, no lands are classified as ecologically sensitive within
28 the SBA. If future resources, such as black bear den trees,
29 eagle/kite nests, special rookeries, endangered plant communities,
30 etc., are located, then this designation will be applied to those sites,
31 with a goal to preserve or retain the values associated with these
32 resources.
33

34 9.1.2.4.2 Cultural Resources

35 The SBA has not been surveyed for cultural resources. There is a
36 low probability of the presence of significant cultural resources
37 within the SBA, but until the fee property is surveyed and assessed
38 for cultural resources, this land classification cannot be employed.
39

40 9.1.2.4.3 Aesthetic Resources

41 At this time, no lands are classified as aesthetic resources.

1 **9.1.2.5 Multiple Resources Management**

2 This category, with all its sub-categories, is applicable to virtually all
3 of the SBA. At some locations, a particular subcategory will be
4 dominant, but by and large, all three subcategories are compatible
5 with each other.
6

7 9.1.2.5.1 Vegetative Management

8 This land classification subcategory is generally applied to the
9 entire SBA, excluding areas designated as recreation low-density.
10 The objectives for this category of resource management are
11 essentially the same as for fish and wildlife management.
12 Maintenance and improvement of aesthetic resource quality,
13 especially along transportation corridors, is an objective.
14 Therefore, vegetative manipulation in these areas will be an
15 integral part of wildlife and fisheries management and also integral
16 to the provision of compatible recreational activities. Another major
17 consideration in providing stewardship to the natural and created
18 resources associated with USACE projects is the preservation and
19 enhancement of the aesthetic integrity of streambanks and
20 shorelines.
21

22 Management will be in the approach of permitting natural
23 processes to proceed in an uncontrolled fashion in existing forested
24 areas. Preservation may require management efforts to perpetuate
25 ecologically balanced forest-lands, including control of insects and
26 disease. Technical assistance and coordination may be sought
27 from U.S. Forest Service and USFWS. In low-intensity recreation
28 use areas management of forest resources will be consistent with
29 the maintenance of natural characteristics. Plantings, as well as
30 necessary clearings or selective removal of trees, will seek to
31 promote the creation or preservation of natural landscapes and
32 seek to enhance wildlife habitats. Vegetation management and
33 management techniques would be the same as those discussed for
34 the BDOA in Section 7.1.2.5.1.
35

36 9.1.2.5.2 Wildlife Management General (Fish and Wildlife Management Activities)

37 This land classification subcategory is applied to those lands where
38 forested and wetland areas can provide valuable habitat for fish
39 and wildlife resources. Of primary importance in this subcategory
40 is the maintenance and enhancement of fish and wildlife resources.
41 Fish and wildlife have ecological, economic, educational, aesthetic,
42 historical, recreational, and scientific value to the region and nation.
43 The management of any population of threatened or endangered
44 species that may be discovered on project land, or that colonizes
45 project lands and waters shall receive the highest priority from a

1 management perspective. The objective of a non-consumptive fish
2 and wildlife management program shall be to retain natural
3 resources for the visitor to observe and enjoy. This implies that the
4 widest variety of species endemic to each community is maintained
5 on project lands. General wildlife management would be the same
6 as discussed for the BDOA in Section 7.1.2.5.2.
7

8 9.1.2.5.3 Recreation Low-Density

9 This subcategory is applied to the SBA lands that are not already
10 covered by a more restrictive specific classification. Indeed, one of
11 the goals of the Public Access feature of the Atchafalaya Basin
12 Floodway System, Louisiana, project is to "...maximize public
13 opportunity to observe and utilize the fish and wildlife resources..."
14 in the project area. All allowed recreational activities, including
15 hunting, fishing, wildlife observation, and photography, fall into this
16 classification. Any future trails, parking areas, roads, and wildlife
17 observation areas will be maintained as part of the classification.
18

19 9.1.2.5.4 Inactive and/or Future Recreation Areas

20 There are no inactive recreation areas in the SBA. The SBA public
21 access fee lands are accessible only by boat. Primary access is
22 provided by the Myette Point Boat Launch, completed in 2010 as a
23 cost-shared feature under the recreation component of the ABFS
24 project. This high-quality public boat launch, operated by St. Mary
25 Parish, is located strategically in the heart of the SBA project lands,
26 providing easy access and convenient restroom facilities for project
27 visitors.
28

29 Future development to facilitate low-density recreation features
30 should include:

- 31
- 32 • construction of an observation platform, accessible by boat,
33 to provide increased opportunities for viewing and
34 photographing wading birds and waterfowl;
35
- 36 • installation of a canoe trail through the project lands and
37 waters to facilitate hunting, fishing, and non-consumptive
38 recreation; and
39
- 40 • development of the project's interpretive services and
41 outreach program to facilitate public access and increase
42 enforcement of project policies and rules. The existing
43 Myette Point boat launch should be developed as an
44 interpretive site since it serves as the main access site for
45 the SBA.

1 **9.1.2.6 Road and/or Channel Easement Lands**

2 Access to the SBA is by boat only. Future sedimentation events
3 may create shoals in access channels which would require
4 dredging to facilitate continued boat access. At present, there are
5 no identified needs for channel easements to enable public access
6 to the SBA lands. If, however, needs are identified in the future,
7 USACE will acquire channel easements, as needed, to provide
8 access to the SBA. They will be managed in strict accordance with
9 the terms and conditions of the easement estate acquired.

10
11 **9.2 NATURAL RESOURCES MANAGEMENT GUIDELINES FOR THE SBA**

12
13 **9.2.1 Vegetative Management Guidelines**

14 Vegetation resource objectives include passive and active
15 management for various resource needs. This involves
16 management and participation in various stewardship projects for
17 resources. Management activities will be undertaken to provide for
18 this type of resource. Important existing or potential den or cavity
19 nesting trees should be preserved and managed. Attempts should
20 be made to make ample den or nest trees continuously available
21 as a natural and vital component of the forest. Vegetative
22 management guidelines and techniques are the same as discussed
23 for the BDOA in Section 7.2.1.

24
25 **9.2.1.1 Primary Management Objectives**

26 The primary management objectives of the IBA are the same as
27 those discussed for the BDOA in Section 7.2.1.1.

28
29 **9.2.1.2 Forest Management Guidelines**

30 Implementing management practices to meet the following specific
31 guidelines will attain broad management goals:

- 32
- 33 • Improve erosion control by maintaining adequate forest and
34 herbaceous cover crops and using appropriate silvicultural
35 practices.
 - 36
 - 37 • Maintain existing forest successional stages and community
38 types.
 - 39
 - 40 • Restore converted or deteriorated areas to appropriate
41 forest types.
 - 42
 - 43 • Maintain adequate snags and other nesting cavities for
44 forest-dwelling species.

- Maintain suitable existing forest types.
- Control insects, disease and wildfire, and restore weather-damaged forest stands as necessary.
- Manage forest stands to ensure minimal impact on other natural resources, such as aquatic ecosystems.
- Provide and maintain significant forest resource areas supporting locally rare species of plants and animals.

9.2.1.3 Public Use Considerations Related to Vegetation Management

Project allocated resources will be managed to meet the following public use objectives:

- Provide baldcypress-tupelo gum habitat.
- Provide practical, safe, and adequate access to forested lands for recreational purposes.
- Provide educational and research opportunities.
- Maintain or improve the aesthetic character of project lands.

9.2.1.4 Natural and Unique Areas

The majority of the SBA will be set aside for this purpose. Once these areas are identified, maps will be inserted into the OMP, showing their locations. The primary objectives of the "Natural and Unique Areas" are the same as those discussed for the BDOA in Section 7.2.1.4.

9.2.2 Fish and Wildlife Management Guidelines

9.2.2.1 Primary Management Objectives

A diversity of vegetation and habitat types exists within the SBA. The large contiguous forest and aquatic resources provide suitable habitat for a wide variety of wildlife and fish species. Wildlife and fisheries resources are managed in accordance with PL 85-624, ER 1130-2-540, and ER 1165-2-400, whereby resources are utilized in a multiple-use concept, so that future generations can enjoy their natural heritage. Non-consumptive management practices will receive equal consideration with those practices for consumptive game and fish management. Special consideration will be given to endangered/threatened species and species of

1 concern, as listed in Sections 2.1.6.4, 2.1.6.5, and 2.1.7.3 of this
2 document, when manipulating habitat.

3 4 **9.2.2.2 Wildlife and Fisheries Management Guidelines**

5 Implementing management practices to meet the following specific
6 objectives will attain broad management goals:

- 7
- 8 • Maintain existing wetland habitats and restore converted
9 wetlands, as appropriate.
- 10
- 11 • Restore native populations, as appropriate.
- 12
- 13 • Conduct O&M activities in a manner that would minimize
14 impact on land- and aquatic-based habitats and inhabitants.
- 15

16 **9.2.2.3 Existing Management Agreements**

17 In the absence of a PPA, the SBA has been licensed to LDWF, in
18 accordance with ER 405-1-12. Pursuant to those license
19 agreements, the LDWF is responsible for the fish and wildlife
20 management of this land. They have provided the USACE with
21 annual management plans that outline their management
22 strategies. These management efforts are coordinated with the
23 ABFS PO and approved by the OM.

24
25 The USACE and the non-Federal sponsor will develop and sign
26 PPAs that will detail the management responsibilities for this
27 feature in accordance with the statutory and programming
28 authority.

29 30 **9.2.2.4 Resource Management Compartments**

31
32
33 ***Compartments have***
34 ***not been delineated***
35 ***on the SBA.***

36 The purpose for delineating management compartments in the
37 project master plan is to provide general resource management
38 guidelines for specific areas. Natural and geographic features, as
39 well as habitat types, were primary factors in defining boundaries to
40 separate the compartments. At this time, the SBA has not been
41 separated into multiple management compartments. As more
42 natural resource inventories are completed, the land and water
43 resources may be separated into compartments in order to
44 facilitate management strategies.

45 The SBA compartment encompasses all fee lands within St. Mary
Parish. Lands owned in fee within this compartment comprise a
total of 2,232 acres in two blocks of land adjoining the West
Atchafalaya Basin Protection Levee. Access to the SBA is gained
primarily by boat. These lands are managed in cooperation with

1 the LDWF. They are the principal managing agency under license
2 agreement DACW-29-3-91-5 as part of the AWMA rules and
3 regulations.
4

5 The SBA is generally flat with a few higher ridges. These ridges
6 remain dry while the backwaters of the Atchafalaya River inundate
7 the large majority of the unit. The area is comprised of bayous,
8 lakes, and other low-lying areas that are inundated year-round.
9 Forest composition in the area consists primarily of tupelo gum
10 swamp. This is the only area of public access lands that contains
11 extensive baldcypress-tupelo gum and baldcypress swamps.
12 These forest species require a longer rotation than other
13 bottomland hardwood species. A few other bottomland species,
14 including oak, ash, red maple, and willow, can be found on the
15 higher ridges. Hunters of waterfowl, small game, and deer utilize
16 the area on a seasonal basis. In addition, recreational and
17 commercial fishermen utilize the water resources of this
18 compartment for both fishing and crawfishing.
19

20 Resource management guidelines for this compartment include:

- 21 • Identify and maintain adequate nesting cavities for animal
22 species.
23
- 24 • Implement terrestrial and aquatic weed monitoring and
25 suppression programs.
26
- 27 • Conduct forest inventories and improve forest composition
28 accordingly.
29
- 30 • Monitor, evaluate, and improve principal game species.
31
- 32 • Implement nuisance animal control measures as necessary.
33
- 34

35 **9.2.3 Recreation**

36 Recreation facilities development at the SBA is minimal. The area
37 is managed primarily for natural resource-oriented recreational
38 uses in the Atchafalaya Basin, and only minimal facility
39 development has been undertaken to support a natural resource-
40 oriented recreational experience. This is not meant to imply that
41 recreation is discouraged but to underscore that the resource itself
42 is the independent variable against which all recreational potentials
43 are measured. If an activity can be supported and that activity
44 does not degenerate or pose a serious threat to the natural
45 resource base, and if the activity does not exclude the traditional
46 recreational activities, namely consumptive uses, then attempts to

1 accommodate the proposed activity will be taken within funding and
2 management capabilities.

3
4 Erection of signs, interpretation, trail improvement, and cooperative
5 work with volunteer organizations will be conducted, in addition to
6 habitat management, in order to meet the objectives of providing
7 high-quality recreation and educational experiences for the public
8 at the project. Project allocated resources will be managed to meet
9 the following public use objectives:

- 10
11 • Provide high-quality wildlife and fish-oriented recreation.
- 12
13 • Provide practical, safe, and adequate access to wildlife and
14 fish management areas suited for recreation.
- 15
16 • Provide educational and research opportunities.
- 17
18 • Maintain or improve the aesthetic character of ABFS project
19 land.
- 20
21 • Provide and maintain significant wildlife and fish resources
22 areas, including wetlands and areas supporting locally rare
23 species of plants, animals, fish and unique habitat.
- 24

25 **9.2.3.1 Public Hunting and Fishing**

26 The primary recreational activities that occur on the public access
27 fee lands at the SBA are hunting and fishing. Hunting regulations
28 and seasons are coordinated by USACE field personnel with
29 LDWF personnel and are a part of the AMP.

30
31 Crawfishing is a popular activity, and USACE allows the
32 commercial and recreational harvest of crawfish on its public
33 access fee lands.

34
35 There are fishing opportunities surrounding USACE public access
36 lands in the SBA. The nearest boat access is the Myette Point
37 boat launch completed in 2010.

38 39 **9.2.3.2 Non-consumptive Recreation**

40 Non-consumptive recreational activities, such as wildlife
41 observation and photography, are offered by existing project
42 facilities and management and there is significant potential for
43 growth in these areas of visitor interest. Additional development of
44 canoe trails, viewing platforms, and other facilities/areas that can

1 provide for these activities are envisioned for the future, subject to
2 funding.

3
4 At present, camping is not allowed in the SBA; however, the LDWF
5 provides two primitive camping areas on lands they own in the
6 adjacent AWMA.
7

8 **9.3 PLAN OF DEVELOPMENT AND DESIGN CRITERIA FOR SBA**

9 10 **9.3.1 Conceptual Plan**

11 The conceptual plan for this area is to minimize development while
12 maximizing public opportunity to observe and utilize the fish and
13 wildlife resources in the SBA.
14

15 **9.3.2 Facilities/Actions Proposed for Immediate Development**

16 There are no immediate needs for facilitating public access to the
17 SBA properties. The newly constructed Myette Point boat launch
18 provides convenient and safe boating access to all of the project
19 lands and waters.
20

21 **9.3.3 Future Recreation Development**

22 Future recreation developments should include:
23

- 24 a) Construction of an observation platform for viewing and
25 photographing wading birds and waterfowl;
26
- 27 b) Installation of a canoe trail through the project lands and
28 waters to facilitate hunting, fishing, and non-consumptive
29 recreation.
30
- 31 c) Additional development of the project's interpretive services
32 and outreach program to facilitate public access and
33 increase enforcement of project policies and rules. The
34 existing Myette Point boat launch should be developed as an
35 interpretive site since it serves as the main access site for
36 the SBA.
37

38 **9.4 SPECIAL PROBLEMS AND CONSTRAINTS FOR SBA**

39 40 **9.4.1 Public Health and Safety Concerns**

41 In addition to the safety issues discussed earlier in this master
42 plan, several public health and safety concerns deserve attention.

1 **9.4.1.1 Water Quality**

2 At present, testing of the project’s waters is only conducted in
3 conjunction with other studies. As additional opportunities are
4 created for the visiting public to access the project’s waters, state
5 standards for primary and secondary contact recreation should be
6 met. A comprehensive program of water quality testing of project
7 waterways should be implemented. The program should focus on
8 public health parameters, but also provide information of value in
9 managing the project’s natural resources. Corrective actions
10 and/or use restrictions should be employed to address any
11 identified problems.
12

13 **9.4.1.2 Potential HTRW Concerns**

14 No hazardous, toxic, or radioactive waste problems are presently
15 known to exist on ABFS project lands or waters; however, a
16 potential concern centers on previous oil and gas exploration
17 activity on the ABFS project lands. If necessary, remedial actions
18 and/or precautions for ABFS project visitors, and project personnel
19 will be implemented if HTRW hazards are identified.
20

21 **9.4.2 Law Enforcement**

22 Law enforcement has not proven to be a major problem owing in
23 part to the distinct division of responsibilities and cooperation of
24 separate governmental agencies. The local parish sheriff’s office
25 responsibly handles enforcement of civil and criminal law. Game
26 and fish laws are enforced by LDWF and USFWS, and Title 36
27 CFR Chapter 327 regulations are enforced by USACE field
28 personnel with citation authority. All three entities cooperate and
29 notify each other of suspected violations that are under their
30 respective authorities. The coordination and cooperation of all
31 these agencies provides excellent law enforcement coverage for
32 the entire ABFS project.
33

34 **9.4.3 Natural Resource Hazards**

35 Natural resource hazards exist, ranging from poisonous snakes to
36 falling trees. There are no unique hazards that are different from
37 any other forested areas in the southeast United States. The only
38 added hazard could be in operation of USACE flood control
39 structures within the ABLP that could result in the
40 evacuation/removal of all visitors. This is a circumstance for which
41 warnings and emergency operations systems have been
42 developed.

1 **9.4.4 Endangered/Threatened Species**

2 The Louisiana black bear and American alligator currently are the
3 only Federally listed species protected by the Endangered Species
4 Act present (or potentially present) on USACE lands. No bald
5 eagle nest sites have been identified on USACE fee-title lands.
6 Constraints associated with the Louisiana black bear are the same
7 as those discussed for the BDOA in Section 7.4.4.
8

9 **9.4.5 Archaeological and Cultural Resources**

10 Archaeological resources are an irreplaceable part of the Nation's
11 heritage and therefore must be protected to prevent their loss and
12 destruction. The OMP discusses the management of such areas in
13 detail. It is possible that some disruption of an unknown site could
14 occur in connection with forest management practices. Certain
15 measures shall be taken to help prevent any such occurrences.
16 These actions include restriction of logging operations to dry
17 weather to prevent soil disturbance and erosion, minimizing soil
18 disturbance during construction of roads, trails, and firebreaks, and
19 safeguarding any newly discovered archaeological sites or relics.
20

21 **9.4.6 Aesthetics**

22 Aesthetic constraints on the SBA are the same as those discussed
23 for the BDOA in Section 8.4.5.
24

25 **9.4.7 Forest Openings**

26 Until inventory data is compiled and forested areas defined; there is
27 insufficient data to determine if permanent forest openings or a
28 planned cycle to provide continuous openings are needed. The
29 planned forest management activities will create temporary
30 openings throughout the managed forest acreage, and this may be
31 sufficient for this type of habitat requirement. As data are
32 compiled, this section will be updated.
33

34 **9.4.8 Insect and Disease Control**

35 Many hardwood stands, because of stress brought about by
36 overstocked conditions, flooding, drought (Broadfoot and Toole
37 1958), over-maturity, fire, lightning, etc. (Houston 1971), have been
38 secondarily attacked by a variety of insect pests. Insects seldom
39 kill hardwood trees, but they cause loss of growth and further
40 decline in vigor. Numerous diseases in several different categories
41 occur on hardwood trees.

1 The most practical way to control insects and diseases is the
2 prevention of injuries (fire, logging, etc.) and the promotion of stand
3 conditions favoring healthy and vigorous trees that are more
4 resistant to infestation (Rexrode, 1971). The goal is to maintain
5 insect populations at suitable levels to provide an adequate supply
6 for the various wildlife species that feed upon them, while at the
7 same time holding habitat losses at acceptable levels.

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SECTION 10.0
LANDS ACQUIRED FOR THE ABFS, FLOOD CONTROL AND
ENVIRONMENTAL PROTECTION FEATURES (EASEMENT LANDS)

1 **10.0 LANDS ACQUIRED FOR THE ABFS, FLOOD CONTROL AND**
2 **ENVIRONMENTAL PROTECTION FEATURES (EASEMENT LANDS)**

3
4 **10.1 EASEMENT LAND ALLOCATIONS AND CLASSIFICATIONS FOR**
5 **DEVELOPMENT AND RESOURCE MANAGEMENT**
6

7 Pursuant to the flood control and environmental protection features
8 of the authorized ABFS project, comprehensive easements for
9 flowage (these easements will only be acquired over 59,000 acres
10 within the below described 338,000 acres), developmental control
11 and environmental protection, as appropriate, will be acquired,
12 either by direct purchase or through eminent domain
13 (condemnation) proceedings, over approximately 338,000 acres
14 within the project area. Easements for developmental control and
15 environmental protection purposes will not be placed over
16 developed areas within the ABFS.
17

18 The multipurpose easements being acquired for the flood control
19 and environmental protection project features consist of the
20 following rights:
21

22 Flood Control:

- 23
24 a) Flowage rights on 59,000 acres of land (included in the
25 below-described 338,000 acres).
26
27 b) Developmental control rights on 338,000 acres.
28

29 Environmental Protection:

- 30
31 a) Environmental protection rights on the same 338,000 acres.
32

33 There are several active existing USACE navigation and flood
34 control projects within the limits of the ABFS project. The
35 easements for the flood control and environmental protection
36 features of the ABFS project are being acquired over the existing
37 easements acquired for the navigation and other flood control
38 projects. None of the easements for the existing flood control and
39 navigation projects extended to all of the rights being acquired in
40 the easements being acquired for the ABFS flood control and
41 environmental protection features. Therefore, the decision was
42 made to proceed with acquisition of the ABFS flood control and
43 environmental protection easements in these areas as well. Both
44 the easements for the existing projects and the flood control and
45 environmental protection features of the ABFS project are being

1 managed in strict accordance with the terms and conditions of the
2 easement estate acquired.

3
4 Although the developmental control rights are being acquired for
5 the flood control feature of the ABFS project, this element of the
6 flood control feature provides a valuable contribution to fish and
7 wildlife enhancement that was recognized in the ABFS feasibility
8 study, which cannot be ignored. It prevents the conversion or
9 development of easement lands from existing uses. When taken in
10 conjunction with the rights acquired for the environmental
11 protection feature, the comprehensive rights acquired by USACE
12 ensure the passing of the MR&T project flood, while preserving,
13 protecting, and enhancing the environmental attributes unique to
14 the ABFS.

15 16 **10.1.1 Easement Land Allocations**

17 As stated in Section 6, there are four distinct project allocations:
18 Operations, Recreation, Fish and Wildlife Management, and
19 Mitigation.

20
21 The Operations land allocation is applicable to all easement lands.
22 The remaining three allocations do not apply.

23 24 **10.1.2 Easement Land Classifications**

25 Using the Land Classification System for Development and
26 Resource Management, the following classifications have been
27 made for the easement lands to be acquired by the USACE with
28 accompanying explanations.

29 30 **10.1.2.1 Operations**

31 This classification does not apply.

32 33 **10.1.2.2 Recreation**

34 This classification does not apply to easement lands.

35 36 **10.1.2.3 Mitigation**

37 There are no officially classified mitigation lands on easement
38 lands for the ABFS.

39 40 **10.1.2.4 Environmentally Sensitive Areas**

41 **10.1.2.4.1 Ecological Resources**

42 There likely exist lands that could be classified as ecologically
43 sensitive on lands that are encumbered or will be encumbered by

1 the easements acquired for the flood control and environmental
2 protection features of the ABFS project. The entire ABFS is in
3 itself an ecologically sensitive area, to some degree. If future
4 resources, including, but not limited to, black bear den trees,
5 eagle/kite nests, special rookeries, endangered plant communities,
6 etc., are discovered on lands encumbered by the easements
7 acquired for the flood control and environmental protection features
8 of the ABFS, then this classification will be applied to those sites.
9

10 10.1.2.4.2 Cultural Resources

11 The easement lands acquired, or to be acquired, for the flood
12 control and environmental protection features of the ABFS have not
13 been surveyed for cultural resources. There is a probability of the
14 presence of significant cultural resources on these easement lands.
15 Initial assessments for cultural resources should be conducted in
16 accordance with the Historic Properties Management Plan. If
17 cultural resources are discovered on the easement lands acquired
18 for the flood control and environmental protection features of the
19 ABFS, then this classification will be applied to those sites.
20

21 10.1.2.4.3 Aesthetic Resources

22 No lands are classified for aesthetic resources at this time.
23

24 **10.1.2.5 Multiple Resources Management**

25 This classification category and all its sub-categories do not apply.
26

27 **10.1.2.6 Easements**

28 Planned use and management of the easements being acquired
29 for purposes of the flood control and environmental protection
30 features of the ABFS will be in strict accordance with the terms and
31 conditions of the easement estate acquired for these features of
32 the project. Copies of the estates are provided in Appendix M.
33

34 **10.2 SPECIAL PROBLEMS AND CONSTRAINTS FOR EASEMENT LANDS**

35 **10.2.1 Natural Resource Hazards**

37 Natural resource hazards exist, ranging from poisonous snakes to
38 falling trees. There are no unique hazards that are different from
39 any other forested areas in the southeast United States. The only
40 added hazard could be in operation of USACE flood control
41 structures within the ABLP that could result in the
42 evacuation/removal of all visitors. This is a circumstance for which
43 warnings and emergency operations systems have been
44 developed.

1 **10.2.2 Endangered/Threatened Species**

2 The Louisiana black bear currently is the only Federally listed
3 species protected by the Endangered Species Act present (or
4 potentially present). Lands for which easements have been
5 acquired or will be acquired for the flood control and environmental
6 protection features are located within designated Critical Habitat for
7 the Louisiana black bear. Any project proposed on lands within
8 designated Critical Habitat would have to be coordinated with
9 USFWS under Section 7 of the Endangered Species Act. A few
10 sightings of female bears with cubs have been reported recently in
11 the areas in which easements for the flood control and
12 environmental protection features have been or will be acquired;
13 thus, this area is considered occupied bear habitat.

14
15 **10.2.3 Archaeological and Cultural Resources**

16 Archaeological resources are an irreplaceable part of the Nation's
17 heritage, and therefore, must be protected to prevent their loss and
18 destruction. It is possible that some disruption of a recorded or
19 unknown site may occur in connection with forest management and
20 camp development. Measures will be taken to help prevent any
21 such occurrences, including the denial of consents or permits.

22
23 **10.2.4 Fish and Wildlife Concerns**

24 The USACE retains no authority to manage fish and wildlife over
25 easement lands. USFWS and LDWF enforce applicable laws and
26 regulations.

SECTION 11.0
RECREATION DEVELOPMENT LANDS ACQUIRED FOR THE ABFS
PROJECT BY THE NON-FEDERAL SPONSOR(S)

1 **11.0 RECREATION DEVELOPMENT LANDS ACQUIRED FOR THE ABFS**
2 **PROJECT BY THE NON-FEDERAL SPONSOR(S)**

3
4 **11.1 RECREATION DEVELOPMENT LAND ALLOCATIONS AND**
5 **CLASSIFICATIONS FOR DEVELOPMENT AND RESOURCE MANAGEMENT**
6

7
8
9 *The non-Federal*
10 *sponsor is*
11 *responsible for*
12 *acquiring in fee*
13 *1,500 acres for*
14 *recreational*
15 *development.*
16

7 The recreation lands to be acquired are one of the features of the
8 ABFS. Approximately 1,500 acres will be acquired in fee by the
9 non-Federal sponsor(s). The recreation lands and plans for the
10 associated public facilities on them are not detailed and presented
11 in this Master Plan. The State of Louisiana has proposed a State
12 Master Plan, which contains concepts directed at the
13 implementation of the ABFS recreation feature; however, some of
14 the state concepts and proposals are not within the scope of the
15 current Federal authorization for the ABFS. Negotiation of the PPA
16 for the remainder of this feature will commence when the feature is
17 scheduled and funded.
18

19 As envisioned in the 1982 ABFS Feasibility Study, a rationale was
20 presented for proposing a recreational plan of development,
21 consistent with planning goals and objectives and compatible with
22 other plan features. These two main objectives were to optimize
23 public accessibility and use of the floodway and to minimize
24 adverse impacts on the existing biological and physical
25 environment.
26

27 In 1982, a conceptual plan was developed that recognized inherent
28 constraints, such as the flood-prone nature of the basin, the
29 dispersed local populations, the limited vehicular access, and the
30 extensive private land holdings. The plan considered the degree to
31 which a local sponsor would be willing and able to ultimately
32 acquire the land for the project, and participate in the construction
33 and O&M of any developed recreational facilities.
34

35 This section of the Master Plan is limited to classifications, and
36 management guidelines that are specific to the recreation
37 development lands that the non-Federal sponsor will acquire in fee
38 and contribute in perpetuity for the purposes of public outdoor
39 recreation.
40

41 **11.1.1 Recreation Development Land Allocations**

42 As stated in Section 6, there are four distinct project allocations:
43 Operations, Recreation, Fish and Wildlife Management, and
44 Mitigation.

1 On Recreation Development Lands, there will be two land
2 allocations: Operations and Recreation. The remaining two
3 allocations do not apply.
4

5 **11.1.2 Recreation Development Land Classifications**

6 Using the Land Classification System for Development and
7 Resource Management, the following classifications have been
8 made for the recreation development lands to be acquired by the
9 non-Federal sponsor(s), with accompanying explanations.
10

11 **11.1.2.1 Operations**

12 Operations lands at recreation development lands will be minimal
13 or not required.
14

15 **11.1.2.2 Recreation**

16 These recreation development lands will offer intensive recreation
17 development initially and in the future, including areas for multiple
18 resource use. These areas may include concession, resort, and
19 quasi-public development. It is assumed that the bulk of the
20 recreation lands will be classified as recreation.
21

22 **11.1.2.3 Mitigation**

23 There are no officially classified mitigation lands.
24

25 **11.1.2.4 Environmentally Sensitive Areas**

26 As part of the conceptual recreation development plan, 200 of the
27 1,500 acres to be acquired by the non-Federal sponsor(s) have
28 been designated for special and unique areas specifically for
29 interpreting environmentally and culturally significant resources.
30 This acreage has not, as yet, been identified but may be linked to a
31 project interpretive center.
32

33 11.1.2.4.1 Ecological Resources

34 There likely exist lands that will be classified as ecologically
35 sensitive in the recreation development lands. The entire ABFS is
36 in itself an ecologically sensitive area. If future resources, such as
37 black bear den trees, eagle/kite nests, special rookeries,
38 endangered plant communities, etc., are located, then this
39 classification will be applied to those sites.
40

41 11.1.2.4.2 Cultural Resources

42 The recreation development lands have not been surveyed for
43 cultural resources. There is a probability of the presence of

1 significant cultural resources on some of the recreation
2 development lands, but until these lands are surveyed and
3 assessed for cultural resources, this land classification cannot be
4 employed. Identification and assessment of any ABFS cultural
5 resources will be under the auspices of USACE in coordination with
6 the Louisiana SHPO.

7 8 11.1.2.4.3 Aesthetic Resources

9 No lands are classified for aesthetic resources at this time.

10 11 **11.1.2.5 Multiple Resources Management**

12 This classification category, with all its sub-categories, will be
13 applicable to some specific areas on recreation development lands.
14 At some locations, a particular sub-category will be dominant, but
15 by and large, all three sub-categories are compatible with each
16 other.

17 18 11.1.2.5.1 Vegetative Management

19 This land classification subcategory may generally apply to all of
20 the recreation development lands, with an emphasis on the
21 retention or revegetation of the historical forest and vegetative
22 cover.

23 24 11.1.2.5.2 Wildlife Management General (Fish and Wildlife Management Activities)

25 This sub-category is applied to those lands where specific, active
26 wildlife management programs will be ongoing. There is a specific
27 potential for wildlife management in conjunction with the
28 management of recreation development lands. These may range
29 from small-scale pilot projects of erecting wood duck boxes, to
30 stocking small water bodies in the project area with indigenous
31 fishes.

32 33 11.1.2.5.3 Recreation Low-Density

34 This sub-category is applied to select portions of the recreation
35 development lands not already intensively developed. Indeed, the
36 real purpose of the recreation feature is to provide for public access
37 to the ABFS project area. All allowed recreational activities, such
38 as fishing, wildlife observation, and photography, fall into this
39 classification and can occur in, or peripherally to, the developed
40 areas.

41 42 11.1.2.5.4 Inactive and/or Future Recreation Areas

43 This sub-category is marginally applicable at present. There are no
44 appreciable future recreation developments other than those

1 already envisioned for the Recreational Development Lands.
2 There will be future development as monies and expansions are
3 warranted, but the lands are acquired for a very specific purpose
4 and the intent is to restrict intensive development within their
5 boundaries.
6

7 **11.1.2.6 Easement Lands**

8 Some easement lands may be required in support of the
9 construction and O&M of the recreation feature. If required, the
10 planned use and management of the easement lands will be in
11 strict accordance with the terms of the easement estate.
12

13 **11.2 NATURAL RESOURCES MANAGEMENT GUIDELINES FOR THE** 14 **RECREATION DEVELOPMENT LANDS**

15
16 These guidelines are utilized by USACE to provide proper
17 stewardship on its own lands within the project. If USACE
18 participates with a non-Federal sponsor to develop and construct
19 recreation facilities on lands that lend themselves to the utilization
20 of these natural resources, it is likely that USACE would
21 recommend the use of these same management guidelines to the
22 non-Federal sponsor(s) through some type of agreement, such as
23 a PPA and the OMRR&R plan referenced therein, as well as the
24 AMPs. This section is conceptual and not complete. It is
25 dependent on the acquisition by the non-Federal sponsor(s) of
26 recreation development lands and will be subject to revisions at
27 that time.
28

29 **11.2.1 Vegetative Management Guidelines**

30 **11.2.1.1 Primary Management Objectives**

31 Forest resources on recreation development lands will be managed
32 to maintain and enhance fish and wildlife habitats where possible,
33 and will not be used for commercial timber yields. Ecosystem
34 management goals will incorporate natural disturbance regimes to
35 maintain a shifting-mosaic, steady-state forest. No intensive
36 silviculture is planned for recreation development lands, although
37 conceptually, natural processes will be supplemented, where and
38 when necessary, to enhance wildlife habitat values. A detailed
39 description of USACE's conceptual forest management plan is
40 contained in the OMP.
41

42 The primary vegetative management objective in the areas
43 acquired for recreation development lands is to manage the
44 vegetation in a manner that will preserve, maintain, and enhance

1 the natural vegetation and habitat or, at a minimum, to limit its
2 destruction.

3
4 Management of forest resources on recreation development lands
5 will be based on adaptive management concepts, where possible,
6 with a primary emphasis on ecosystem management, rather than
7 on development and implementation of rigid silvicultural
8 prescriptions. Natural disturbance regimes will be incorporated as
9 part of the adaptive plan for suitable sites. The adaptive approach
10 is a flexible one, based on developing stand treatments by
11 analyzing baseline data, followed by research and monitoring of the
12 ongoing, long-term results of methods implemented in the field.
13 Original recommendations are adjusted, as needed, to achieve
14 revised objectives. The silvicultural practices recommended in the
15 Master Plan and the OMP are aimed at enhancement of wildlife
16 habitat and preservation of the natural vegetation for use by the
17 outdoor enthusiastic public.
18

19 **11.2.1.2 Forest Management Guidelines**

20 Implementing management practices to meet the following specific
21 guidelines will attain broad management goals:

- 22
- 23 • Improve erosion control by maintaining adequate forest and
24 herbaceous cover crops and using appropriate silvicultural
25 practices.
- 26
- 27 • Improve or maintain interspersion of forest successional
28 stages and community types.
- 29
- 30 • Restore converted or deteriorated areas to appropriate
31 forest types.
- 32
- 33 • Maintain adequate snags and other nesting cavities for
34 forest-dwelling species.
- 35
- 36 • Maintain suitable existing forest types.
- 37
- 38 • Control insects, disease, and wildfire, and restore weather-
39 damaged forest stands, as necessary.
- 40
- 41 • Manage forest stands to ensure minimal impact on other
42 natural resources such as aquatic ecosystems.
- 43
- 44 • Provide and maintain significant forest resource areas
45 supporting locally rare species of plants and animals.
46

1 **11.2.1.3 Public Use Considerations Related to Vegetation Management**

2 Project allocated resources will be managed to meet the following
3 public use objectives:

- 4
- 5 • Provide a diversity of habitat and forest types for
6 consumptive and non-consumptive recreational pursuits.
7
- 8 • Provide safe and adequate access to forested lands for
9 recreational purposes.
10
- 11 • Provide educational and research opportunities.
12
- 13 • Maintain or improve the aesthetic character of ABFS project
14 lands.
15

16 **11.2.1.4 Natural and Unique Areas**

17 Certain areas within the acquired Recreation Development Lands
18 will be set aside for this purpose. Once these areas are identified,
19 maps will be inserted into pertinent documents, such as the
20 OMR&R Plan, OMP, and revised Master Plans showing their
21 locations. The primary objectives of the "Natural Areas" are:

- 22
- 23 • ensure the preservation of a variety of significant areas for
24 public use that, when considered together, illustrate the
25 diversity of the natural environment.
26
- 27 • to preserve for the future valuable environments that are
28 essentially unmodified by humans.
29
- 30 • to provide research and educational opportunities for
31 scientists and others in the observation, study, and
32 monitoring of the environment.
33
- 34 • to contribute to the national effort to preserve a full range of
35 genetic and behavior diversity for native plants and animals,
36 including endangered or threatened species.
37

38 The only management activities that may occur within these areas
39 are the removal of beaver dams, which may impound water, or
40 stopping the spread of insect and/or disease outbreaks if they
41 threaten the integrity of other managed property.

1 **11.2.2 Fish and Wildlife Management Guidelines**

2 **11.2.2.1 Existing Management Agreements with the Non-Federal Sponsor(s)**

3 Although the non-Federal sponsor(s) will be responsible for the fish
4 and wildlife management of this land, no formalized agreement has
5 been enacted as of yet for the majority of the elements of the
6 recreation feature of the ABFS. Approval of the design
7 memoranda for the remaining elements of the recreation feature of
8 the ABFS and the execution of agreements to implement the
9 design memoranda, together with the acquisition of lands in
10 support thereof, will better define this section. It is assumed that
11 LDWF's Enforcement Division will provide the non-Federal
12 sponsor(s) of the recreational development lands with needed law
13 enforcement activities for state and Federal fish and game laws.
14

15 **11.2.2.2 Future Management Agreements with Non-Federal Sponsor(s)**

16 USACE and the non-Federal sponsor(s) will develop and sign
17 PPAs that will detail the management responsibilities for this area.
18 It is possible that there will be multiple non-Federal sponsors for
19 the PPAs for some of the recreation feature elements.
20

21 **11.2.2.3 Primary Management Objectives**

22 Wildlife and fisheries resources will be managed in accordance
23 with PL 85-624, ER 1130-2-540, and ER 1165-2-400, whereby
24 resources are utilized in a multiple-use concept so that future
25 generations can enjoy their natural heritage. Non-consumptive
26 management practices will receive equal consideration with those
27 practices for consumptive game and fish management, where
28 allowable and practical. Special consideration will be given to
29 endangered/threatened species and species of concern as listed in
30 Section 2.1.6.4 of this document when manipulating habitat.
31

32 Management practices on lands, under this feature, will consider
33 management practices on adjacent lands. For example,
34 management targeted specifically for fisheries habitat will consider
35 those water quality improvements in the vicinity of the recreational
36 lands.
37

38 **11.2.2.4 Wildlife and Fisheries Management Guidelines**

39 Implementing management practices to meet the following specific
40 objectives will attain broad management goals:

- 41
- 42 • Improve or maintain interspersion of plant successional
43 stages, community types, and open lands.

- Restore some converted areas to native vegetation and improve wildlife cover.
- Maintain adequate nesting cavities for animal species.
- Maintain existing wetland habitats and restore converted wetlands, as appropriate.
- Restore native populations, as appropriate.
- Conduct O&M activities in a manner that minimizes impact on land- and aquatic-based habitats and inhabitants.

11.2.2.5 Public Recreation Use Guidelines Associated With Fish and Wildlife Management

Erection of signs, interpretation, trail improvement, and cooperative work with volunteer organizations will be conducted, in addition to habitat management, in order to meet the objectives of providing high-quality recreation and educational experiences for the public on ABFS lands. The ABFS allocated resources will be managed to meet the following public use objectives:

- Provide high-quality non-consumptive wildlife- and fish-oriented recreation.
- Provide high-quality consumptive wildlife- and fish-oriented recreation, if possible, without endangering the public visitor using the developed facilities.
- Provide safe and adequate access to the project’s public access lands and wildlife and fish management areas suited for recreation.
- Provide educational and research opportunities.
- Maintain or improve the aesthetic character of project lands.
- Provide and maintain significant wildlife and fish resource areas, including wetlands, areas supporting locally rare species of plants, animals, fish, and unique habitat.

11.2.2.6 Resource Management Units

At this time, the ABFS project area has not been separated into resource management units. After an initial survey of habitats has been completed, the land will be separated into resource

1 management units in order to facilitate management strategies,
2 where desirable. Items considered in the formulation of resource
3 management recommendations include aesthetics, disease
4 problems, soil erosion potential, wildlife carrying capacity, unique
5 resources, management potential, and human resources and
6 funding.

8 **11.2.3 Recreation Units**

9 Recreation development will be intensive to support public use of
10 public access lands in the ABFS. Public access lands are
11 dedicated to traditional outdoor recreational uses in the ABFS (i.e.,
12 fishing, hunting, and hiking). Recreation development lands are to
13 be developed to support a natural resource-oriented recreational
14 experience, with traditional types of outdoor recreation
15 development (i.e., campgrounds, boat ramps, etc.). These
16 developed areas will serve as the jumping-off place for many to
17 realize their outdoor recreation experiences in the ABFS.

19 **11.2.3.1 Public Hunting and Fishing**

20 Public hunting and fishing may occur on less intensely developed
21 recreation lands. Commercial crawfishing and commercial fishing
22 may be allowed on recreation development lands, but will not take
23 managerial precedence over the public-use aspects of the area.
24 Traditional commercial uses, such as crawfishing, are prevalent
25 throughout the ABFS, especially in the swamplands. Recreation
26 development lands may preclude these activities in highly
27 developed intensely used areas. This concern will be integrated
28 into the total spectrum of management of the resource with respect
29 to the public, and will be accommodated, where feasible.

31 **11.2.3.2 Non-Consumptive Recreation**

32 Non-consumptive recreational activities, such as wildlife
33 observation and photography, are not prevalent at present.
34 Development of nature trails and water trails are envisioned for the
35 future. In addition, camping and other support facilities to sustain
36 visitors to the ABFS will be developed.

38 **11.3 PLAN OF DEVELOPMENT AND DESIGN CRITERIA FOR THE RECREATION** 39 **DEVELOPMENT LANDS**

41 **11.3.1 Conceptual Plans**

42 **11.3.1.1 The USACE's Conceptual Plan**

43 In the ABFS 1982 Feasibility Study, as approved by the Report of
44 the Chief of Engineers dated February 28, 1983, conceptual plans

1 for the Recreation development lands were formulated. The
2 recommended use of the 1,500 acres was summarized as follows:

3		
4	3 Developed Campgrounds	600 acres
5	7 Primitive Campgrounds	350 acres
6	1 Project Visitor Center	100 acres
7	8 Boat launching ramps (2 lanes)	80 acres
8	7 Boat launching ramps (5 lanes)	70 acres
9	1 Nature-Interpretive Trail	100 acres
10	Special and Unique Areas	200 acres

11
12 The acquisition and development of these areas would
13 accommodate and support additional public-use of the ABFS,
14 provide for additional entry into the ABFS and access to its
15 resources, and protect and aid in interpreting specific
16 environmentally and culturally significant resources.

17
18 The statutory authority for the recreation feature of the ABFS
19 specifies that the cost of construction of this feature will be 50
20 percent Federal and 50 percent non-Federal. The non-Federal
21 sponsor(s) is required to provide all of the lands, easements, rights-
22 of-way, and dredged material disposal areas required for the
23 recreation feature and to perform all necessary relocations, subject
24 to receipt of a credit for the value of said contribution against its
25 share of the cost of construction. All cost of O&M, repair,
26 replacement, and rehabilitation would be borne by the non-Federal
27 sponsor(s). The one exception to this requirement is the project
28 visitor center, for which the OMRR&R costs will be a Federal cost
29 in accordance with WRDA of 2007. The non-Federal sponsor(s) will
30 also be required to hold and save the United States free from
31 damages due to the construction or O&M of the recreation feature,
32 except for damages due to the fault or negligence of the United
33 States or its contractors.

34 35 **11.3.2 Facilities/Actions Proposed for Immediate Development**

36 ***11.3.2.1 Atchafalaya River Landing, Simmesport, Louisiana, and Myette Point*** 37 ***Landing, St. Mary Parish, Louisiana***

38 Two boat launch developments (Atchafalaya River Landing and
39 Myette Point) of the recreation feature have been constructed, and
40 PPAs have been negotiated with non-Federal sponsors. These
41 areas along with other boat launch developments will continue to
42 be high priority for the ABFS Recreation feature.

1 **11.3.3 Future Recreation Development**

2 Although this section is reserved for development, subsequent to
3 future land acquisition, the following will be considered:

- 4
- 5 • Recreation development areas proposed in the state's
- 6 Master Plan, insofar as the recreation developments
- 7 proposed in the state's Master Plan represent elements that
- 8 are within the statutorily authorized project area, are
- 9 authorized by existing project statutory authority and USACE
- 10 policy and guidelines, are environmentally compliant,
- 11 scheduled and funded, and subject to a binding PPA(s) with
- 12 the non-Federal sponsor(s);
- 13
- 14 • Development of a system of interlocking nature trails that
- 15 can be used by the public with varying physical capabilities
- 16 and interests;
- 17
- 18 • Development of a perimeter staging area, including parking,
- 19 launch area to access the interior to accommodate tourists;
- 20
- 21 • Development of sanitary facilities at staging areas;
- 22
- 23 • Development of interpretive facilities as components of an
- 24 interpretive program that will be conducted, operated, and
- 25 maintained by USACE; and
- 26
- 27 • Consideration of primitive camp sites at select locations.
- 28

29 **11.4 SPECIAL PROBLEMS AND CONSTRAINTS FOR RECREATION**
30 **DEVELOPMENT LANDS**

31
32 **11.4.1 Law Enforcement**

33 This section is reserved for development subsequent to future land
34 acquisition.

35
36 **11.4.2 Natural Resource Hazards**

37 Natural resource hazards are similar to those discussed for other
38 public access lands in the ABFS.

39
40 **11.4.3 Endangered/Threatened Species**

41 Constraints associated with the Louisiana black bear would be
42 similar to those discussed for other compartments in the ABFS.
43 Any recreation feature that may affect Louisiana black bear or

1 modify designated Critical Habitat for the bear must be coordinated
2 with USFWS.
3

4 **11.4.4 Archaeological and Cultural Resources**

5 Archaeological resources are an irreplaceable part of the Nation's
6 heritage and therefore must be protected to prevent their loss and
7 destruction. It is possible that some disruption of recorded or
8 unknown sites could occur in connection with implementation of the
9 recreation feature. Measures shall be taken to help prevent any
10 such occurrences. These actions include cultural resource
11 inventories during site planning and design, minimizing soil
12 disturbance during construction of roads, trails, and other features,
13 and safeguarding any newly discovered archaeological sites or
14 relics.
15

16 **11.4.5 Aesthetics**

17 The impact on aesthetics will be considered in all management
18 decisions, and sincere attempts shall be made to minimize any
19 adverse impacts as much as practicable. Particular attention will
20 be given to those areas which receive relatively heavy public use,
21 such as navigable waterways, public access roads, parking areas,
22 boat launch facilities, and interpretive trails. An aesthetic zone
23 bordering all major waterways is proposed, and forested stands
24 within the zone will be managed to protect and enhance their
25 scenic qualities. If possible, reforestation activities will be planned
26 to shield timber cut areas from public view.
27

28 **11.4.6 Wildfire**

29 This section is reserved to be coordinated with the non-Federal
30 sponsor(s).
31

32 **11.4.7 Insect and Disease Control**

33 Constraints associated with insect and disease control are the
34 same as those discussed for other public access lands in the
35 ABFS.

SECTION 12.0
WATER MANAGEMENT UNITS



12.0 WATER MANAGEMENT UNITS

12.1 DEVELOPMENT AND RESOURCE MANAGEMENT FOR WMUs

*Henderson Lake
WMU was replaced
by Flat Lake WMU
as a pilot unit in
1997.*

Initially, 13 WMUs were considered for implementation in the ABFS Feasibility Study dated January 1982. Consideration was given based on how well the hydrology of a particular area could be managed to provide the desired environmental effects. Out of the 13 units evaluated, 5 (Buffalo Cove, Henderson Lake, Beau Bayou, Flat Lake, and Cocodrie Swamp) were determined to have the greatest potential for restoring historic overflow conditions to benefit the ecosystem and were designated for evaluation and detailed plan comparison in the Recommended Plan in the above-referenced report as potential water management units. In order to ensure that the strategies for water management produce the desired results, the Chief of Engineers' Report recommended two units to be implemented as pilot WMUs. Based on an evaluation of these pilot units, recommendations would be made on the engineering, operational success, and environmental feasibility of developing other WMUs, with implementation of future units to be at the discretion of the Chief of Engineers. The Buffalo Cove and Henderson units were selected as pilot WMUs.

In 1997, a water management working group was formed by the State of Louisiana to address the issue of WMUs and make recommendations. In 1997, the Flat Lake WMU replaced the Henderson Lake WMU as a pilot unit. The management working group removed the Henderson Lake WMU as a pilot unit. Five of the original 13 WMUs were determined to have the greatest potential to restore historic overflow conditions. The group recommended that the first pilot unit be Buffalo Cove and the second pilot unit be Flat Lake (currently referred to as the East Grand Lake study area, which is Flat Lake and Upper Belle River units combined). User groups utilizing the East Grand Lake area noted that another valuable resource was being lost due to the increased sedimentation and poor circulation within the Grand Lake system. The Flat Lake Management Unit is included in the State Master Plan for the Atchafalaya Basin Floodway System, completed in April 1998.

12.1.1 Water Management Unit Land Allocations

As stated in Section 6, there are four distinct project allocations: Operations, Recreation, Fish and Wildlife Management, and Mitigation. The Operations land allocation is applicable to all WMU lands. The remaining three allocations do not apply.

1 **12.1.2 Water Management Unit Land Classifications**

2 Using the Land Classification System for Development and
3 Resource Management, the following classifications have been
4 made for the WMU lands (see Appendix C, Figure 8). The land
5 classification scheme is intended to fully utilize ABFS lands relative
6 to legislative authority and policy directives. The resource use
7 objectives listed in Section 5 of this plan reflect these authorities
8 and policy directives, and therefore, they provide the goals for the
9 classification process.

10
11 **12.1.2.1 Operations**

12 This classification does not apply.

13
14 **12.1.2.2 Recreation**

15 This classification does not apply.

16
17 **12.1.2.3 Mitigation**

18 There are no officially classified mitigation lands in the easement
19 lands area for this feature.

20
21 **12.1.2.4 Environmentally Sensitive Areas**

22 12.1.2.4.1 Ecological Resources

23 At this time, no lands are classified as ecologically sensitive within
24 the two pilot WMUs. If future resources, such as black bear den
25 trees, eagle/kite nests, special rookeries, endangered plant
26 communities, etc., are located, then this designation will be applied
27 to those sites, with a goal to preserve or retain the values
28 associated with these resources within the confines of the real
29 estate interests acquired for this feature.

30
31 12.1.2.4.2 Cultural Resources

32 With the exception of the Bayou Eugene Prototype Model Test
33 area, lands have not been surveyed for cultural resources. There
34 is a probability of the presence of significant cultural resources on
35 some of the WMU lands, but until these lands are surveyed and
36 assessed for cultural resources, this land classification cannot be
37 employed. Identification and assessment of any ABFS project-
38 related cultural resources will be under the direction of USACE in
39 coordination with the Louisiana SHPO.

40
41 12.1.2.4.3 Aesthetic Resources

42 No lands are classified for aesthetic resources at this time.

1 **12.1.2.5 Multiple Resource Management**

2 This classification with all its subcategories does not apply.

3
4 **12.1.2.6 Easement Lands**

5 Easement lands will be required in support of the construction, and
6 O&M of the WMU feature. The planned use and management of
7 the easement lands will be in strict accordance with the terms of
8 the easement estate.
9

10 **12.2 GOALS OF WMUs**

11
12 **12.2.1 Original Goals and Management Plan**

13 The goals of the management units, as stated in the Atchafalaya
14 Basin Floodway System, Louisiana, Final EIS (1982), were to
15 restore and preserve unique and environmental values by restoring
16 historic overflow patterns, ensuring proper water movement
17 through the units, and where possible, restricting sediment
18 movement and deposition in the units. The EIS noted that historic
19 levels of flooding should be preserved.
20

21 These goals were to be originally initiated using active water
22 management practices. Active management would be
23 accomplished by constructing levees around the perimeter of each
24 management unit to a height equal to the river's stage during the
25 average annual peak flow. In addition, water coming in and out of
26 the area would be controlled by a series of flap gates and weirs.
27 Clearing and snagging, bank degrading, and channel closing would
28 be utilized to control water movement within the unit. This concept
29 of water management would control the volume and movement of
30 water by creating a situation very similar to an artificial
31 impoundment. In this scenario, access would be provided by boat
32 rollovers.
33

34 **12.2.2 Current Goals and Management Plans**

35 WMU areas are dynamic in nature and have undergone changes
36 since original plan formulation. As a result of these changes within
37 the WMUs, the management goals have been modified and
38 consolidated into one goal to better address the conditions that
39 now exist within the units and are likely to occur in the future. The
40 modified management goal is to prolong the life expectancy of
41 productive habitat that will become scarce over time (primarily
42 aquatic and baldcypress-tupelo gum habitats). The goal will be
43 accomplished by restricting or redirecting sediments and initiating
44 or restoring water circulation patterns. Sediments will be managed

*The goal of the
WMUs is to prolong
the life expectancy
of scarce habitats.*

1 so they will be directed to areas already undergoing accretion, thus
2 prolonging the existence of swamp and aquatic habitat.

3
4 The new goal will be implemented using passive water
5 management techniques, rather than through active management.
6 Using passive water management, north-to-south water flow will be
7 promoted within the unit through channel closures, openings, and
8 realignments; modifying heights (raise, lower, or weir) of natural or
9 constructed levees; or creation or restoration of natural or
10 constructed channels within the unit to improve internal circulation.
11 Generally, water will not be artificially ponded within a unit. Where
12 it is necessary to artificially pond water within the unit, USACE will
13 acquire the appropriate real estate interests.

14 15 **12.3 IMPLEMENTATION STATUS**

16
17 The WMUs remain unscheduled and unfunded. The State of
18 Louisiana has been identified as the non-Federal sponsor for the
19 WMUs. The state has acknowledged its support for the
20 management unit concept, as well as a phased method of
21 implementation. The state has also acknowledged its support of
22 the WMU plans in the State's 1998 Master Plan.

23 24 **12.4 PLAN IMPLEMENTATION**

25 26 **12.4.1 Original Plan Implementation**

27 As documented in the 1982 ABFS Feasibility Study, plans for the
28 pilot WMUs would be developed by USACE in conjunction with
29 representatives of USFWS, EPA, and appropriate state agencies.
30 Subsequent to construction, the units would be closely monitored.
31 An evaluation of performance would be made by representatives of
32 the cooperating agencies using their developed criteria. The
33 criteria would address the pilot units' effectiveness in enhancing the
34 aquatic environment. Based on the group's evaluation and
35 recommendations, requests for funding to implement other units
36 would be made.

37
38 The original, more traditional approach to project implementation,
39 establishes baseline engineering and environmental data to enable
40 design and then construction of the feature. This traditional type of
41 approach is primarily utilized for developing flood damage reduction
42 features required to fulfill USACE's flood damage reduction
43 mission. This type of approach is applicable to projects where
44 identifiable, predictable conditions exist and the engineering
45 involves utilizing proven designs. If this traditional type of
46 implementation were used here, a 1- to 2-year pre-construction

1 monitoring program would be established to identify the existing
2 hydrology, water quality, and fishery conditions within the area.
3 Following construction, a continuing monitoring program would be
4 established to determine the success of the pilot unit.
5

6
7
8
9
10 **WMU areas are**
11 **changed**
12 **instantaneously by**
13 **events such as the**
14 **2011 and 1973**
15 **floods.**
16

17 By definition, pilot units are trial units where experimentation takes
18 place; features that work are proven and features that do not work
19 are modified or no longer used. The traditional construction and
20 design approach is not flexible and does not allow for this
21 experimentation. The process does not allow for changes in goals,
22 objectives, or response to significant events that may or may not
23 occur during the course of the study. It must be remembered that
24 these WMUs are living, dynamically changing systems, not frozen
25 in time. With the traditional study method, it is difficult to predict
26 the timing or magnitude of changes, and therefore, it is difficult to
27 design a project that can respond well to an area that is continually
28 evolving and changing. Changes in the WMU areas are both
29 process-driven and event-driven. Events, such as the 2011 flood,
30 1973 flood and Hurricane Andrew in 1992, result in "instantaneous
31 changes" from which the WMU areas recover slowly.
32

33 Sedimentation and circulation changes are ongoing processes, and
34 through time, gradually affect the WMU areas through their
35 cumulative effects. Human-induced activities, such as the
36 construction of oil and gas pipeline canals, also can be considered
37 as significant events that affect the WMUs. As the WMU areas
38 evolve and sediments continue to accrete, periodic maintenance
39 will be needed on project components to ensure that they function
40 in accordance with the design purposes. The level of requisite
41 maintenance is dependent on how the WMU areas respond to both
42 natural and human-induced events. In the traditional approach,
43 assumptions are made as to when and how much maintenance will
44 be performed. This approach requires a great deal of analysis,
45 prior to construction, to ensure that all maintenance likely to be
46 performed over the life of the project, and the cost estimate of such
47 maintenance, is identified. Cost estimates are elevated to assure
48 that funds are available for "worst case" maintenance needs.
49

50 The traditional approach calls for designing and building the
51 complete project all at one time. This approach may result in
52 increased initial costs, since feature construction is based on
53 projected data rather than on monitored and measured results from
54 phased, feature construction. Projected construction applied to
55 dynamic environments tends to lead to overdesigning and
56 overbuilding to assure that all the variations in environmental
57 conditions are addressed by the proposed features.
58

1 In summary, the traditional implementation approach lacks
2 flexibility, can't easily accommodate timely and responsive changes
3 necessary when working in a dynamic environment, and can cause
4 increased first costs and unnecessary increases in construction
5 and maintenance costs.
6

7 **12.4.2 Adaptive Management Plan Implementation (Current)**

8
9
10
11
12
13
14
15
16
17 *An adaptive*
18 *management*
19 *approach is best*
20 *suited for dynamic*
21 *ecosystems.*
22

23 In dynamic, living systems, such as evolving swamp ecosystems
24 found in the AFBS project area, traditional approaches do not
25 produce desired or timely results, nor are traditional approaches
26 suited for pilot programs. This is why an Adaptive Management
27 approach is proposed, which allows for modifications or additions in
28 project features based on the continual monitoring of conditions
29 prior to, during, and following project construction. Adaptive
30 management is a continuing process of planning, implementation,
31 monitoring, and evaluation to adjust management strategies and
32 project components to meet the goals and objectives. The
33 uniqueness of this plan is that the integral project facets will be
34 designed, constructed, and operated simultaneously, along with
35 "effects monitoring" of a particular facet to determine its
36 compatibility with the overall plan. Each subsequent facet will be
37 funded and phased-in based on its ability to meet the goal of the
38 overall plan, thus the "Outcome-Based Funding." During this
39 process, each WMU feature will be monitored for compatibility with
40 the overall goal of the WMU. If a particular facet does not produce
41 the predicted result necessary to contribute to the purpose of the
42 overall plan, or is deemed detrimental to the overall plan, either
43 funding for modifications to that facet may be required, or the facet
44 may be terminated, if necessary. This approach will require
45 simultaneous funding for ongoing monitoring, evaluation, design,
46 and construction.

33 In summary, adaptive management is a continuing process where
34 the management strategies are broad general statements
35 identifying the general direction to be taken in subsequent planning
36 and management actions. A desired range of future conditions is
37 provided as a portrayal of land and resource conditions that are
38 expected to result over the next 50 years or as long as the project
39 objectives are achieved. This helps direct the future management
40 actions by providing a vision of these long-term conditions and
41 strategies.
42

43 Preliminary long-term strategies have been developed for the
44 Buffalo Cove Management Unit incorporating the concerns of the
45 various user groups in the area. These strategies have been
46 prioritized and are in the process of being evaluated. Objectives

1 have been developed that can be used as indicators to measure
2 progress toward attaining the water management goal, and at the
3 same time, addressing short- and long-term activities to achieve
4 the goal. Management objectives of the pilot WMUs are expected
5 to move environmental conditions toward the desired range of
6 future conditions that can be implemented within an agreed-on time
7 frame. The initial document will include an estimation of the level
8 of management components to be implemented resulting from this
9 direction.

10
11 This approach provides the flexibility to modify features and to
12 incorporate unexpected changes. In addition, this method of
13 implementation can result in lower costs than the traditional
14 approaches due to the reduction in initial engineering and design
15 costs. These design cost reductions can be realized by minimizing
16 the complexity of design. Simple, multiple small-scale features will
17 be utilized that accomplish the same purpose as more complex,
18 often costlier features. The smaller features are also reversible if
19 monitoring reveals detrimental results, whereas large features
20 either cannot be reversed, or sometimes can be reversed, but at a
21 high cost. Due to the reduced time requirements for engineering
22 and design, construction can begin earlier; therefore,
23 environmental benefits begin accruing earlier. By utilizing
24 monitored, phased construction, the possibility of overbuilding or
25 overdesigning to achieve the WMU goal is greatly reduced.
26 Utilizing this approach, a true "pilot" management unit is realized,
27 which can be used to make other WMUs more effective. This
28 approach is also more conducive to encouraging public
29 involvement and being able to incorporate changes as public
30 opinion and needs change. This type of approach is also more
31 responsive to public needs and can produce results in a more
32 timely fashion.

33
34 In summary, advantages of this adaptive management approach
35 are reduced initial costs; reduced possibility for overdesigning and
36 overbuilding; less potential for irreversible damage to the fragile,
37 dynamic swamp ecosystem; and valuable information, which can
38 be applied to other WMUs. It also provides a model for adjusting
39 strategies and objectives as new information develops through
40 monitoring, changes in public desires, or other means. In short, the
41 pilot management units will become just those - pilot units.
42 Presently, the public, including state and Federal agencies with an
43 interest in water management support this adaptive management
44 unit concept.

1 This is a new approach which requires a change in planning,
2 engineering design, and funding philosophies. The detailed cost of
3 the WMU will not be known upon completion of the initial design
4 document. The exact completion date for a given water
5 management unit will not be known initially, but will be dependent
6 on when the predetermined WMU strategies are met. Despite the
7 lack of certainty regarding the completion date of the project goals
8 for a given WMU, it is anticipated that functional portions of the
9 said WMU will be deemed completed by the District Engineer when
10 initial construction is completed and that the period of O&M for that
11 functional portion shall commence at that time. Problems with
12 defining the length of the period of construction of the entirety will
13 be addressed by determining what parameters will be used as
14 indicators for reaching the water management goal.

15
16 Another key point in this approach is the real estate planning. In
17 order for these WMUs to be constructed, the acquisition of various
18 real estate interests will be necessary. In accepting an adaptive
19 management approach, the challenge will be to minimize the need
20 to acquire additional real estate interests after initiating a segment
21 of a WMU. Therefore, all efforts will be made to anticipate and
22 identify the maximum physical right-of-way needed and the
23 maximum real estate interests necessary.

24 25 **12.5 BUFFALO COVE PILOT WMU**

26
27 With engineering and design funds secured in 1992, USACE
28 constructed a small-scale prototype model test in the Bayou
29 Eugene area of the WMU. The purpose of the test was to
30 determine if circulation and water quality could be improved using
31 unintrusive construction techniques.

32
33 The prototype model test was constructed in 1995; Bayou Eugene
34 was cleared and snagged, three cuts were constructed in the east
35 bank of Bayou Eugene, and one cut was constructed on the south
36 bank of Florida Gas Pipeline Canal. In 1996, an additional cut was
37 made on the south bank of the Florida Gas Pipeline Canal. Post-
38 construction monitoring indicates that the dissolved oxygen has
39 improved near the cuts. Sediment deposition has occurred in the
40 cuts, with the northern Bayou Eugene cut receiving significant
41 amounts of sediment.

42
43 Hydrologic and environmental data collection is ongoing, and
44 hydrographic and topographic surveys have been performed. The
45 initial features for phased implementation have been identified and
46 prioritized based on site inspections, public interest, and

1 coordination with the State of Louisiana’s Atchafalaya Basin
2 Advisory Committee work groups. These features include gapping
3 existing canal banks, lowering, raising, or building weirs, reopening
4 selected closures, constructing sediment traps, closing existing
5 gaps and cuts that bring sediment into sensitive areas, and adding
6 additional diversions in lower sediment environments.
7

8 **12.6 FLAT LAKE LAKE MANAGEMENT UNIT**

9
10 Implementation will be initiated when the WMU feature is
11 scheduled and funded. As in the case of the Buffalo Cove pilot
12 unit, an adaptive management approach will be used.
13

14 **12.7 FUTURE WATER MANAGEMENT UNITS**

15
16 Based on the evaluation of the Buffalo Cove and Flat Lake pilot
17 units, recommendations will be made on the engineering and
18 environmental feasibility of developing other WMUs, with
19 implementation of these future units to be at the discretion of the
20 Chief of Engineers.

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SECTION 13.0
IMPLEMENTATION AND MANAGEMENT ISSUES, CONCERNS, AND
RECOMMENDATIONS REGARDING THE ABFS

1 **13.0 IMPLEMENTATION AND MANAGEMENT ISSUES, CONCERNS, AND**
2 **RECOMMENDATIONS REGARDING THE ABFS**

3
4 **13.1 MANAGEMENT AND ACCESS TO PUBLIC ACCESS LANDS**
5

6 The requirement for acquisition of fee lands only from willing sellers
7 has resulted in noncontiguous holdings, which makes the
8 development and management of the public access feature more
9 complex. Road and boat channel access to the fee lands is often
10 inadequate in terms of legal rights and condition.
11

12
13
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16
17 *Public access to fee*
18 *lands is a priority.*
19

20 **Recommendation 1.** Acquire road and channel easements and
21 purchase in-holdings, when seller is willing, to provide access to
22 noncontiguous lands. Currently, due to the “willing seller”
23 requirement imposed on the acquisition of fee lands for the public
24 access feature of the ABFS and the undeveloped nature of the
25 terrain, a number of fee tracts have been acquired that are not
26 adjacent to public roads or navigable streams. Because these
27 tracts are landlocked, the government has determined that it must
28 obtain road or channel easements in order to make these lands
29 available to the general public for the project purposes of the public
30 access feature. Real Estate Division is working with the Project
31 Management and OD to identify the necessary easements and
32 should expeditiously acquire road and channel easements and
33 purchase private in-holdings, where possible.
34

35 **Recommendation 2.** Once easements and/or fee title are
36 obtained, project funding for improvements to public access roads
37 must be a high priority. Currently, a number of fee tracts have
38 been acquired that are not adjacent to public roads or navigable
39 streams. Even where legal access is available, the current roads
40 are generally substandard and significantly limit the public’s use
41 and enjoyment of the existing public access lands.
42

35 **13.2 USACE PROJECT OFFICE**
36

37 At present, the temporary project office is located off-project in
38 leased office/warehouse space in Port Barre, LA, some 30 to 45
39 minutes away from the project lands. This remote office location is
40 a significant barrier to the effective management and development
41 of the IBA public access lands, as well as the ABFS project’s other
42 public access lands and project features.

1 **Recommendation 1.** In order to address the most pressing project
2 need for improvement of the natural resources management of the
3 IBA and the remainder of the ABFS project, there is an urgent
4 requirement to designate and utilize a small parcel of the project
5 lands under the operations classification to construct a fully
6 functional project office. The proposed project office should be
7 located in the southeastern portion of the IBA in proximity to the
8 state’s Atchafalaya Welcome Center and will include office space
9 for project staff, equipment storage and maintenance facilities, and
10 a project information center (Type C under USACE guidelines).
11 Since this is an essential first-cost component of the public access
12 feature, the cost of construction will be 100 percent Federal. The
13 cost of O&M will be included in the Federal share for O&M for the
14 public access feature. This project office is not part of the
15 recreation feature of the ABFS.
16

17 **13.3 USACE PURCHASE OF ADDITIONAL PUBLIC ACCESS LANDS**

18
19 Section 3075 of WRDA of 2007 modified the public access feature
20 of the ABFS to authorize the Secretary to acquire from willing
21 sellers the fee interest (exclusive of oil, gas, and minerals) of an
22 additional 20,000 acres of land in the LABF. In the past, the non-
23 Federal sponsor has suggested the southern portion of Henderson
24 Lake (south of I-10 and adjoining the IBA public access lands) as a
25 leading candidate for expenditure of this authority. The proposed
26 addition of the southern portion of Henderson Lake for inclusion in
27 the public access feature of the ABFS project has numerous
28 management considerations and issues that must be resolved prior
29 to moving forward with any such acquisition. In summary, the
30 proposed acquisition would likely have little benefit in terms of
31 opening additional areas within the Atchafalaya Basin for public
32 access since the great majority of the property is already open to
33 public use. In addition to the limited benefits, the proposed
34 acquisition introduces a number of management issues that would
35 require significant attention by the limited project staff.
36

37 **Recommendation 1.** The identification and evaluation of possible
38 fee land purchases within the ABFS boundaries should be
39 accomplished by a multi-office team within USACE in consultation
40 with the non-Federal sponsor and resource agencies. A first focus
41 area for the additional purchases of fee-owned public access lands
42 should be to address management problems on the existing public
43 access lands (i.e., purchase of in-holdings and other tracts that
44 improve access or management). After accomplishment of this
45 priority, other available tracts from willing sellers must be carefully
46 screened and evaluated as described above.

1 **13.4 ABFS REGIONAL VISITOR CENTER**
2

3 Section 3076 of the WRDA of 2007 provided that the Secretary,
4 acting through the Chief of Engineers and in consultation with the
5 State of Louisiana, shall study, design, and construct a type A
6 regional visitor’s center in the vicinity of Morgan City, Louisiana.
7 The cost of construction of the visitor center shall be shared in
8 accordance with the recreation cost-share requirement under
9 section 103(c) of WRDA of 1986 (50 percent Federal and 50
10 percent non-Federal): the non-Federal share of the cost of
11 upgrading the visitors center from a type B to type A regional visitor
12 center shall be 100 percent, and the Federal government shall pay
13 100 percent of the cost of the operation and maintenance of the
14 visitor’s center.
15

16 **Recommendation 1.** The study, design, and construction of a type
17 A regional visitor center in the vicinity of Morgan City should be
18 accomplished by a multi-office team within USACE in consultation
19 with the non-Federal sponsor and interested resource agencies.
20 The implementation of this project feature will result in a major
21 increase in the USACE O&M responsibilities under the ABFS
22 project, both in terms of manpower and annual funding. At present,
23 most project O&M activities are focused in the northern portion of
24 the ABFS project and there are no staff resources in the Morgan
25 City area. The design and implementation of the visitor center in
26 the Morgan City vicinity will require close coordination with the
27 Operations side of the ABFS project and must maximize efforts to
28 minimize O&M costs while ensuring that the visitor center be
29 designed to complement the existing and planned public access
30 and recreation aspects of the overall project.
31

32 **13.5 BUDGETARY ISSUES**
33

34 Budgetary issues affect all aspects of the ABFS. Every year, there
35 is competition for funding priorities for all USACE projects, and the
36 features of the ABFS must compete Nationally for the funds.
37

38 **Issue 1. Recreation Development and Water Management Unit**
39 **Budgetary Issues.** Although authorized, funding for the recreation
40 development feature and the WMU features of the ABFS have not
41 received the same priority as funding for public access and flood
42 control and environmental protection features.
43

44 **Recommendation 1 to Issue 1 (Budget-Recreation**
45 **Development and WMUs).** USACE will continue preliminary
46 planning and upon receipt of funding and programming authority,

1 initiate the development and execution of required decision
2 documents. Upon completion and execution of the required
3 decision documents, USACE will schedule and request funding for
4 the construction of these features.

5
6 **Issue 2. O&M Budgetary Issues.** The O&M budget is under-
7 funded at present and cannot be expected to be responsive to what
8 is the future anticipated demand without an increase.

9
10 **Recommendation 1 to Issue 2 (O&M Budgetary Issues).** It is
11 recommended that sufficient monies be allocated to implement the
12 operation, management, and staffing requirements contained in the
13 approved OMP, which outlines the next 5-year budgetary needs.

14 15 **13.6 INTERAGENCY COORDINATION**

16
17 Interagency coordination requirements will increase as the ABFS is
18 implemented.

19
20 **Recommendation 1.** Support of the non-Federal sponsors' efforts
21 to coordinate state action is encouraged, and USACE will work
22 through the designated local agency to ensure consistency with the
23 Federally authorized project.

24 25 **13.7 ADDITIONAL STUDIES/PLANS NEEDED**

26
27 The ABFS is a dynamic project. Its Master Plan is subject to
28 continual revision. The following represent a list of the future
29 needed plans, studies, and documents that will be required.

30
31 **Master Plan Update.** Annual updates are needed, with a revised
32 plan scheduled for completion in 5 years. The material contained in
33 this plan will be amended and changed as additional lands are
34 acquired and new management issues arise. Chief areas of
35 concern will be management of the public access lands, the
36 recreation development lands and facilities and the WMUs.

37
38 **Operational Management Plan Update.** The OMP is updated
39 annually. As the ABFS project area grows and the O&M
40 responsibilities of the ABFS PO increase, close coordination with
41 the non-Federal sponsor(s) will be necessary in order to develop
42 annual work plans that will achieve the project goals.

43
44 **Cultural Resources.** Under Federal law and regulation for
45 projects of the magnitude of the ABFS, cultural resources efforts
46 are dynamic and will require continual investigation and

1 management activities. Cultural resources surveys and historic
2 properties management plans have been prepared as required in
3 accordance with Federal law and regulation. These efforts and
4 future requirements are ongoing.
5

6 **Recreation Development Plans.** Plans and studies, sufficient to
7 prepare decision documents for recreational development and
8 subsequent plans and specifications, are needed to implement this
9 feature.

10
11 **Water Management Units.** Plans and studies, sufficient to
12 prepare decision documents for the WMUs and subsequent plans
13 and specifications, are needed to implement this feature.
14

15 **13.8 ADDITIONAL AGREEMENTS NEEDED**

16
17
18
19
20
21 *Two PPAs are*
22 *currently under*
23 *review at MVD*
24 *Headquarters.*
25

17 In order to fully address the authorized ABFS project, PPAs must
18 be executed for all of the project features of the ABFS. It should be
19 noted; however, that PPAs for the water management feature and
20 the recreation feature (with the exception of the two completed boat
21 launches) cannot be negotiated or executed until USACE prepares
22 and obtains approved design memoranda, environmental
23 compliance, etc., and obtains funding and programming authority.
24 The preparation of two PPA documents is underway with support
25 from consultants under a task order issued under Contract No.
26 W912P-09-D-0003. At the time of this master plan update, the
27 draft PPAs for the public access, flood control and environmental
28 features are under review at MVD Headquarters office.
29

30 In addition, agreements with other Federal agencies will be
31 executed, as authorized and as necessary. Some of these
32 agencies include the USFWS and the Advisory Council for Historic
33 Preservation.

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**SECTION 14.0
VALIDATION AND APPROVAL**



1 **14.0 VALIDATION AND APPROVAL**

2
3 **14.1 VALIDATION**

4
5 The completion of this master plan update was undertaken by an
6 interdisciplinary study team working in close coordination with
7 Operations, Real Estate, Office of Council, Planning, Programs and
8 Project Management, and Engineering divisions. The coordinate
9 team effort has established the principal guidelines and objectives
10 for resource use of Federal lands and waters of the ABFS project.

11
12 It is recommended that this Master Plan be approved as a
13 comprehensive guide to the use, development, and management
14 of the ABFS Project's natural and man-made resources.
15
16
17

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18
19 **14.2 APPROVAL**

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22

Date

EDWARD R. FLEMING
Colonel, Corps of Engineers
District Commander

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**APPENDIX A
REFERENCES**



References

- American Association of Port Authorities. 2009. U.S. Port Rankings by Cargo Tonnage. American Association of Port Authorities, Washington, D.C.
http://aapa.files.cms-plus.com/Statistics/2009US_PORTRANKINGS_BY_CARGO_TONNAGE.pdf
- Anonymous. 1992. The Clemson beaver pond leveler. Dept. of Aquaculture, Fisheries, and Wildlife, Clemson University, Clemson, SC. 4 pp.
- Baker, E. 1991. Mississippi's Best Management Practices for Wetlands. Mississippi Forest Commission. 39 pp.
- Barse, William P., and Nathanael Heller. 2011. *Archeological Assessment of the Bayou Fordoche Mound Site (16SL34), St. Landry Parish, Louisiana*. Draft Report. Submitted to the U.S. Army Corps of Engineers, New Orleans District.
- Bateman, H. 1987. The Wood Duck in Louisiana. Louisiana Department of Wildlife and Fisheries. Baton Rouge, LA. 31 pp.
- Blanchard, Troy C. 2007. Population Projections of Louisiana Parishes through 2030. Office of Electronic Services, Division of Administration, State of Louisiana, Baton Rouge, LA.
<http://louisiana.gov/PopProjections/ExcelFiles/LA%20Projections%20Technical%20Report.pdf>
- Bureau of Land Management (BLM). 2008. Louisiana: Reasonably Foreseeable Development Scenario for Fluid Minerals. Bureau of Land Management, U.S. Department of the Interior, Eastern States, Jackson Field Office, Jackson.
- Brody, A., and J.W. Stone. 1987. Timber Harvest and Black Bear Population Dynamics in a Southern Appalachian Forest. *Int. Conf. Bear Res. And Manage.* 7:243-250.
- Boersen MR, JD Clark, and TL King. 2003. Estimating Black Bear Population Density and Genetic Diversity at Tensas River, Louisiana Using Microsatellite DNA Markers. *Wildlife Society Bulletin* 31 (1): 197-207.
- Cockrell, J. U.S. Fish and Wildlife Service. Personal communication with David Walther on June 18, 1993.
- Decker, D., J. Kelly, T. Seamans, and R. Roth. 1983. Wildlife and Timber from Private Lands: A Landowner's Guide to Planning. *Information Bulletin* 193. Cornell Cooperative Extension Office, Cornell University, NY 56 pp.

- Gagliano, S.M. and J. L. van Beek. 1975. An Approach to Multiuse Management in the Mississippi Delta System. *Deltas, Models for Exploration*. Houston Geological Society. pp: 223-228.
- Godzinski, M., R. Smith, B. Maygarden, E. Landrum, J. Lorenzo, J.-K. Yakubik, and M.E. Weed. 2005. *Cultural Resources Investigations of Public Access Lands in the Atchafalaya Basin Floodway, Indian Bayou South Project Area, St. Landry and St. Martin Parishes, Louisiana*. Submitted to U.S. Army Corps of Engineers, New Orleans District.
- Hammond, A. 1989. Status of the Black Bear in Louisiana in 1988. Louisiana State University, Baton Rouge, LA. Thesis. 98 pp.
- Hellgren, E., and D. Maehr. 1992. Habitat Fragmentation and Black Bears in the Eastern United States. Unpublished manuscript. Texas A & I University, Kingsville, TX. 26 pp.
- Hern, S., V. Lambou, and J. Butch. 1980. Descriptive Water Quality for the Atchafalaya Basin, Louisiana. EPA-600/4-80-014. Dallas, TX.
- Hill, E., ed. 1986. Abstracts; Management of Bottomland Hardwoods for Wildlife: A Workshop. Mississippi State University, Starkville, MS.
- Hillman, L., and D. Yow. 1986. Timber Management for Black Bear. *East. Workshop Bear Res. And Manage.* 8:125-136.
- Hudson, W., ed. 1992. *Nature watch: a resource for enhancing wildlife viewing areas*. Falcon Press Publishing Co., Inc. Helena, MO. 199 pp.
- Isaacs, Jack C. 2010. Louisiana Bird Watchers: A Further Examination of Past Research. Louisiana Department of Wildlife and Fisheries, Socioeconomic Research and Development Section, Baton Rouge, LA.
- Isaacs, Jack C., and David R. Lavergne. 2010. Louisiana Commercial Crawfish Harvester's Survey Report. Louisiana Department of Wildlife and Fisheries, Socioeconomic Research and Development Section, Baton Rouge, LA. <http://www.lsuagcenter.com/NR/rdonlyres/CF07A02D-B4FA-4304-93A7-64809619B6FC/80317/CrawfishHarvestersReport2011.pdf>
- Kelly, David B. 2004. *Historic Properties Management Plan for the Atchafalaya Basin Floodway System Project, South Louisiana*. Submitted to the U.S. Army Corps of Engineers, New Orleans District.
- Kennedy, J., Jr., and R. Johnson. 1984. Silvicultural Alternatives in Bottomland Hardwoods and Their Impact on Stand Quality. *Proc. 14th Annual Southern Forest Economics Workshop*, Memphis, TN. Pages 6-18.

- Landres, P. 1992. Temporal Scale Perspectives in Managing Biological Diversity. Pages 292-307 in Knopf, F., and M. Smith, eds. Biological Diversity in Wildlife Management. Trans. 57th N. A. Wildlife and Natural Resources Conference. Wildlife Management Institute, Washington D.C. 342 pp.
- Lambou, V. 1989. Management Needs for Fishes and Fisheries Dependent on Overflow Riverine Wetlands. Proceedings International Symposium: Wetlands and River Corridor Management, July 5-9. 19 pp.
- Lambou, V. 1990. Importance of Bottomland Hardwood Forest Zones to Fishes and Fisheries: The Atchafalaya Basin, a case history. Pages 126-193 in Gosslink, J., L. Lee, and T. Muir, eds. Ecological Processes and Cumulative Impacts: Illustrated by Bottomland Hardwood Wetland Ecosystems. Lewis Publishers, Inc. Chelsea, MI.
- Lea, R. 1988. *Management of Eastern United States Bottomland Hardwood Forests*. Pages 185-195 in Hook, D., W. McKee, J. Smith, J. Gregory, V. Burrell, M. DeVoe, R. Sojka, S. Gilbert, R. Banks, L. Stolzy, C. Brooks, T. Matthews, and T. Shear., eds. The Ecology and Management of Wetlands. Volume 2: Management, Use, and Value of Wetland. Timber Press, Portland, Oregon. 394 pp.
- Leberg. P. L., M. R. Carloss, L. J. Dugas, K. L. Pilgrim, L. S. Mills, M. C. Green, and D. S. Scognamillo. Recent Record of a Cougar (*Puma concolor*) in Louisiana, with Notes on Diet, Based on Analysis of fecal Materials. 2004. Southeastern Naturalist. Vol. 3: 653-658.
- Louisiana Department of Environmental Quality. 2012. Final 2010 Louisiana Water Quality Inventory: Integrated Report (305(b)/303(d))
<http://www.deq.louisiana.gov/portal/DIVISIONS/WaterPermits/WaterQualityStandardsAssessment/WaterQualityInventorySection305b/2010WaterQualityIntegratedReport.aspx>
- Louisiana Department of Natural Resources (DNR). 1998. Atchafalaya Basin Floodway System, Louisiana Project: State Master Plan. Louisiana Division of Natural Resources, Baton Rouge, LA.
Http://dnr.louisiana.gov/assets/docs/Athafalaya_Basin/State MasterPlan.pdf.
- DNR. 2010. Atchafalaya Basin Program Fiscal Year 2010 Plan. Louisiana Department of Natural Resources, Baton Rouge, LA.
- DNR. 2011. Atchafalaya Basin Program Fiscal Year 2011 Plan. DNR, Baton Rouge, LA.

- Louisiana Department of Transportation and Development. 2007. Louisiana Marine Transportation System Plan, State Project No. 750-99-0130. Submitted by Shaw Environmental and Infrastructure, Inc. to the Louisiana Department of Transportation and Development, Baton Rouge, LA.
- Louisiana Department of Wildlife and Fisheries (LDWF). 1997. The Economic Benefits of Fisheries, Wildlife and Boating Resources in the State of Louisiana. Submitted by Southwick Associates, Inc., to the Louisiana Department of Wildlife and Fisheries, Baton Rouge, LA.
- LDWF. 2005. The Economic Benefits of Fisheries, Wildlife and Boating Resources in the State of Louisiana. Submitted by Southwick Associates, Inc., to the Louisiana Department of Wildlife and Fisheries, Baton Rouge, LA.
- LDWF. 2008. The Economic Benefits of Fisheries, Wildlife and Boating Resources in the State of Louisiana. Submitted by Southwick Associates, Inc., to the Louisiana Department of Wildlife and Fisheries, Baton Rouge, LA.
- LDWF. 2010. Licensing Statistics. Louisiana Department of Wildlife and Fisheries, Baton Rouge, LA. <http://www.wlf.louisiana.gov/licenses/statistics>
- LDWF. 2012. Rare Animals of Louisiana: Piping Plover. Available online: http://www.wlf.louisiana.gov/sites/default/files/pdf/fact_sheet_animal/32269-Charadrius%20melodus/charadrius_melodus.pdf. Last accessed 25 April 2012.
- Louisiana Sportsman. 2009. Nutria incentive program ends with 334,038 harvested. Louisiana Sportsman, June 2, 2009. <http://www.louisianasportsman.com/reader.php?id=1708>
- Louisiana State University (LSU). 2009. Louisiana Agricultural Statistics, Louisiana State University Agricultural Center, Baton Rouge. http://www.lsuagcenter.com/en/our_offices/departments/Ag_Economics_Agribusiness/research/publications/2009-Louisiana-Agricultural-Statistics.htm
- LSU. 2010. Louisiana Summary, Agriculture & Natural Resources, years 2000 through 2010. Louisiana State University Agricultural Center, Baton Rouge. <http://www.lsuagcenter.com/NR/rdonlyres/DB0D53C2-D97D-4503-A8B0-EFE232AE782F/79793/EstimatedDockSideCrawfishPrices2000through2010.pdf>
- Lowe, CL. 2011. Estimating Population Parameters of the Louisiana Black Bear in the Upper Atchafalaya Basin. A thesis presented for M.S., University of Tennessee, Knoxville. May 2011
- Martin, R., and G. Lester. 190. Atlas and Census of Wading Bird and Seabird Nesting Colonies in Louisiana: 1990. Louisiana Department of Wildlife and Fisheries, Natural Heritage Program. Special Publication No. 3. Baton Rouge, LA 182 pp.

- McGimsey, C.R., and N. Heller. 2001. The Henderson lake Site: Physical Setting, History of Investigations, Methods, and Excavation Results. In *The Rings of Marksville and Other Stories of Southwest Louisiana Archaeology*, pp. 16-30. University of Louisiana at Lafayette, Dept. of Sociology and Anthropology, Lafayette, LA.
- Outdoor Industry Foundation. 2006. Active Outdoor Recreation Participation Study. Outdoor Industry Foundation, Washington, D.C.
- Pashley, D., and W. Barrow. 1993. Effects of Land Use Practices on Neotropical Migratory Birds in Bottomland Hardwood Forests. Pages 315-320 in Finch, D., and P. Stangel, eds. Status and Management of Neotropical Migratory Birds. U.S. Department of Agriculture, Forest Service. General Technical Report RM-229. Fort Collins, CO. 422 pp.
- Pelton, M. 1985. Habitat Needs of Black Bears in the East. Pages 49-53 in Kulhavy, D., and R. Conner, eds. Wilderness and natural areas in eastern United States: A Management Challenge. Center for Applied Studies. Stephen F. Austin State University, Nacogdoches, TX.
- Platt, S., and C. Brantley. 1992. The Management and Restoration of Switchcane (Louisiana). *Restoration and Management Notes* 10: (1) :84-85.
- Purdy, K., G. Goff, D. Decker, G. Pomerantz, and N. Connelly. 1987. A Guide to Managing Human Activity on National Wildlife Refuges. U.S. Fish and Wildlife Service, Office of Information Transfer, Fort Collins, CO. 57 pp.
- Putnam, G, G. Furnival, and J. McKnight. 1960. Management and Inventory of Southern Hardwoods. U.S. Department of Agriculture, Forest Service. Agriculture Handbook No. 81. Washington, D.C. 102 pp.
- Reed, Don, "Hunting Lease Enterprises and Louisiana Landowners," Louisiana Agriculture, Spring 2002.
- Reid, F., J. Kelley, T. Taylor, and L. Fredrickson. 1989. Upper Mississippi Valley Wetlands-Fefuges and Moist Soil Impoundments. Pages 181-202 in Smith, L., R. Pederson, and Wintering Waterfowl in North America. Texas Tech University, Lubbock. 560 pp.
- Reinecke, K., R. Kaminiski, D. Moorhead, J. Hodges, and J. Nassar. 1989. Mississippi Alluvial Valley. Pages 203-247 in Smith, L., R. Pederson, and R. Kaminiski, eds. Habitat Management for Migrating and Wintering Waterfowl in North America. Texas Tech University, Lubbock, TX. 560 pp.
- Remsen, J. V. Jr. 1986. Was Bachman's Warbler a Bamboo Specialist? *The Auk*. 103:216-219.

- Robbins, C., D. Dawson, and B. Dowell. 1989. Habitat Area Requirements of Breeding Forest Birds of the Middle Atlantic States. Wildlife Monogram 103. 34 pp.
- Robbins, C., J. Sauer, and B. Peterjohn. 1992. Population Trends and Management Opportunities for Neotropical Migrants. Pages 17-23 *in* Finch, D., and P. Stangel, eds. U.S. Department of Agriculture, Forest Service. General Technical Report RM-229. Fort Collins, CO. 422 pp.
- Rosson, J. F., Jr., W. H. McWilliams, and P.D. Frey. 1988. Forest Resources of Louisiana. Resource Bulletin. SO-130. U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station, New Orleans, LA. 81 pp.
- Rudis, V. A. 1988. Nontimber Values of Louisiana's Timberland. Resource Bulletin SO-132. U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station, New Orleans, LA. 27 pp.
- Rudis, V. A., and R. A. Birdsey. 1986. Forest Resources and Current Conditions in the Lower Mississippi Valley. Resource Bulletin. SO-116. U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station, New Orleans, LA. 7 pp.
- Schroeder, R. L. 1982a. Habitat Suitability Index Models: Pileated Woodpecker. U.S. Fish and Wildlife Service. FWS/OBS-82/10.39. Fort Collins, CO. 15 pp.
- Schroeder, R. L. 1982b. Habitat Suitability Index Models: Downy Woodpecker. U.S. Fish and Wildlife Service. FWS/OBS-82/10.38. Fort Collins, CO. 10 pp.
- SCORP. 2009. 2009-2013 Statewide Comprehensive Outdoor Recreation Plan. Louisiana Department of Culture, Recreation, and Tourism, Baton Rouge, LA. http://www.narrp.org/assets/Library/SCORPs/la_scorp_2009.pdf
- Smith, R., B. Maygarden, J.-K. Yakubik, and M.E. Weed. 2003. *Cultural Resources Evaluation of Public Access Lands in the Atchafalaya Basin Floodway, Indian Bayou Area, St. Landry and St. Martin Parishes, Louisiana*. Submitted to U.S. Army Corps of Engineers, New Orleans District.
- U.S. Army Corps of Engineers (USACE). 1989. Engineering Pamphlet 1165-2-1, Digest of Water Resources Policies and Authorities. U.S. Army Corps of Engineers. 1985. Engineering Regulation 405-1-12, Real Estate Handbook.
- USACE. 1987. Engineering Regulation 1130-2-400, Management of Natural Resources and Outdoor Recreation at Civil Works Water Resource Projects.
- USACE. 1990. Engineering Regulation 1130-2-406, Shoreline Management at Civil Works Projects.

- USACE. 1974. Engineering Regulation 1130-2-405, Use of Off-Road Vehicles on Civil Works Projects.
- USACE. 1987. Engineering Regulation 1130-2-435, Preparation of Project Master Plans.
- USACE. 1988. Engineering Regulation 1165-2-400, Recreation Planning, Development, and Management Policies.
- USACE. 2008. Waterborne Commerce of the United States (WCUS), Part II, Waterways and Harbors on the Gulf Coast, Mississippi River System, and Antilles. U.S. Army Corps of Engineers, Waterborne Commerce Statistics Center, New Orleans, LA.
<http://www.ndc.iwr.usace.army.mil/wcsc/webpub08/webpubpart-2.htm>
- USACE. 2010. Activity Distribution Report. U.S. Army Corps of Engineers, New Orleans District.
- USACE. 2011. Stage & Discharge Data Atchafalaya River at Simmesport, LA.
Available Online: <http://www.mvn.usace.army.mil/cgi-bin/watercontrol.pl?03045>
Accessed: 3/1/2011.
- USACE. 2012. 2012 Atchafalaya Basin Floodway System Visitation Data, 2010-2012.
On file at the Atchafalaya Basin Floodway System Project Office, Port Barre, LA.
- U.S. Census. 2011. The Twenty-Second Census of the United States. Bureau of the Census Data Center, Washington, DC.
<http://www.census.gov/main/www/access.html>
- U.S. Department of Agriculture, Forest Service. 1982. Service Foresters Handbook, Southeastern Area. Miscellaneous Report SA-MR 10. Atlanta, GA. 129 pp.
- U.S. Fish and Wildlife Service (USFWS). 1981. Planning-aid Report on Management and Land Use Controls, in Atchafalaya Basin Reports, Avoca Island Levee Extension and Water Management and Land Use Controls. Lafayette, LA.
- USFWS. 1987. Habitat Management Guidelines for the Bald Eagle in the Southeast Region. Third Revision. 8 pp.
- USFWS. 1990. Atchafalaya National Wildlife Refuge, Forest Management Plan. Slidell, LA. 72 pp.
- USFWS. 1992a. An Evaluation of Bogue Chitto and Atchafalaya National Wildlife Refuges' Forest Habitat Management Programs. Atlanta, GA. 54 pp.

- USFWS. 1992b. Role of the Service in the Conservation of Biological Diversity, Draft Manuscript. Washington, D.C. 9 pp.
- USFWS. 1993. Biological Opinion on the Public Use Program at Tensas River National Wildlife Refuge. Atlanta, GA. 9 pp.
- USFWS 2001. Critical Habitat for Piping Plover (*Charadrius melodus*): Description of Legal Boundaries for Louisiana Units. Available online: <http://www.fws.gov/plover/finalchmaps/Louisiana.PDF>. Last accessed 25 April 2012.
- USFWS. 2006. National Survey of Fishing, Hunting, and Wildlife-Associated Recreation. U.S. Department of the Interior, Fish and Wildlife Service, and U.S. Department of Commerce, U.S. Census Bureau, Washington, D.C.
- USFWS. 2009. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Louisiana Black Bear (*Ursus americanus luteolus*). Federal Register, Vol. 74, No. 45, 10 March 2009.
- Van Beek, J., P. Light, and W. Smith. 1974. Management Plan, Buffalo Cove Swamp. Coastal Environments, Inc. Baton Rouge, LA. 55 pp.
- Van Beek, J., W. Smith, J. Smith, and P. Light. 1977. Plan and Concepts for Multi-use Management of the Atchafalaya Basin. EPA-600/3-77-062. Dallas, TX 204 pp.
- Vigander, H, B. Maygarden, A. Franks, and P.V. Heinrich. 1994. *Phase 1 Cultural Resources Inventory of Public Access Lands in the Atchafalaya Basin, Vicinity of the Sherburne Wildlife Management Area, Pointe Coupee, St. Martin and Iberville Parishes, Louisiana*. Submitted to the U.S. Army Corps of Engineers, New Orleans District.
- Weaver, K., D. Tabberer, L. Moore, Jr., G. Chandler, J. Posey, and M. Pelton. 1990. Bottomland Hardwood Forest Management for Black Bears in Louisiana. Proceedings Annual Conference of Southeast Association Fish and Wildlife Agencies 44:342-350.
- Weinstein, R., and Wells, D. 2004. *Cultural Resources Investigation of Public Access Lands in the Atchafalaya Basin Floodway, Indian Bayou North Project Area, St. Landry Parish, Louisiana*. Submitted to U.S. Army Corps of Engineers, New Orleans District.
- Wells, F., and C. Demas. 1977. Hydrology and Water Quality of the Atchafalaya River Basin. Louisiana Department of Transportation and Development, Office of Public Works. Water Resources Technical Report No. 14. Baton Rouge, LA. 53 pp.

Wigley, T. G. Undated. Use of Managed Forests by Black Bears: A Brief Overview.
Department of Aquaculture, Fisheries, and Wildlife, Clemson University,
Clemson, SC. 5 pp.

APPENDIX B
ACRONYMS AND ABBREVIATIONS



ACRONYMS AND ABBREVIATIONS

AAPA	American Association of Port Authorities
ABAC	Atchafalaya Basin Advisory Committee
ABFS	Atchafalaya Basin Floodway System
ABLP	Atchafalaya Basin, Louisiana, Project
Ag	Agriculture
AMP	Annual Management Plan
ANWR	Atchafalaya National Wildlife Refuge
ATV	all-terrain vehicle
AWMA	Attakapas Wildlife Management Area
BBCC	Black Bear Conservation Committee
BDOA	Bayou des Ourses Area
BLM	Bureau of Land Management
B.P.	before present
CFR	Code of Federal Regulations
CHA	Critical Habitat Area
DBH	diameter at breast height
DOTD	Department of Transportation and Development
DM	design memoranda
DNR	Department of Natural Resources
DO	Dissolved Oxygen
DOI	U.S. Department of Interior
EA	Environmental Assessment
EABPL	East Atchafalaya Basin Protection Levee
EC	Engineering Circular
EP	engineering pamphlet
EPA	Environmental Protection Agency
EIS	U.S. Environmental Impact Statement
ER	Engineering Regulation
°F	degrees Fahrenheit
FDM	feature design memoranda
FWP	Fish and Wildlife Propagation
GIWW	Gulf Intracoastal Waterway
HCS	Henderson Control Structure
HQ	Headquarters
HTRW	hazardous, toxic, or radioactive waste

I-10	Interstate 10
IBA	Indian Bayou Area
ISOP	Interpretive Services and Outreach Program
LA	Louisiana
LA 105	Louisiana Highway 105
LABR	Lower Atchafalaya Basin Reevaluation Study
LCA	Louisiana Coastal Area
LDEQ	Louisiana Department of Environmental Quality
LDNR	Louisiana Department of Natural Resources
LDWF	Louisiana Department of Wildlife and Fisheries
LERRD	lands, easements, rights-of-way, relocation, and dredged material area
LNC	Louisiana Nature Conservancy
LSU	Louisiana State University
MVD	Mississippi Valley Division
MVN	New Orleans District
MVN-OD	Operations Division-New Orleans District
MOU	Memorandum of Understanding
MP	Master Plan
MRC	Mississippi River Commission
MR&T	Mississippi River and Tributaries
MSA	Metropolitan Statistical Area
msl	mean sea level
NEPA	National Environmental Policy Act
NGVD	National Geodetic Vertical Datum
NPS	U.S. National Park Service
OD	Operations Division
OM	Operation Manager
O&M	operation and maintenance
OMRR&R	Operation, Maintenance, Repair, Replacement and Rehabilitation
OMP	Operational Management Plan
ORV	off-road vehicles
PCA	Project Cooperation Agreement
PCR	Primary Contact Recreation
PL	Public Law
PO	Project Office
PPA	Project Partnership Agreement
Program	Atchafalaya Basin Program
P&S	plans and specifications
R	Range
REDM	Real Estate Design Memoranda

S	Section
SBA	Shatters Bayou Area
SCR	Secondary Contact Recreation
SEIS	Supplemental Environmental Impact Statement
SHPO	State Historic Preservation Officer
SWMA	Sherburne Wildlife Management Area
T	Township
TDS	Total Dissolved Solids
U.S.	United States
USACE	United States Army Corps of Engineers
U.S.C.	U.S. Code
USFWS	U.S. Fish and Wildlife Service
WABPL	West Atchafalaya Basin Protection Levee
WCSC	Waterborne Commerce Statistics Center
WMA	Wildlife Management Area
WMU	Water Management Unit
WRDA	Water Resources Development Act

APPENDIX C
MAPS AND FIGURES FOR THE ABFS PROJECT



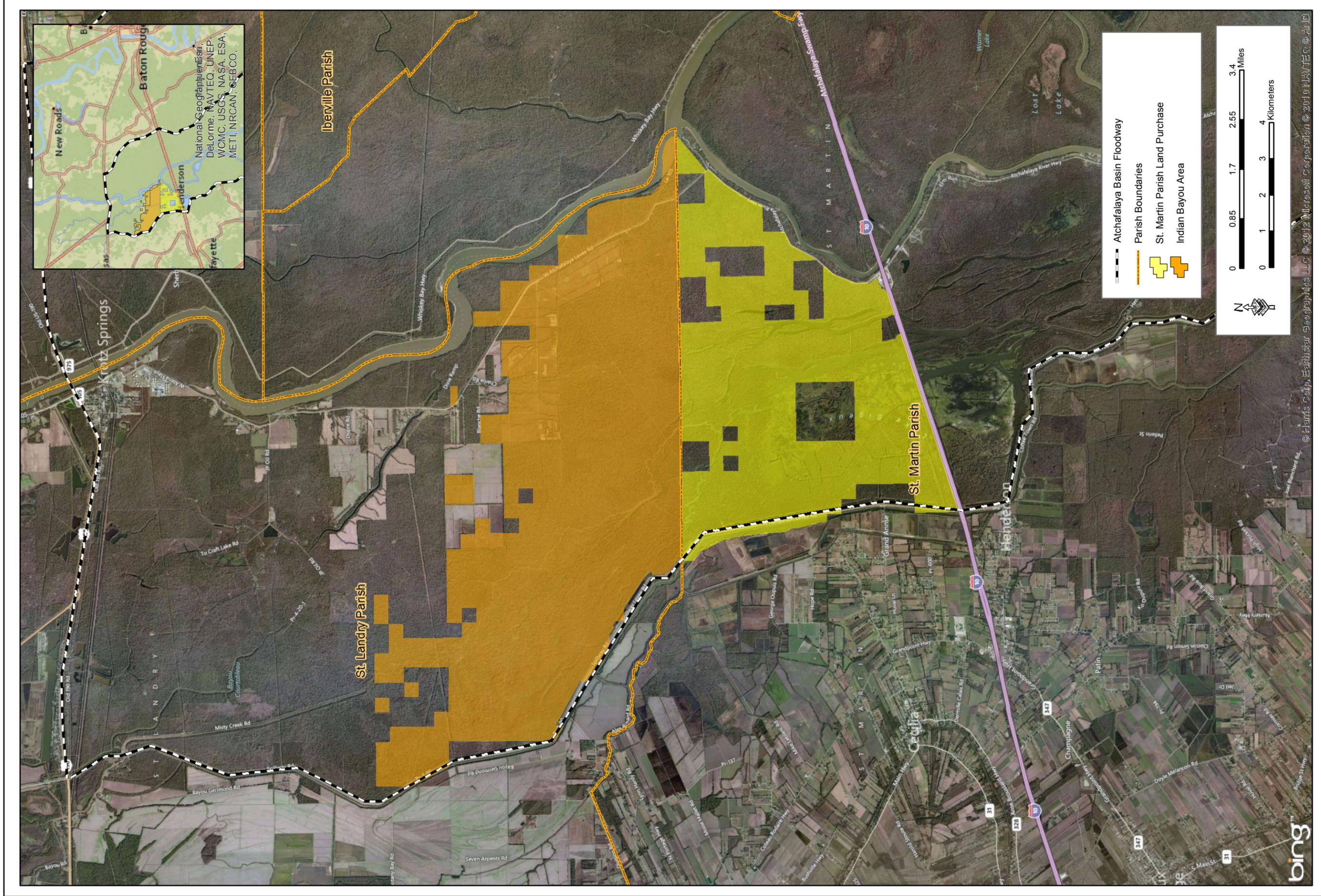


Figure 3. St. Martin Parish Land Purchase

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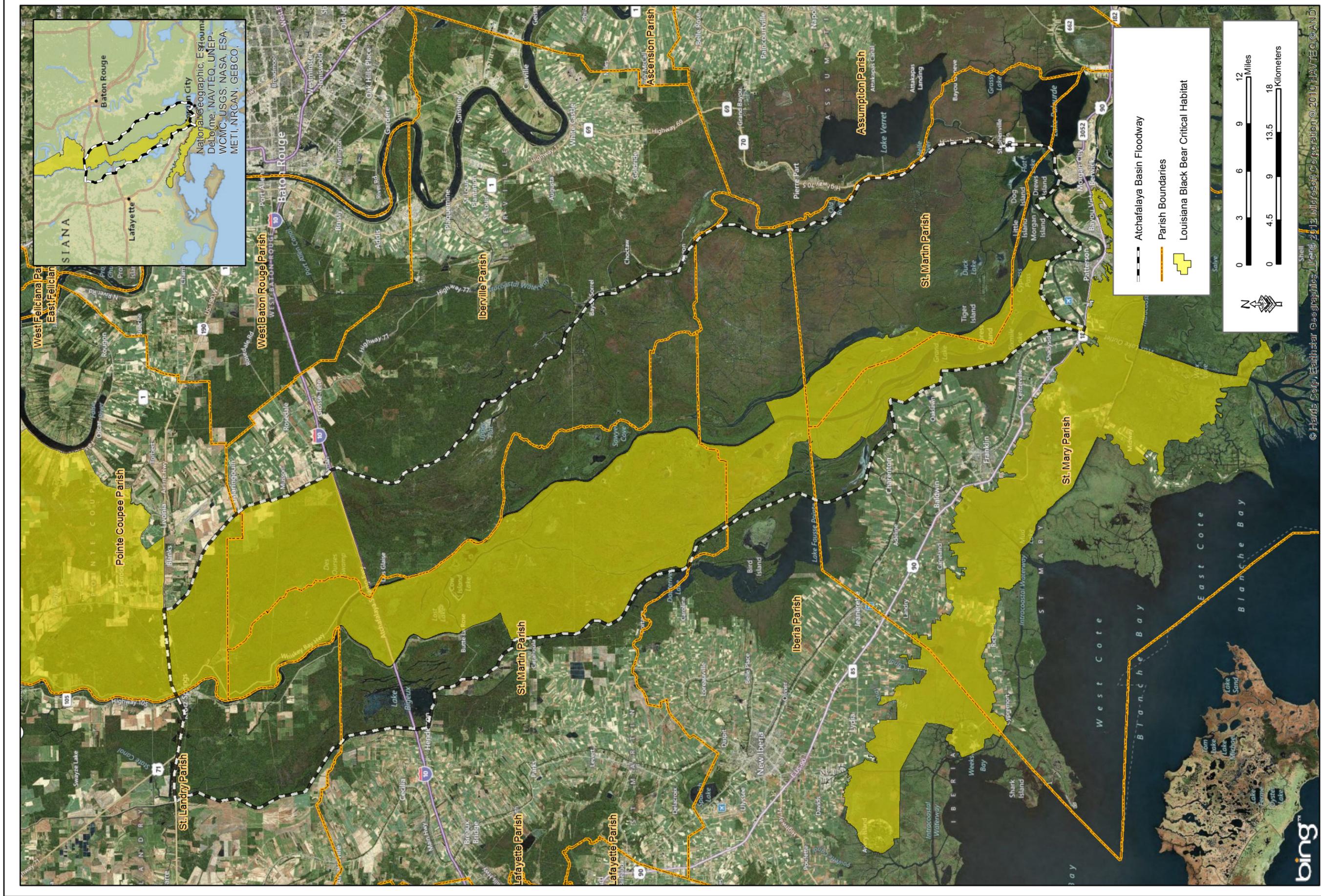


Figure 4. Louisiana Black Bear Critical Habitat

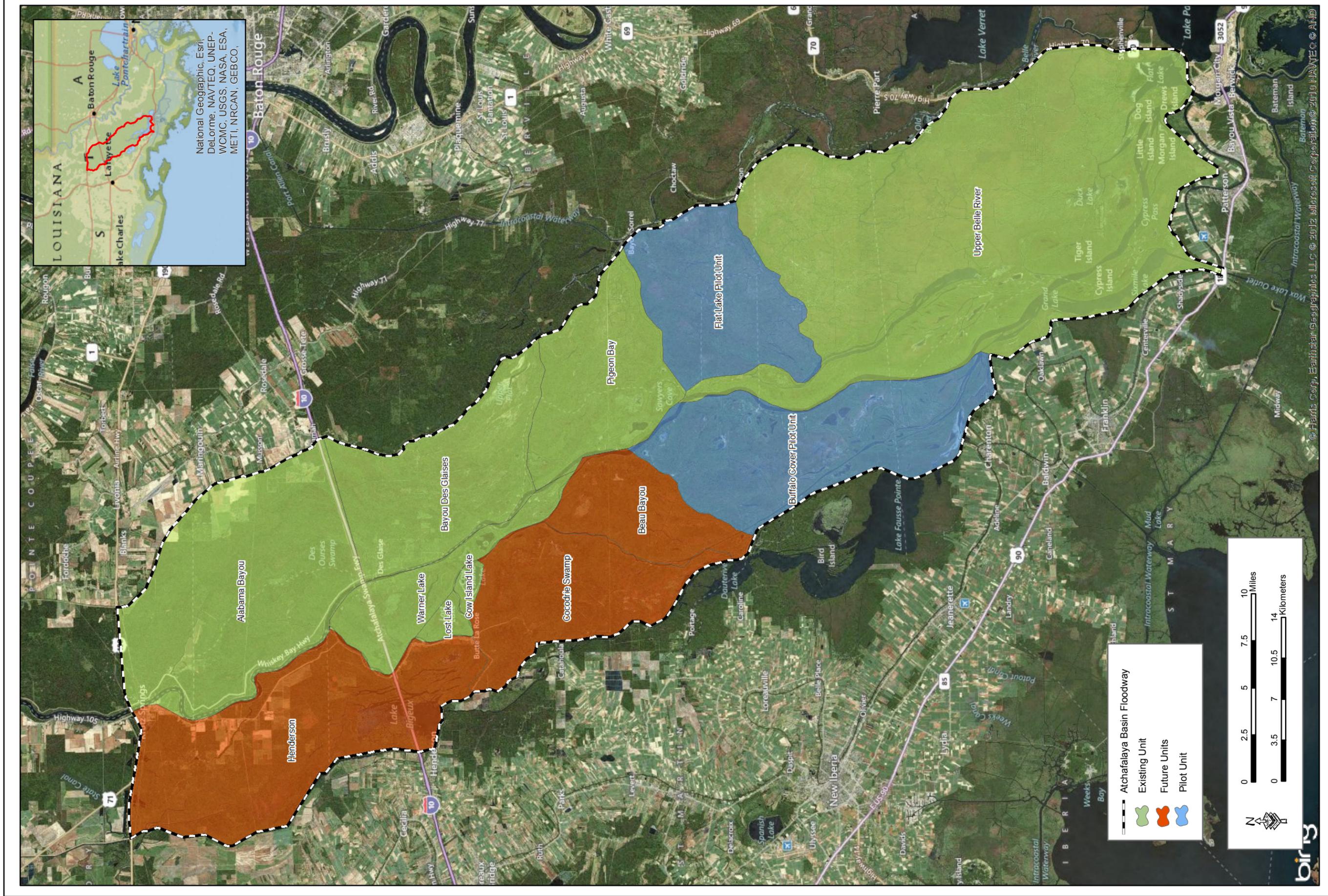


Figure 6. Water Management Unit Map

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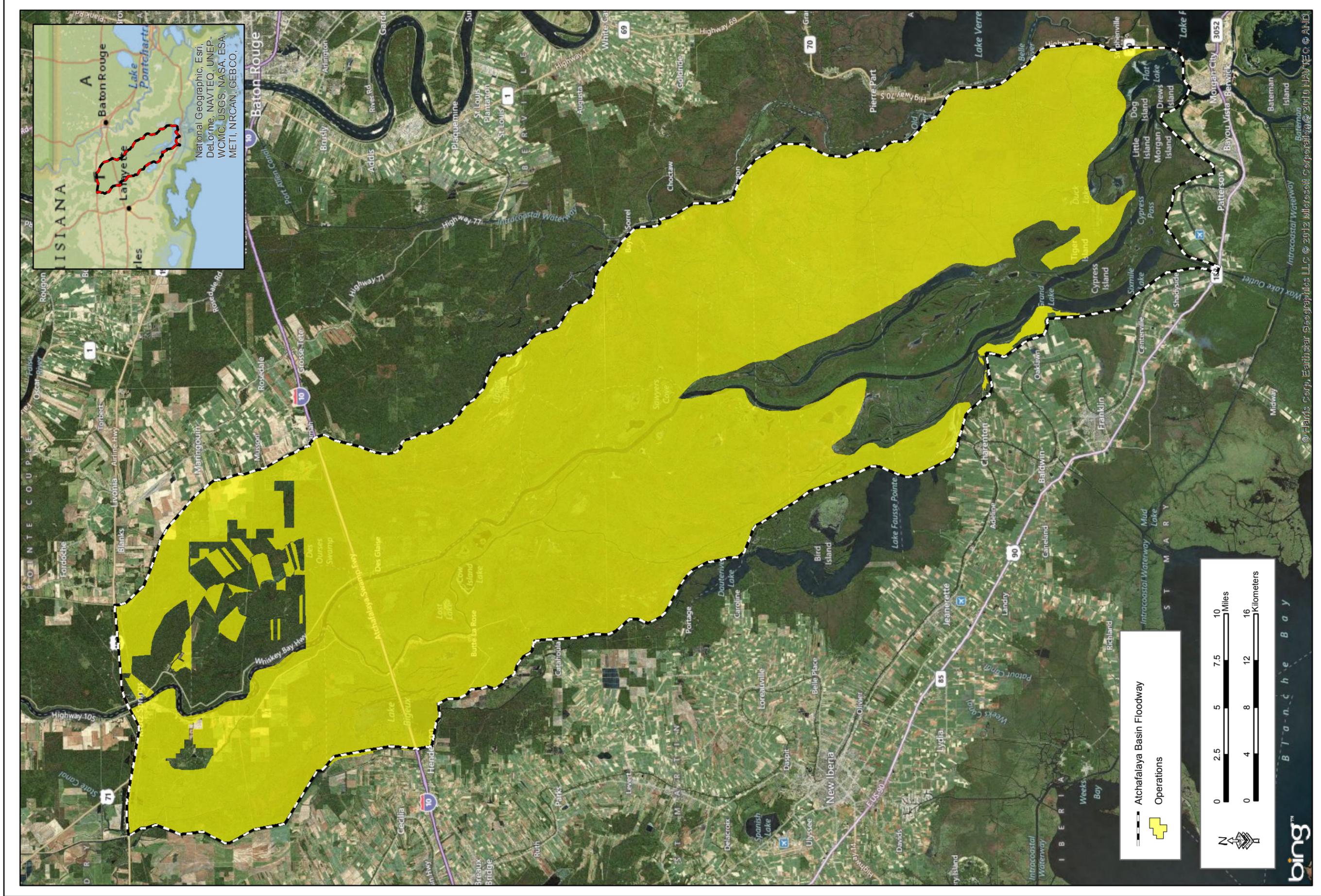
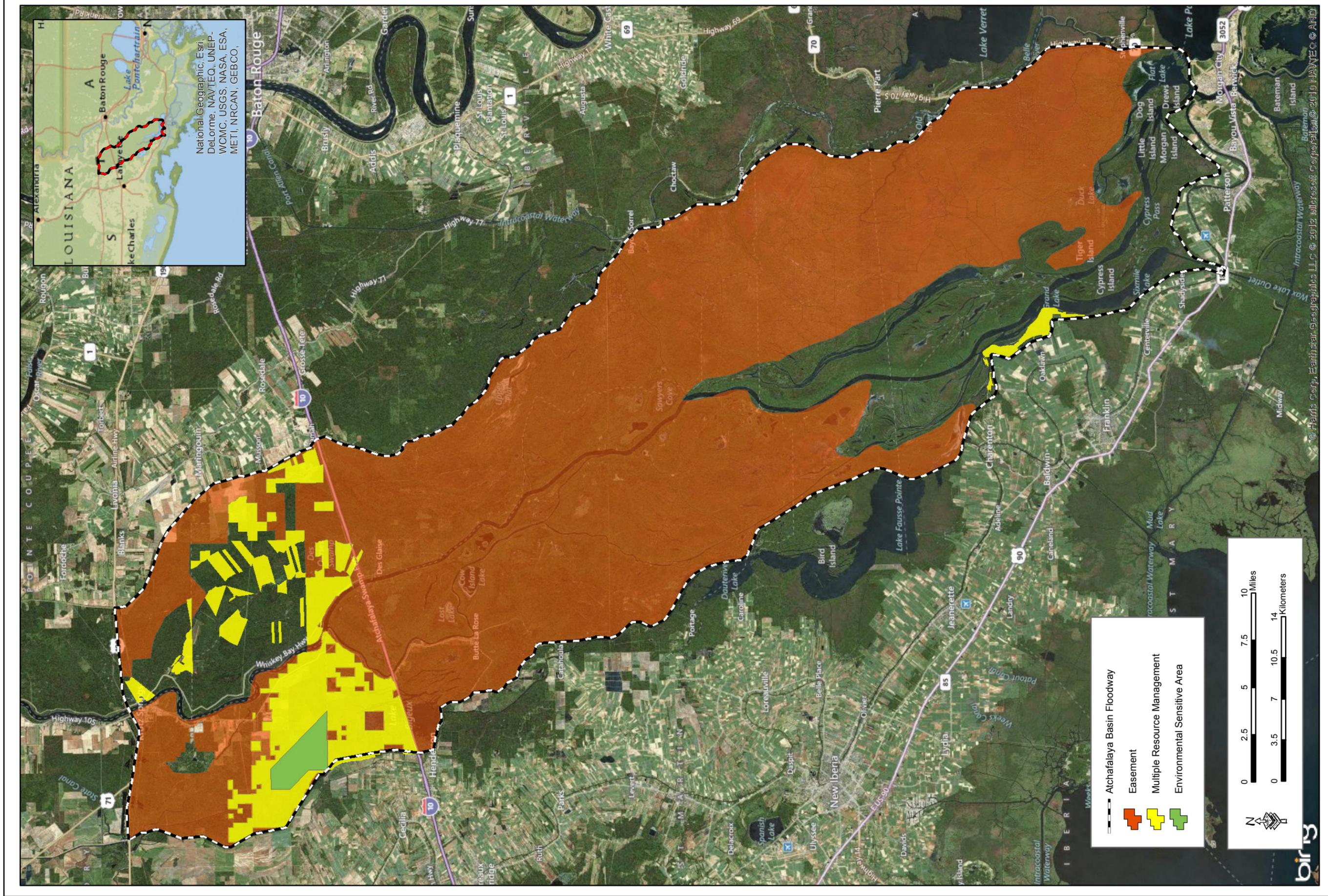


Figure 7. Land Allocations



National Geographic, Esri, DeLorme, NAVTEQ, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO,

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Figure 8. Land Classification Map

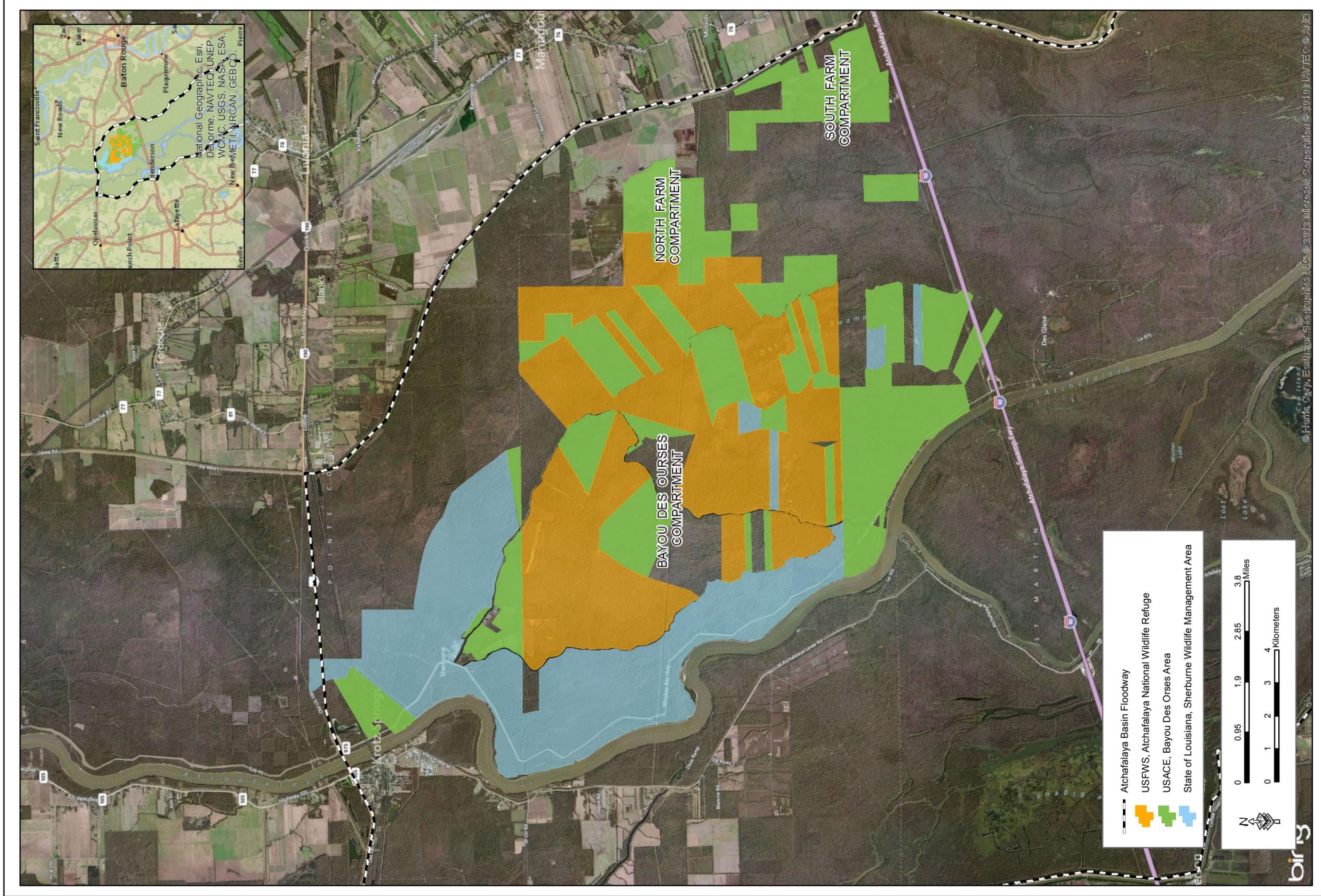


Figure 9. Bayou Des Orses Area

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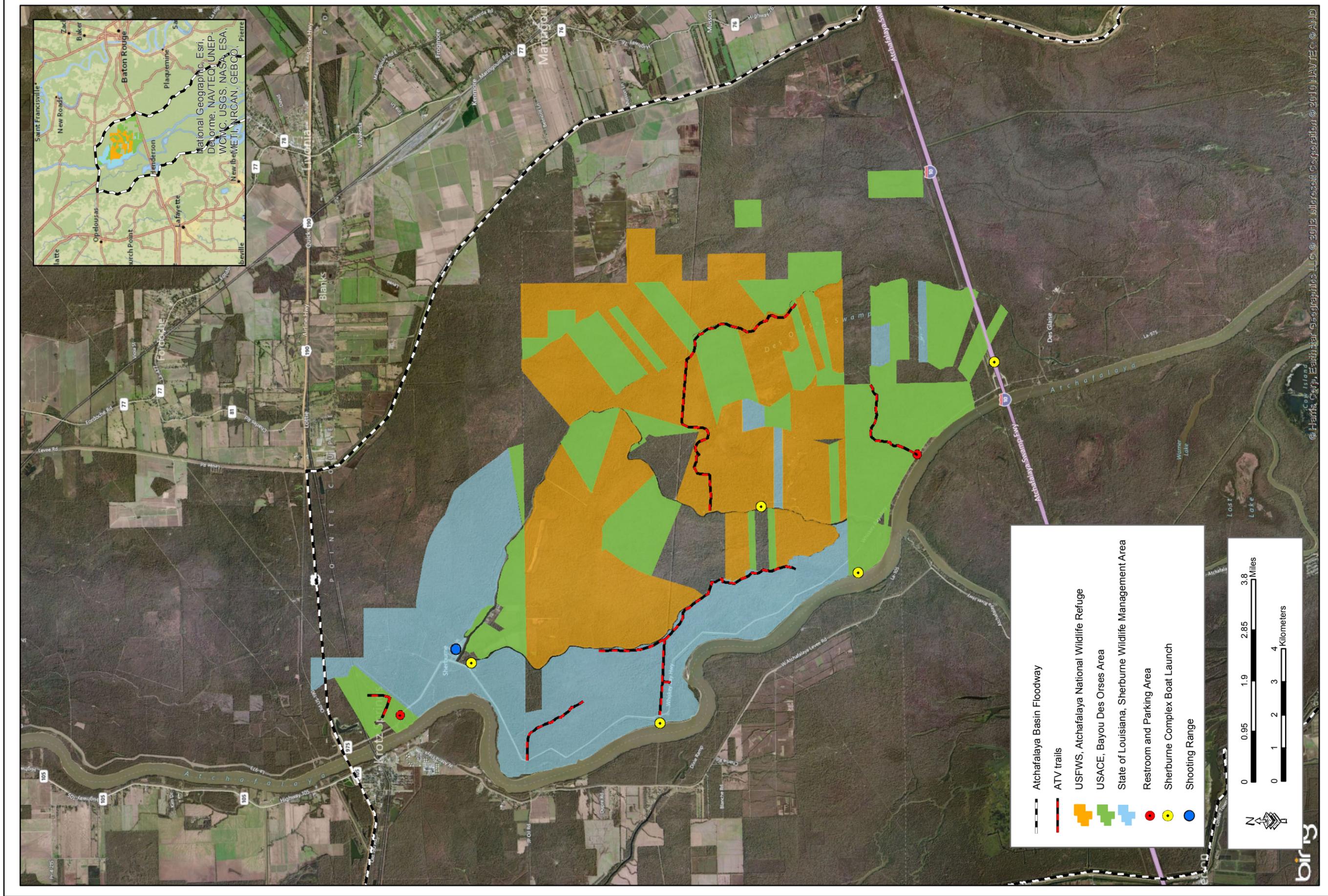


Figure 10. Bayou Des Orses Compartment

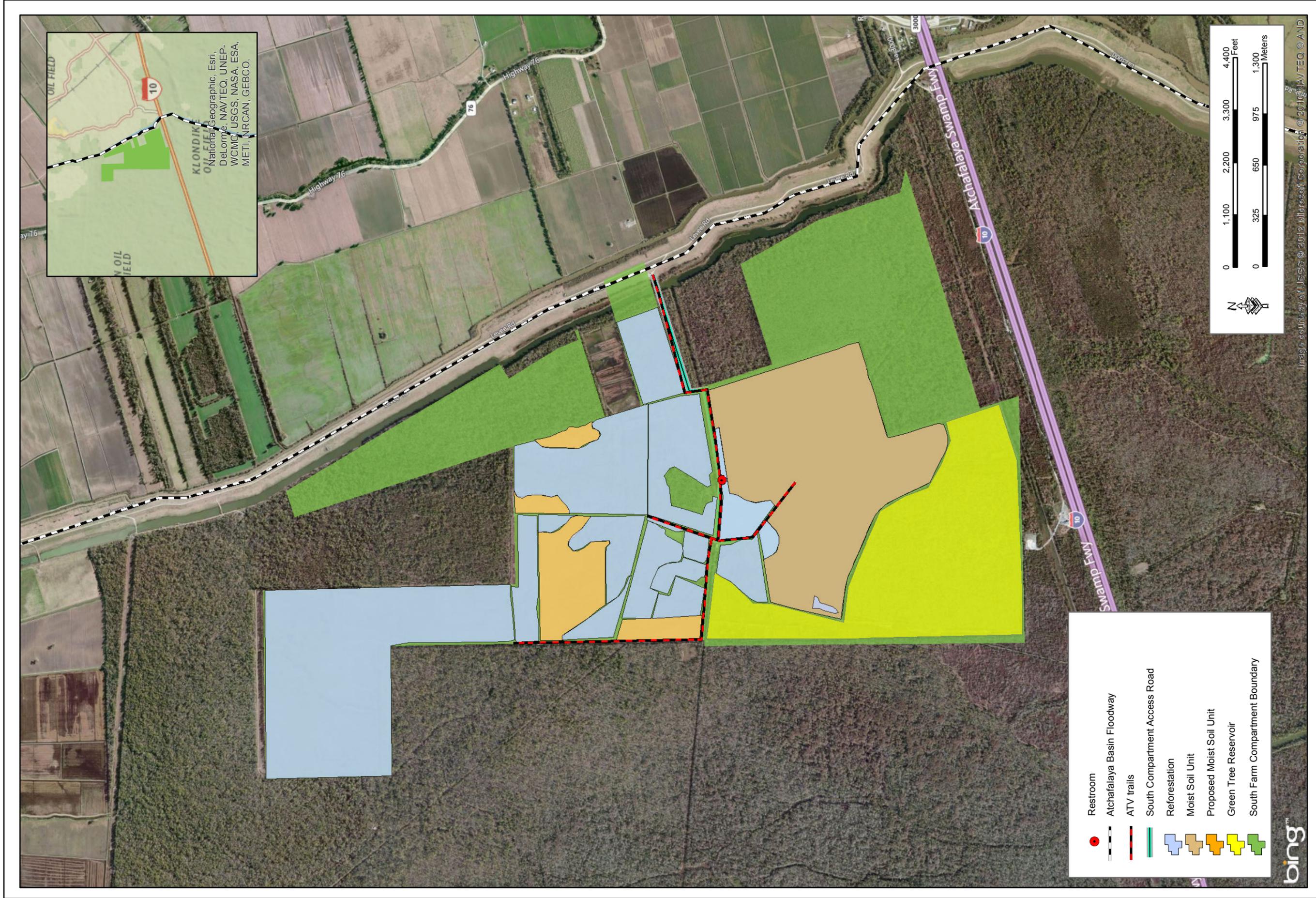


Figure 11. South Farm Compartment

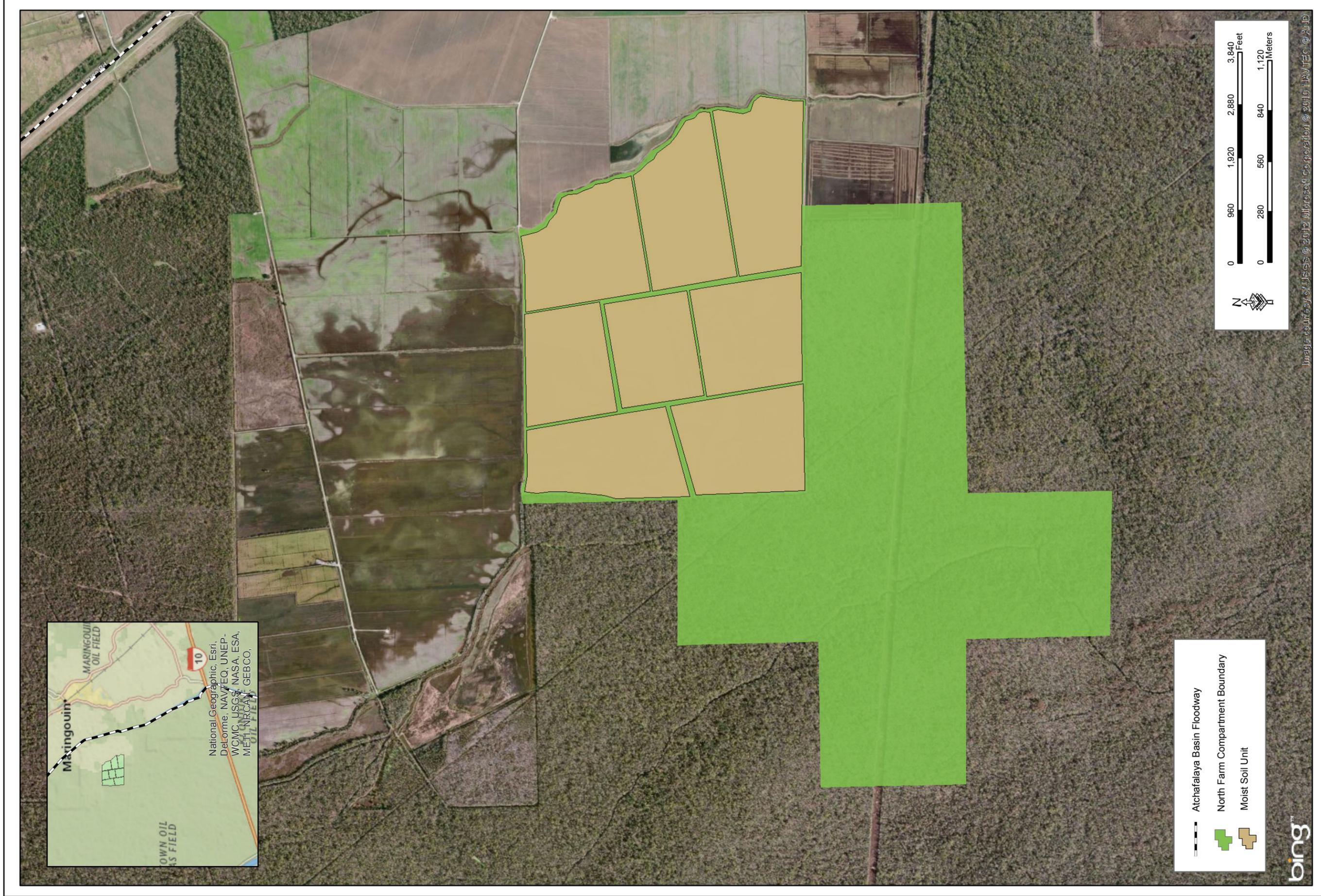
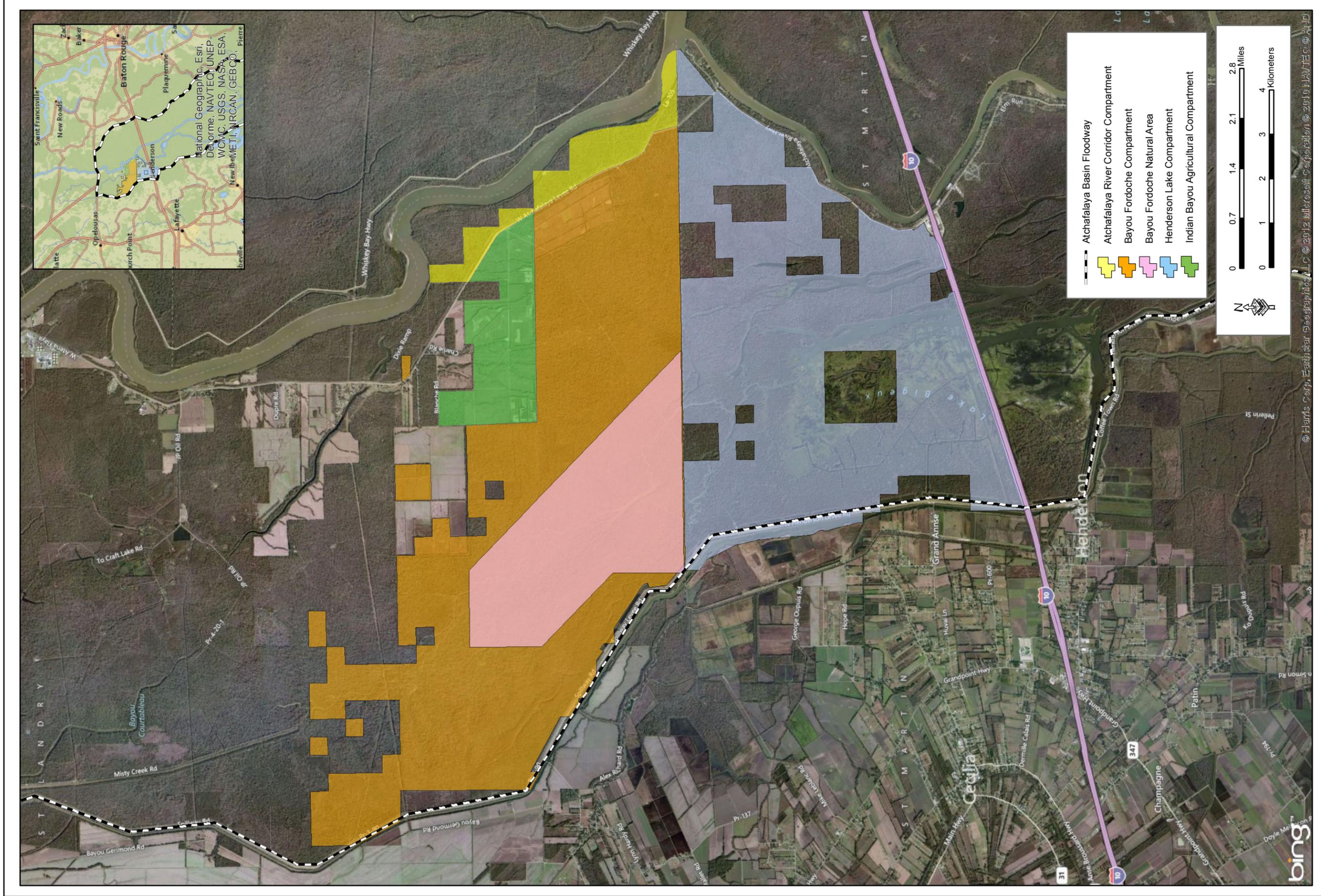


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Figure 12. North Farm Compartment



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Figure 13. Indian Bayou Area

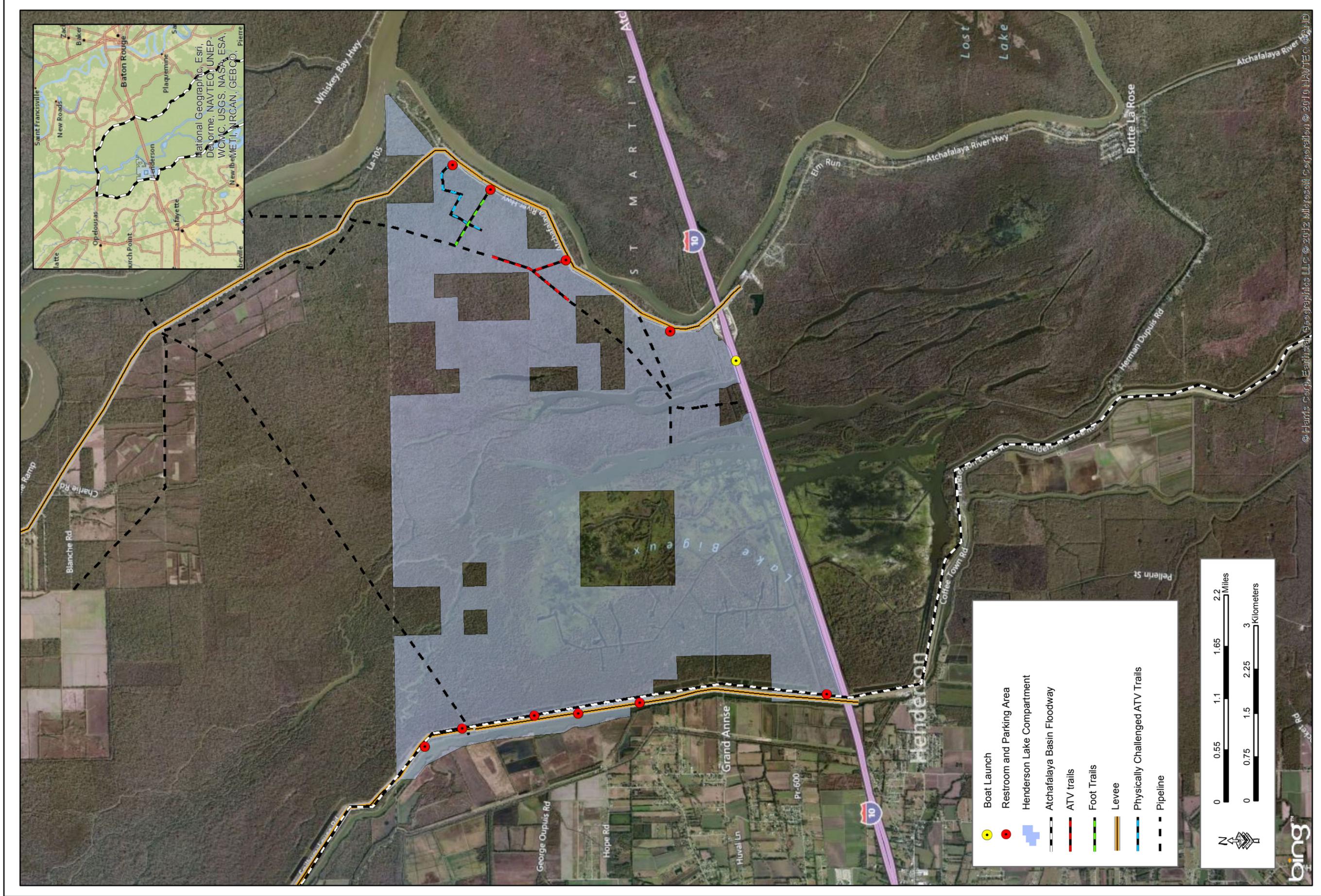


Figure 15. Henderson Lake Compartment

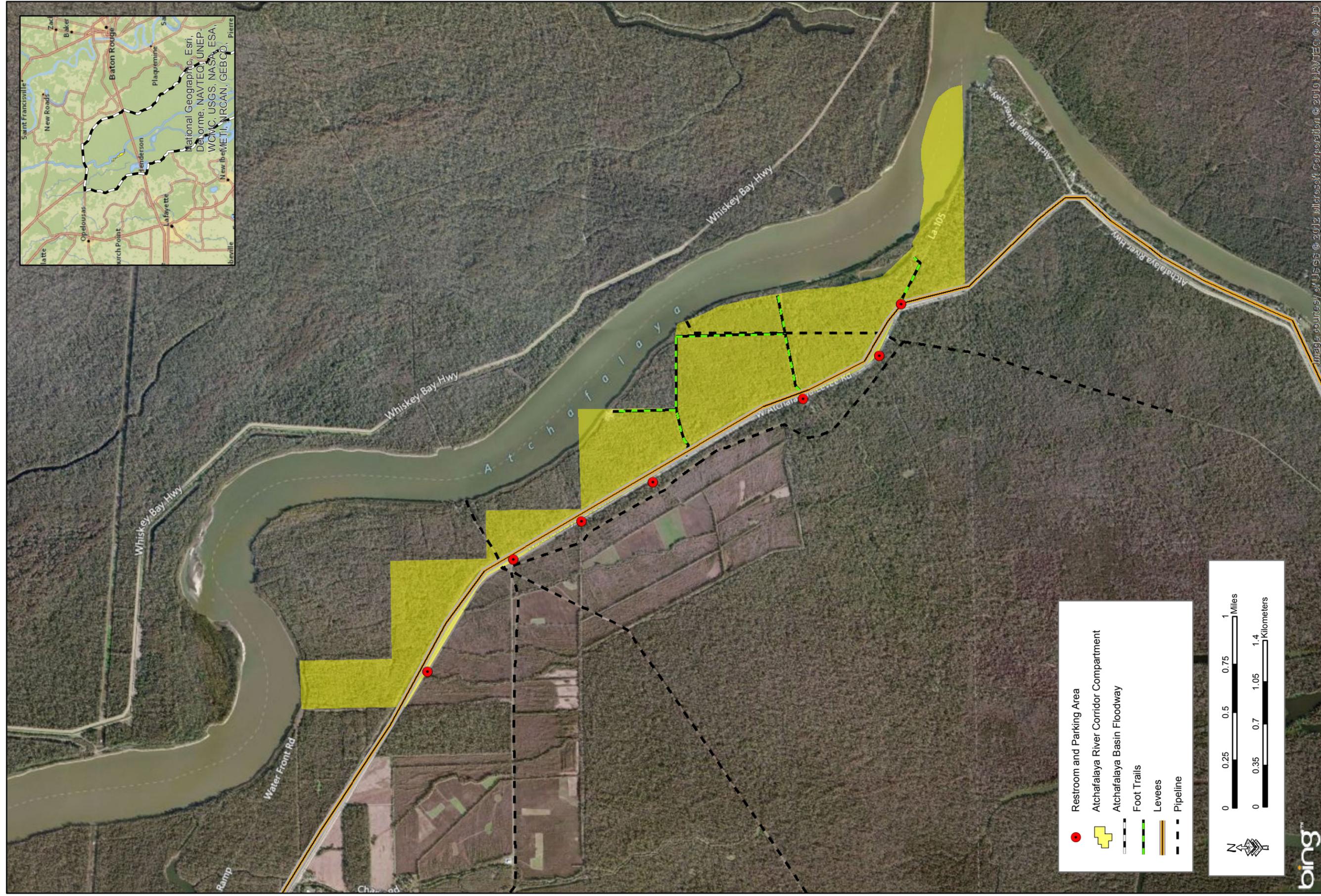


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Figure 17. Atchafalaya River Corridor Compartment



Figure 18. Shatters Bayou Area

**APPENDIX D
PUBLIC MEETING COMMENTS**





ATTENDANCE RECORD

H

Date: DEC. 13, 2010 Meeting Name: Location: OPERATIONAL

PLEASE PRINT CLEARLY

First Last Name	Address	City	State	Zip	Email	Phone
1 Wallace Spence	383 Arlington Rd	Wash	LA	70588		337-658-815
2 Karen Westphal	6160 Pickering Rd, Suite 215	BR	LA	70608	kuzspk@audubon.org	225-768-0921
3 Guy Cormier	P.O. Box 9	St. Martinville	LA	70580	gscormier@stmartinparish.net	
4 ROGER DRAKE	953 Azalea St.	CAF.	LA	70506		
5 Becky Williams					coyotebee@gmail.com	
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Newspr

ATTENDANCE RECORD

Date: Dec 13, 2010 Meeting Name: Location: Opelousas High

*** PLEASE PRINT CLEARLY ***

First Last Name	Address	City	State	Zip	Email	Phone
1 Toni DeBosier	1183-A Wade Martin Rd	Baton Rouge	LA	70808	Antoinette.debosier@la.gov	225-278-1141
2 Gary McGoffin	P.O. Box 51308	Lafayette	LA	70505	gary.edmus@com	337-233-0300
3 John Williams	107 SILVERBELZ PKY	LAFAYETTE	LA	70508	GUMBALAYA@GMAIL.COM	337 781 9096
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US Army Corps
of Engineers
New Orleans District

ATTENDANCE RECORD

F

Date: 14 Dec 10

Meeting Name

****PLEASE PRINT CLEARLY****

Location:

Boutwell LA

First Last Name

Address

City

State

Zip

Email

Phone

News

1	LAMAR HALE	USACE	NEW ORL	LA	ON FILE	504-862-1872
2	Lou Boutwell	Le. Arch	B. R.	LA	lou.boutwell@usace.army.mil	225-342-3583
3	Leigh Haynie	Basinkeeper			enviro1a@gmail.com	337-962 60
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US Army Corps
of Engineers
New Orleans District

ATTENDANCE RECORD

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Date: 14 Dec 2010

Meeting Name: POXT ALLEN

Location: POXT ALLEN

*** PLEASE PRINT CLEARLY ***

	First Last Name	Address	City	State	Zip	Email	Phone
1	Karen St. Germain	57835 Magnolia St	Pleasant	LA	70764	Kstgerm@be1south.net	225-687-2410
2	Stephen Christ	617 N 3rd St	Baton Rouge	LA		stephen.christ@kaj.com	225-342-6940
3	Christ	716 S. River Rd	Port Allen	LA	70767	christ1011ve@aol.com	225-267-4845
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News



US Army Corps
of Engineers
New Orleans District

Atchafalaya Basin Floodway System Master Plan Update Public Scoping Meetings Synthesis

The US Army Corps of Engineers, New Orleans District, is updating the Atchafalaya Basin Floodway System project master plan which provides guidance for the nearly 50,000 acres of Corps-owned public lands and waters of Indian Bayou, Bayou des Ourses (managed in cooperation with Louisiana Department of Wildlife & Fisheries as part of the Sherburne WMA Complex), and Shatters Bayou. A key component of updating the plan is assessing the current use of the property and maximizing public access to the project area to enhance the fish and wildlife resources while balancing user interests and minimizing adverse impacts to the project area.

In order to make long-term decisions on current and future management of the area that are informed by public interests, the Corps hosted two public scoping meetings to collect feedback from interested parties. Both meetings were held in December 2010 and included identical content. The first meeting was held at Opelousas High School in Opelousas, LA and a second meeting was hosted at the West Baton Rouge Community Center in Port Allen, LA. The locations of the meetings were chosen to reach the complete spectrum of user groups within the basin and to avoid over representation from any one user group.

The public meetings included:

1. A brief PowerPoint presentation discussing current issues and potential improvements to public access and natural resources management in the Atchafalaya Basin Floodway System.
2. Staffed information booths about current and potential uses including: hunting, fishing, wildlife and forestry management, facilities, camping, trails and horseback riding, environmental easements, recreation and potential improvements.

Additional opportunities to provide feedback included submission of a brief, written questionnaire that was available both during the workshop and on the Corps' Web site. No pre-addressed postage-paid questionnaire responses were received after the meetings.

Comments on the Master Plan Update were also accepted at abfs@usace.army.mil. In total, 27 people attended the two public meetings and provided feedback on the Master Plan Update.

In addition to noticing the meetings in *Louisiana Sportsman* and local newspapers, the Corps distributed a news release which generated interest in the Master Plan Update public meetings. Corps spokespeople participated in two radio interviews discussing the meetings. On Dec. 13, 2010, Park Ranger Dave Fisher called in to the Jeff Boggs radio show on KANE 1240 AM and on Dec. 14, 2010, Natural Resources Management Chief

Michael Saucier called in to the Bernadette Lee and Ken Ramiro show on KPEL 1420 AM.

Crawfisherman

The Corps Public Affairs Office received telephone calls from a representative of an organized group of crawfisherman prior to the meetings. The caller suggested a large group of crawfisherman were planning to attend the public meetings to express their interests during the feedback session. However, public meeting attendance was low, fewer than 30 attendees, and of those attendees that returned a written questionnaire, two, or fewer than 7 percent of the respondents indicated their use of the Atchafalaya Basin was for recreational or commercial crawfishing. Crawfisherman did seem to provide ample verbal comments at the meetings however, there is no reason to believe the crawfisherman were over-represented in the public involvement process.

Suggestions offered by the crawfisherman include:

- Compromise on the dates/season and hours in which duck hunters and crawfisherman may use the Atchafalaya Basin. Allow both users to access the Basin during the same months of the year but allow duck hunters to be in the area from day break until 10 a.m., crawfisherman would be allowed in the same area from 10 a.m. to 4 p.m. Meeting attendees suggested that users found in the Basin at the wrong times should be cited and fined and also suggested that the risk of non-compliance should be removal of their privileges to obtain USACE permits for future crawfishing.

Staffing

- Four of the 11 written questionnaire respondents and several verbal comments addressed the ability of the current Atchafalaya Basin staff to enforce existing rules and regulations. Comments suggested current users feel additional staff is necessary to enforce safety measures. This is of particular interest to non-consumptive users such as paddle boaters, hikers and bird watchers however litter in the Basin is a general concern to several user groups.
- Meeting attendees also suggested that a new the Atchafalaya Basin office should be located near I-10.

Invasive Species Management

- Meeting attendees expressed concern about the local and state governments' management of hydrilla, an invasive species, in the Atchafalaya Basin, particularly in Henderson Lake. Hydrilla can grow as dense mats, which interferes with recreation and fishing in fresh water bodies. The meeting attendees claim the control measures implemented by the parish simply caused the hydrilla to float further downstream and functioned as a fertilizer making the hydrilla grow back in greater abundance the year after the management plan began. Respondents suggested the hydrilla should be managed by the Corps and that it should be managed more consistently.

Water Quality Management

- Meeting attendees provided verbal comments on Water Quality Management in the Atchafalaya Basin. They suggested the Indian Bayou Channel is not structurally sufficient to allow more water through and suggested the Gremmitt Canal be used to move the water. Users suggested that the Corps use caution in regards to reducing the head at Gremmitt Canal and that there be a consideration of moving the gate into the channel. It was suggested that the Corps clean out the area near the power lines.

Henderson Lake

- Meeting attendees suggested that the Corps work with Vermillion Parish to address the water management issues in Henderson Lake. They suggested that dilution is not the solution to the problem in Henderson Lake but that water would help push hydrilla through the lake. They also suggested the LDWF control gates be opened when the Atchafalaya River is falling and that such openings be coordinated with landowners.

Real Estate

- Meeting attendees provided verbal comments asking that funds being expended on purchase of developmental control easement should be spent in purchase of lands in fee. Landowners also asked to have input on timber harvesting and restrictions on future fees and purchases made by the Corps.

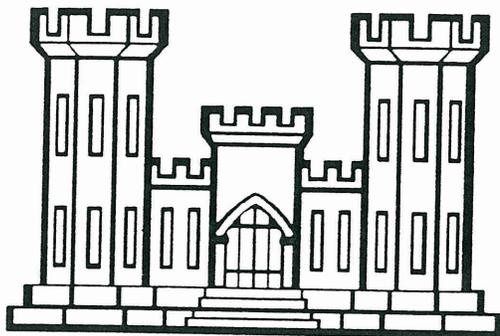
Non-consumptive user groups (cyclers, paddlers, bird watchers, nature walkers and campers)

- Mixed feedback was received on whether or not cycling trails in the Atchafalaya Basin should be paved. About 18 percent of the written respondents mentioned a preference for paving cycling paths while verbal respondents asked that the paths not be paved but be laid with gravel.
- Cyclers and paddlers consistently asked for additional signage throughout the Atchafalaya Basin. They indicated a preference for the signage to include information about the length of time a trip would take to complete and its level of difficulty.
- Non-consumptive users requested better online resources be made available. In addition of the trail map, meeting attendees suggested development of an online database for camping, fishing and hiking trails and rules. They suggested the site be interactive and have a mechanism to allow users to upload pictures and leave comments about the sites.
- Paddlers made several requests for additional information to be available online. For example one respondent said the Corps could remove floating markers and simply create a downloadable trail map with GPS to guide paddlers safely though the Basin. Maps could include information about what level the water would be so the paddlers would know whether or not reaching those locations is feasible

during that season. Other respondents wanted the rules of use in the Basin to be better publicized.

- Paddlers asked for camp sites to be available along the canoe route but want those sites to be limited to paddlers because campers who use RVs have loud generators that prevent paddlers from sleeping at night. The respondents suggested the campsites would be tourist attractions. Meeting attendees asked that the campsites be built on platforms and include fire rings and restrooms.
- A representative from the Boy Scouts of America attended one of the public meetings and indicated an interest in developing a formal partnering agreement with the Corps that would include projects worthy of earning Eagle Scout designation.
- Meeting attendees indicated a willingness to volunteer in the Atchafalaya Basin for Step Outside Day and other events. They suggested those types of events be publicized more and that publicity materials have specific examples of what volunteers would be doing on those days.
- Paddlers asked for primitive boat launch areas while other boaters asked for paved boat launches. Both users agree more information about where to launch boats would be helpful. Paddlers suggested the Corps webpage be linked to BayouHayStackers.com, LafayettePaddleClubOnline.com and BayouTrailsClub.org.

APPENDIX E
MEMORANDUM OF UNDERSTANDING BETWEEN
USACE AND THE STATE OF LOUISIANA



**Memorandum of Understanding
Between the
U.S. Army Corps of Engineers
Mississippi Valley Division
and the
State of Louisiana
for the
Lower Atchafalaya Basin Floodway**



MEMORANDUM OF UNDERSTANDING

BETWEEN THE U. S. ARMY CORPS OF ENGINEERS
MISSISSIPPI VALLEY DIVISION
AND
THE STATE OF LOUISIANA
FOR THE
LOWER ATCHAFALAYA BASIN FLOODWAY

I. INTRODUCTION

A. The Lower Atchafalaya Basin Floodway is one of the most important and largest river overflow swamp wetland complexes in the United States. The natural resources of the Lower Atchafalaya Basin Floodway are of immense importance to the State of Louisiana and the Nation and offer major potential for outdoor recreational use. The Lower Atchafalaya Basin Floodway serves as a major element of the Mississippi River and Tributaries flood control project, which protects important parts of South Louisiana from Mississippi River flooding.

B. Both the U.S. Army Corps of Engineers (Corps) and the State of Louisiana (State) are dedicated to finding ways to protect and enhance the natural resources of the Lower Atchafalaya Basin Floodway and to benefit from its potential for use in controlling destructive floods, and to that end, join in this Memorandum of Understanding to memorialize the mutual vision of the Corps and the State for the Lower Atchafalaya Basin Floodway.

II. U.S. ARMY CORPS OF ENGINEERS' ATCHAFALAYA BASIN FLOODWAY SYSTEM, LOUISIANA PROJECT

A. In January 1982, the District Engineer of the New Orleans District of the Corps recommended the approval of the "Atchafalaya Basin Floodway System, Louisiana Feasibility Study," dated January 1982.

B. The Supplemental Appropriations Act of 1985, Public Law 99-88, authorized a multi-purpose plan, officially designated as the Atchafalaya Basin Floodway System, Louisiana project, in

4. Water management - Construction of two pilot management units and implementation of future units at the discretion of the Chief of Engineers; Construction of miscellaneous canal closures and water circulation improvements.

5. Recreation Development Purposes - Fee simple title, excluding minerals, on 1,500 acres of privately owned lands.

H. The Energy and Water Development Appropriations Act of 1997, Public Law 104-206, appropriated funds for, and authorized the Corps of Engineers to construct the Atchafalaya River Landing, Simmesport, Louisiana project, consisting of a boat ramp and the facilities associated therewith, as a part of the recreation feature of the Atchafalaya Basin Floodway System, Louisiana project.

I. As of the effective date of this Understanding, the following additional Federal decision documents and actions have been effected:

1. By memorandum dated January 25, 1994, the Corps approved Real Estate Design Memorandum No. 1 (Revised) - Supplement No. 1. Currently, approximately 33,000 acres of fee lands and 106,100 acres of environmental protection and developmental control easements have been acquired.

2. By memorandum dated March 25, 1993, the President of the Mississippi River Commission approved the document entitled, "Flood Control, Mississippi River and Tributaries, Atchafalaya Basin Floodway System, Louisiana, Buffalo Cove Pilot Management Unit, Bayou Eugene, Engineering and Design Prototype Model Test" for the construction of the Buffalo Cove Pilot Management Unit, Bayou Eugene Prototype Model Test Project, construction of which project was completed in 1995.

3. By memorandum dated July 17, 1996, the President of the Mississippi River Commission approved the "Interim Report on Simmesport Boat Ramp: Recreation Element of the Atchafalaya Basin Floodway System, Louisiana Project," dated April 1996, for the construction of the Atchafalaya Basin Floodway System, Louisiana, Project, Atchafalaya River Landing, Simmesport, Louisiana. Congress appropriated funds and approved the project as an element of the authorized recreation feature of the Atchafalaya Basin Floodway System, Louisiana Project in the aforesaid Public Law 104-206.

System, Louisiana Project. By letter dated September 27, 1996, the Louisiana Department of Natural Resources advised the Corps that Governor Foster had designated the Louisiana Department of Natural Resources to be the lead state agency to represent the State in the implementation of the project and to negotiate all contracts, agreements and the Project Cooperation Agreements with the Corps.

III. STATE OF LOUISIANA

A. The Secretary of the Louisiana Department of Natural Resources (DNR) authorized the appointment of the Atchafalaya Basin Advisory Committee (ABAC), an advisory committee which included eight state agencies involved in the Atchafalaya Basin (Agriculture and Forestry; Culture, Recreation and Tourism; Environmental Quality; Health and Hospitals; Natural Resources; Transportation and Development; Wildlife and Fisheries; and the State Land Office), along with representatives of federal and local government, commercial interests and environmental groups. The committee, through its working groups, developed a Memorandum of Understanding (ABAC MOU) which was signed on April 27, 1997 by the head of each of the aforesaid State agencies. The ABAC MOU demonstrated the State's commitment to the project.

B. The ABAC, through its working groups, developed a State Master Plan for the Atchafalaya Basin which was presented to the public at a press conference on April 23, 1998. The State Master Plan includes certain recommendations for the Lower Atchafalaya Basin Floodway, some of which recommendations represent authorized elements of the Federal Atchafalaya Basin Floodway System, Louisiana project. Governor Foster and representatives of the above-referenced State agencies indicated their support for the project.

C. The 1998 First Extraordinary Session of the Louisiana Legislature approved Act 3, which created the Atchafalaya Basin Program (Program) as an agency within the office of the Secretary of the Department of Natural Resources. The Program consists of the Atchafalaya Basin Research and Promotion Board (Board), the ABAC and the staff for the boards and commissions in the Program, including an Executive Director who is appointed by the Board, subject to the approval of the Secretary of the Department of Natural Resources. The Board is charged with the implementation of the features of the State Master Plan and consists of the Governor or a designee within his office; the Commissioner of the Department of Agriculture and Forestry; the Secretary of the Department of Culture, Recreation and Tourism; the Secretary of

statutory authorization and the approved Federal decision documents.

B. Flood Control and Environmental Protection: The Corps and the State shall execute a PCA, which shall define the Federal and non-Federal obligations for the flood control and environmental protection features of the Atchafalaya Basin Floodway System, Louisiana Project, in accordance with the Federal statutory authorization and with the approved Federal decision documents.

C. Water Management: The Corps will seek authority to implement the water management feature of the Atchafalaya Basin Floodway System, Louisiana Project in a spirit of partnership with the State; the State recognizes that such authority, if approved, may be conditioned upon the execution by the State of Louisiana of a binding agreement to voluntarily contribute 25 percent of the total cost of construction of the water management units. Upon receipt of such authority, the Corps and the State shall execute at least one PCA, which shall define the Federal and non-Federal obligations for the water management feature, in accordance with the Federal statutory authorization and the approved Federal decision documents. The authorized purpose of the water management feature of the Atchafalaya Basin Floodway System, Louisiana Project is to restore the historical overflow conditions within the management unit in order to benefit the aquatic ecosystem of the Lower Atchafalaya Basin Floodway System as described by the project authority and the above referenced project decision documents. The Corps has authority to plan and construct miscellaneous canal closures and water circulation improvements in the said project area. The Corps currently is authorized to plan and construct two pilot management units, and, after evaluation of the operational success of the pilot management units, to implement future management units at the discretion of the Chief of Engineers.

D. Recreation:

1. Atchafalaya River Landing, Simmesport, Louisiana Project: The Corps and the Parish of Avoyelles, Louisiana, shall execute a PCA, which shall define the Federal and non-Federal obligations in accordance with the Federal statutory authorization and the approved Federal decision documents for that element of the recreation feature of the Atchafalaya Basin Floodway System, Louisiana Project.

2. Remaining Elements of the Recreation Feature: The Corps will seek authority to implement the remaining elements of

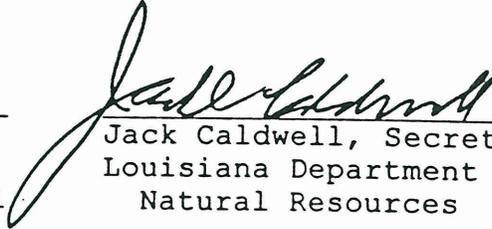
Engineer of the Mississippi Valley Division of the U. S. Army Corps of Engineers, and by the State of Louisiana, herein represented by the Secretary of the Department of Natural Resources, effective upon the date said agreement is signed by the representative of the U. S. Army Corps of Engineers.

U.S. ARMY CORPS OF ENGINEERS

THE STATE OF LOUISIANA



Phillip R. Anderson
Major General, U. S. Army
President Designee, Mississippi
River Commission

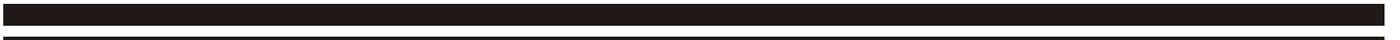


Jack Caldwell, Secretary
Louisiana Department of
Natural Resources

Date: 26 Oct 92

Date: 26 Oct 92

APPENDIX F
ADDITIONAL AUTHORITIES FOR THE ABFS PROJECT



ADDITIONAL AUTHORITIES

The Atchafalaya Basin is a large area, and other Corps programs may better serve to assist implementation of the State's Plan. For those elements of the State Master Plan that cannot be implemented under the federal ABFS authority other Corps programs may be available to assist implementation of the State Master Plan.

Under the authority provided by Section 103 of the River and Harbor Act of 1962 (P.L. 87-874), as amended, a Storm Damage Reduction (shoreline protection/restoration) feasibility study is currently underway for Highway 70, at Lake Palourde near Morgan City, Louisiana. If successful, its implementation could facilitate many of the recreational facility developments that cannot be cost-shared under this project.

The Corps has been given additional study authorities that might be applied to achieve some of the State or local government goals. These are usually characterized as small projects that address a specific problem. All require a cost-share partner. A discussion of these programs, effective through the enactment of the Water Resources Development Act of 1999, Public Law 106-53, is provided as informational material to this study.

D.1 Section 22, Planning Assistance to States and Tribes

Section 22 of the Water Resources Development Act of 1974, as amended, provides the Corps authority to assist States, Native American Tribes, local governments, and the various territories of the United States, in preparing comprehensive plans for the development, utilization, and conservation of water and related resources of drainage basins, watersheds, or ecosystems located within the boundaries of the jurisdiction of the non-federal sponsor.

The Planning Assistance to States program is funded annually by Congress. Of this annual, nation-wide appropriation, each state or tribe may request a total annual maximum of \$500,000. Individual studies, of which there may be more than one per state or tribe per year, generally cost \$25,000 to \$75,000. These studies are cost shared on a 50-50 basis (federal/non-federal). Each state and tribe determines what planning assistance is needed. Annually, the Corps accommodates as many study requests

Navigation	Section 107 River & Harbor Act of 1960, as amended	\$4,000,000 (Initial Costs) Total Costs = Greater of 2.25 times Initial Costs or \$4,500,000
Mitigation of Shoreline Damage	Section 111 River & Harbor Act of 1968, as amended	\$5,000,000 or specific authorization
Hurricane & Storm Damage Reduction	Section 103 River & Harbor Act of 1962	\$2,000,000
Emergency Streambank & Shoreline Protection	Section 14 Flood Control Act of 1946, as amended	\$1,000,000

For Sections 103, 107, 111, and 205 studies, the objectives of the feasibility study are the same as those for larger, individually-authorized studies. The first \$100,000 is a federal expense. The remainder of the cost of the feasibility study is cost-shared 50-50 with the non-federal sponsor pursuant to the feasibility cost sharing agreement. Following approval for implementation and funding, the non-federal interest and the Federal Government sign a Project Cooperation Agreement which will contain the cost-sharing provisions required by the statutory authority for the given continuing authority program.

Planning and Design Analysis (PDA), for Section 14 and Section 208 projects, is accomplished in a single phase. The PDA costs are initially federally-financed. The PDA costs less than \$40,000, are federal costs. Costs in excess of \$40,000 are cost-shared during construction.

D.3 Section 1135, Project Modifications for Improvement of the Environment

Section 1135 of the Water Resources Development Act of 1986, as amended, authorizes, for the improvement of the environment, modifications to existing water resources projects constructed by the Corps. Projects addressing environmental quality degradation

than \$5,000,000) or the Corps headquarters (federal cost above \$5,000,000).

The law requires non-federal interests and/or non-profit entities (which may serve as the non-federal sponsor with the consent of the affected local government) to enter into a binding cooperative agreement to provide 25 percent of construction costs, including all lands, easements, rights-of-way, and necessary relocations, as well as 100 percent of operations, maintenance, replacement, and rehabilitation costs associated with the project for the protection, restoration, and creation of aquatic and ecologically related habitats.

D.5 Section 206, Aquatic Ecosystem Restoration

Section 206 of the Water Resources Development Act of 1996, as amended, authorizes aquatic ecosystem restoration projects that improve environmental quality, are in the public interest, and are cost effective. Projects must be designed to restore aquatic ecosystem structure and function. This usually involves manipulation of the hydrology in and along bodies of water, in wetlands or riparian areas. No relationship to a Corps project is required.

The nation-wide program received initial funding of \$6,000,000 in FY 1998. Individual projects are limited to a federal cost of \$5,000,000, at a single locality. The non-federal interest and/or non-profit entity (which may serve as non-federal sponsor with the consent of the affected local government) must enter into a binding agreement with the United States wherein it agrees, among other things, to contribute 35 percent of the cost of construction and 100 percent of the cost of operation, maintenance, replacement, and rehabilitation.

D.6 Section 216, Modification of Completed Projects

Section 216 of the River and Harbor and Flood Control Act of 1970, allows modification of completed projects, if physical, economic, and/or environmental conditions have changed. Unlike other authorities outlined above, Section 216 is not an annually-funded or continuing authority, but is applicable to any existing Corps project. The initial phases of project modification planning (an initial appraisal report, and reconnaissance study) are 100 percent federally-funded. Feasibility studies are cost shared 50-50 (federal, non-federal).

APPENDIX G
AGRICULTURAL AND WILD PRODUCTION ENTERPRISE (2006)

Agricultural and Wild Production Enterprises in ABLP Parishes, 2006

	Parish	No. of producers	acres	total production	unit of measure	gross farm value
Cotton	Avoyelles	15	10,301	12,052,170	Lbs.	\$3,378,223.00
	Pointe Coupee		2,697	3,236,400.00		1,474,140.00
	St. Landry		1,041	2,165,280.00		606,928.00
	Iberville					
	St. Martin					
	Iberia					
	St. Mary					
Forestry Products	Avoyelles					\$3,713,105.00
	Pointe Coupee					3,046,684.00
	St. Landry					8,090,844.00
	Iberville					1,731,347.00
	St. Martin					1,263,657.00
	Iberia					10,274.00
	St. Mary					141,353.00
Fruits	Pointe Coupee		2	3,700.00	flats	74,000.00
	St. Landry			1,000.00	flats	20,000.00
	Iberville					
	St. Martin		31			228,050.00
	Iberia		122			746,250.00
	St. Mary		21			168,750.00
Feed grains	Avoyelles	57	20,661			\$10,411,051.00
	Pointe Coupee	17	13,700			8,607,319.00
	St. Landry	77	16,079			7,431,102.00
	Iberville		1,034			373,543.00
	St. Martin		891			316,483.00
	Iberia					
	St. Mary					
Greenhouse vegetables	Avoyelles		6,000	25,200.00	lbs.	\$50,400.00
	Pointe Coupee			87,750.00		175,500.00
	St. Landry					
	Iberville					
	St. Martin					
	Iberia					
	St. Mary					
Hay for sale	Avoyelles	410	2,105			\$276,803.00
	Pointe Coupee					570,880.00
	St. Landry	203	15,225			8,809,827.00
	Iberville					
	St. Martin		3,400			1,788,541.00
	Iberia	15	2,510			1,003,477.00
	St. Mary					

	Parish	No. of producers	acres	total production	unit of measure	gross farm value
Home gardens	Avoyelles	754				\$386,048.00
	Pointe Coupee	1,115				570,880.00
	St. Landry	5,300				2,713,600.00
	Iberville	842				431,104.00
	St. Martin	3,350				1,715,200.00
	Iberia	6,500				3,328,000.00
	St. Mary	7,500				3,840,000.00
Nursery crops	Avoyelles					\$502,500.00
	Pointe Coupee					
	St. Landry					2,500,000.00
	Iberville					
	St. Martin					
	Iberia					3,000,000.00
	St. Mary					
Pecans	Avoyelles	150	462	145,700.00	lbs.	\$141,580.00
	Pointe Coupee	2,370	6,540	1,005,200.00		843,340.00
	St. Landry	376	1,375	343,750.00		286,250.00
	Iberville	397	760			59,575.00
	St. Martin	1,108	900			59,000.00
	Iberia	1,270	460			107,700.00
	St. Mary					
Sod	Avoyelles					
	Pointe Coupee					
	St. Landry					
	Iberville		150			750,000.00
	St. Martin					
	Iberia					
	St. Mary					
Rice	Avoyelles	18	14,761	1,123,312.00	cwt.	\$14,861,418.00
	Pointe Coupee		2,742	175,488.00		2,321,706.00
	St. Landry	87	26,481	1,721,265.00		22,772,336.00
	Iberville					
	St. Martin	16	4,170	271,050.00		3,585,992.00
	Iberia	6	817	31,699.00		419,378.00
	St. Mary					
Soybeans	Avoyelles	152	80,689	2,339,981.00	bu.	\$23,257,539.00
	Pointe Coupee	45	66,866	3,411,186.00		33,904,460.00
	St. Landry	209	91,880	3,215,800.00		31,962,479.00
	Iberville	25	9,866	463,702.00		4,608,827.00
	St. Martin					
	Iberia	29	7,381	361,669.00		3,594,701.00
	St. Mary	12	4,115	172,830.00		1,717,792.00

	Parish	No. of producers	acres	total production	unit of measure	gross farm value
Sugarcane	Avoyelles	12	7,940			\$7,721,414.00
	Pointe Coupee	30	33,016			41,094,675.00
	St. Landry	6	6,818			5,724,077.00
	Iberville	31	35,731			44,047,730.00
	St. Martin	55	29,881			31,865,194.00
	Iberia	85	57,676			60,185,350.00
	St. Mary	42	44,596			47,210,708.00
Vegetables	Avoyelles		2,595			\$499,925.00
	Pointe Coupee		226			1,837,300.00
	St. Landry		108			520,465.00
	Iberville		125			702,000.00
	St. Martin					
	Iberia		162			976,125.00
	St. Mary					
Wheat	Avoyelles	10	5,518	331,080.00	bu.	\$1647,123.00
	Pointe Coupee	30	19,280			6,618,342.00
	St. Landry	40	11,796			3,521,106.00
	Iberville	14	1,549			547,146.00
	St. Martin		44	22,572.00		112,296.00
	Iberia		958	51,732.00		257,367.00
	St. Mary		823	37,021.00		
Total all plant enterprises	Avoyelles					\$73,668,700.00
	Pointe Coupee					109,105,411.00
	St. Landry					97,305,010.00
	Iberville					54,309,644.00
	St. Martin					44,939,706.00
	Iberia					73,628,621.00
	St. Mary					53,262,782.00
Aquaculture (crawfish, catfish, alligators)	Avoyelles	55	11,000			\$3,245,000.00
	Pointe Coupee		3,027			2,258,630.00
	St. Landry		15,230			10,782,840.00
	Iberville	9	6,107			1,149,829.00
	St. Martin	75	19,000			17,936,000.00
	Iberia					
	St. Mary					
Freshwater fisheries (crawfish - wild)	Avoyelles	34		251,520.00	Lbs.	\$225,739.00
	Pointe Coupee					
	St. Landry	61		58,317.00		36,308.00
	Iberville	312		2,317,350.00		1,378,128.00
	St. Martin	294		6,498,949.00		3,809,684.00
	Iberia	78		193,921.00		122,131.00
	St. Mary	306		1,613,204.00		994,540.00

	Parish	No. of producers	acres	total production	unit of measure	gross farm value
Freshwater fisheries (finfish)	Avoyelles	81		4,690,978		\$1,201,359.00
	Pointe Coupee					
	St. Landry	66		822,042.00	lbs.	304,813.00
	Iberville	158		589,744.00	lbs.	201,751.00
	St. Martin	159		733,846.00	lbs.	245,325.00
	Iberia	76		223,111.00	lbs.	99,441.00
	St. Mary	157		1,347,166.00	lbs.	549,913.00
Marine fisheries	Avoyelles					
	Pointe Coupee					
	St. Landry					
	Iberville					
	St. Martin					50,391.00
	Iberia					2,836,736.00
	St. Mary					2,794,067.00
Fur animals	Avoyelles			388.00	pelts	\$1,304.00
	Pointe Coupee			56.00		188.00
	St. Landry					
	Iberville					
	St. Martin					
	Iberia					
	St. Mary					
Alligators	Avoyelles			2,107.00	Ft.	\$52,688.00
	Pointe Coupee			555.00		13,875.00
	St. Landry			382.00		9,563.00
	Iberville			1,965.00		49,125.00
	St. Martin			975.00		24,375.00
	Iberia			1,402.00		35,063.00
	St. Mary			8,332.00		208,313.00
Hunting leases (waterfowl)	Avoyelles	275	90,000 (leased)			\$4,500,000
	Pointe Coupee	10	4,000 (leased)			20,000.00
	St. Landry		10000 (leased)			500,000.00
	Iberville	10	100,000 (leased)			5,000,000.00
	St. Martin	35	22,000 (leased)			330,000.00
	Iberia		50 (leased)			750.00
	St. Mary	8	15,000 (leased)			225,000.00

	Parish	No. of producers	acres	total production	unit of measure	gross farm value
Hunting leases (all other game)	Avoyelles	89	50,100 (leased)			\$375,750.00
	Pointe Coupee	57	51,000 (leased)			382,000.00
	St. Landry		150000 (leased)			1,125,000.00
	Iberville	20	70000 (leased)			525,000.00
	St. Martin	175	180000 (leased)			1,350,000.00
	Iberia		300 (leased)			2,250.00
	St. Mary	100	80000 (leased)			600,000.00
Honey	Avoyelles	37		5,812.00	hives	\$431,483.00
	Pointe Coupee					
	St. Landry					
	Iberville					
	St. Martin	8		5,250.00		672,000.00
	Iberia					
	St. Mary					
Total all fisheries and wildlife enterprises	Avoyelles					\$10,033,323.00
	Pointe Coupee					2,675,194.00
	St. Landry					12,758,524.00
	Iberville					8,303,833.00
	St. Martin					24,417,775.00
	Iberia					3,096,371.00
	St. Mary					5,371,833.00
Cattle & Calves	Avoyelles	415				\$7,891,463.00
	Pointe Coupee	150				6,823,361.00
	St. Landry	485				6,632,328.00
	Iberville	200				4,881,794.00
	St. Martin	260				3,794,928.00
	Iberia	160				1,952,220.00
	St. Mary	30				2,370,778.00
Dairy	Avoyelles					
	Pointe Coupee					
	St. Landry					144,605.00
	Iberville					
	St. Martin					
	Iberia					
	St. Mary					

	Parish	No. of producers	acres	total production	unit of measure	gross farm value
Horses	Avoyelles					\$1,760,500.00
	Pointe Coupee					2,347,500.00
	St. Landry					10,587,000.00
	Iberville					4,495,500.00
	St. Martin					7,497,500.00
	Iberia					6,542,500.00
	St. Mary					327,500.00
Poultry	Avoyelles					
	Pointe Coupee					
	St. Landry					
	Iberville					
	St. Martin					14,445.00
	Iberia					
	St. Mary					
Rabbits	Avoyelles					\$2,617.00
	Pointe Coupee					
	St. Landry					
	Iberville					
	St. Martin	15				11,578.00
	Iberia					
	St. Mary					
Sheep	Avoyelles					\$5,205.00
	Pointe Coupee					
	St. Landry	45				143,947.00
	Iberville	12				43,255.00
	St. Martin					328,844.00
	Iberia					19,032.00
	St. Mary					
Goats	Avoyelles					\$55356.00
	Pointe Coupee					6,306.00
	St. Landry	12				13,234.00
	Iberville	8				27,497.00
	St. Martin	20				52,862.00
	Iberia					18,632.00
	St. Mary					16,863.00
Swine	Avoyelles					\$21,816
	Pointe Coupee					37,326.00
	St. Landry	15				24,972.00
	Iberville					19,588.00
	St. Martin	60				172,020.00
	Iberia	12				81,640.00
	St. Mary	6				81,260.00

	Parish	No. of producers	acres	total production	unit of measure	gross farm value
Exotic Animals	Pointe Coupee					
	St. Landry					
	Iberville					
	St. Martin					7,000.00
	Iberia					
	St. Mary					
Total all animal enterprises	Avoyelles					\$9,739,058.00
	Pointe Coupee					9,214,493.00
	St. Landry					17,546,086.00
	Iberville					9,467,634.00
	St. Martin					11,879,178.00
	Iberia					8,614,025.00
	St. Mary					2,796,400.00

(LSU Agricultural Center 2009)

APPENDIX H
EXAMPLE OF AN ANNUAL MANAGEMENT PLAN



ANNUAL MANAGEMENT PLAN FORMAT

FEDERAL FISCAL YEAR 2000

Work Area/Objective	Schedule	Hours		Cost		Contract/ Equip. Cost	Total Cost	Man-hours			
		HL	Total	HL	HL			AB	AM		
Administration/Equipment											
1. Administration/meetings	Jan-Dec	220	\$ 6,400.00	\$	6,400.00		6,400.00	200	20		
2. Prepare OMP	Jan-Dec	220	\$ 6,400.00	\$	6,400.00		6,400.00	200	20		
3. Equipment repair/maintenance	Jan-Dec	300	\$ 6,000.00	\$ 4,000.00	\$	10,000.00	10,000.00		300		
4. Equipment purchase	Jan-Dec	20	\$ 600.00	\$ 4,000.00	\$	4,600.00	4,600.00		20		
5. Custodial Functions	Jan-Dec	200	\$ 4,000.00	\$ 2,000.00	\$	6,000.00	6,000.00		200		
Sub-Total		960	\$ 23,400.00	\$ 10,000.00	\$	33,400.00	33,400.00	420	540		
TOTAL WORK		4667	\$114,160	\$39,500		\$153,660	2082	2585			

ANNUAL MANAGEMENT PLAN FORMAT

FEDERAL FISCAL YEAR 2000

Work Area/Objective	Schedule	Hours		Cost		Contract/ Equip. Cost		Total Cost	Man-hours		
		HL	Total	HL	Total	HL	AB		AM		
1. Inspect/maintain stop-logs	Jan-Dec	150	\$	3,500.00	\$	1,000.00	\$	4,500.00	50	100	
2. Mow levees	May-Oct	250	\$	5,000.00	\$	2,000.00	\$	7,000.00		250	
3. Operate water pumps	Aug-Nov	75	\$	1,750.00	\$	2,500.00	\$	4,250.00	25	50	
4. Inspect/repair levees	Apr-Oct	120	\$	2,600.00	\$	2,000.00	\$	4,600.00	20	100	
5. Herbicide application	June-Aug	100	\$	2,200.00	\$	5,000.00	\$	7,200.00	20	80	
6. Pest management	Jan-Dec	90	\$	1,900.00	\$	1,000.00	\$	2,900.00	10	80	
7. Administrator/inspect farm lease	Mar-Oct	75	\$	2,250.00	\$	500.00	\$	2,750.00	75		
8. Limestone roads	June-Aug	10	\$	200.00	\$	2,000.00	\$	2,200.00		10	
9. Administration of crawfish permits	Mar-Jul	95	\$	2,050.00	\$		\$	2,050.00	15	80	
10. Disc/mow/plant impoundments	May-June	110	\$	2,300.00	\$	2,000.00	\$	4,300.00	10	100	
11. Bridge construction	Sep-Oct	100	\$	2,100.00	\$	2,000.00	\$	4,100.00	10	90	
12. Harvest data collection	Oct-Feb	400	\$	9,000.00	\$	1,000.00	\$	10,000.00	100	300	
13. Conduct managed hunts	Nov-Apr	400	\$	9,000.00	\$	500.00	\$	9,500.00	100	300	
14. Monitor alligator harvest	Sep	110	\$	2,300.00	\$	500.00	\$	2,800.00	10	100	
15. Monitor wood duck boxes	Feb-July	300	\$	7,000.00	\$	1,000.00	\$	8,000.00	100	200	
16. Telemetry research	Mar-Oct	710	\$	21,300.00	\$	1,000.00	\$	22,300.00	710		
17. Woodcock banding	Nov-Jan	100	\$	3,000.00	\$	500.00	\$	3,500.00	100		
18. Burn/mow study plots	Nov-Dec	75	\$	2,250.00	\$	500.00	\$	2,750.00	75		
19. Food plots	Apr-June	112	\$	2,560.00	\$	2,000.00	\$	4,560.00	32	80	
20. Road/trail maintenance	June-Aug	125	\$	2,500.00	\$	2,000.00	\$	4,500.00		125	
21. Vegetation sampling	Apr-Aug	200	\$	6,000.00	\$	500.00	\$	6,500.00	200		
Sub-Total		3707		\$90,760		\$29,500		\$120,260	1662	2045	

**APPENDIX I
OUTGRANTS**



TO BE PROVIDED IN FINAL MASTER PLAN UPDATE.

APPENDIX J
ABFS INTERPRETIVE PLAN





US Army Corps
of Engineers®

Atchafalaya Basin Floodway System Interpretive Services and Outreach Plan



**John Veverka & Associates
Michael Stout, MWH Americas, Inc.
Draft Final
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Project Introduction and Mission Statement.

The Atchafalaya River Basin, a wilderness of more than 838,000 acres, is the largest and greatest wilderness network of swamps, bayous, marshes, and forests in the United States and is home to vast cultural and natural resources. Ecologists rank the Basin as one of the most productive wildlife areas in North America, and it is an important flyway for migratory waterfowl and neotropical birds. The Basin supports an extremely productive sport and commercial fishery and provides unique recreational opportunities to hundreds of thousands of Americans each year. The mild climate, abundance of natural resources, and unique Spanish and French Acadian (Cajun) cultures have attracted economic investment to the area for centuries, in spite of the risks from periodic spring floods and hurricanes.

The natural basin extends from the proximity of Old River on the north, the Gulf of Mexico on the south, Bayou Teche on the west and the Mississippi River and Bayou Lafourche on the east. The Atchafalaya Basin in its current configuration has been shaped by human intervention for more than 150 years; the Corps has been actively involved for much of that time through three main projects--the Mississippi River & Tributaries Project (MR&T), the Atchafalaya Basin Project (AB) and the Atchafalaya Basin Floodway System Project (ABFS).

Beginning in the 1930s and continuing into the 1960s, the Corps' efforts in the Atchafalaya were focused on flood control - levee building and enlargement of the Atchafalaya River main channel. With growing public concern about environmental degradation in the basin and passage of the National Environmental Policy Act in 1969, the Corps undertook major studies of the basin and extensive coordination with other agencies and the public. The result of this effort was the 1982 Feasibility Study, which is a comprehensive plan that provides for the flood control and navigation works authorized by Congress but also provides for retention or restoration of the unique environmental values of the Atchafalaya Basin Floodway System. The Chief of Engineers approved the Feasibility Study in 1983 and Congress authorized the various project features in 1985 and 1986.

The ABFS project features a comprehensive real estate plan to enhance flood control by acquiring flowage and developmental control easements; protects the environment by acquisition of environmental protection easements; provides public access through Federal/State purchase of lands in fee; establishes management units wherein water levels are controlled to improve fishery production; and, develops recreational facilities to complement the public access lands and waters in the basin.

The ABFS project area encompasses 595,000 acres in the Lower Atchafalaya Basin Floodway, from U.S. Highway 190 to the vicinity of Morgan City, Louisiana. Of this vast area, the Corps has acquired approximately 50,000 acres of fee lands through direct purchase and providing protection to an additional 338,000 acres with comprehensive easements held on privately owned land. This combination of Corps-owned and protected private property will prevent, for example, development of farms, oil refineries and unrestricted residential camps. The absence of structures in project lands will help to pass floodwaters and maintain the environmental qualities of the basin; restricted logging will offer the greatest protection of the aesthetic values of the basin and

wetland trees such as cypress and tupelo. The recreation features authorized for the ABFS project area in the Lower Atchafalaya Basin include boat launching ramps, campgrounds and a visitor center.

Mission Statement for the Atchafalaya Basin Floodway System (ABFS)

The following project mission statement was developed by the USACE project team in July 2003 during a strategic planning session:

The ABFS Team, in cooperation with public and private interests, maintains and enhances a nationally significant environmentally and culturally diverse system, provides traditional and non-traditional outdoor uses, balancing competing interests through forward-thinking and technical expertise to benefit the people of Louisiana and the nation.



Purpose and Objectives for the ABFS Interpretive Services and Outreach Plan (ISOP)

The Corps defines interpretive services as communication and education processes provided to internal and external audiences, which support the accomplishment of Corps missions, tell the Corps story, and reveal the meanings of, and relationships between, natural, cultural, and created environments and their features. Freeman Tilden, who is known as the “Father of Interpretation”, defines interpretation as an educational activity which aims to reveal meanings and relationships

through the use of original objects, by firsthand experience, and by illustrative media, rather than simply to communicate factual information.

The Corps defines outreach activities as communication efforts involving interpretive programs that reach diverse populations such as students, teachers, organized groups such as Girl Scouts, Boy Scouts, 4-H and the general public beyond the physical boundaries of Corps projects and facilities. The National Environmental Policy Act encourages federal agencies to “enrich the understanding of the ecological systems and natural resources important to the Nation.” By virtue of the land and water resources under its administration, the Corps has a responsibility to take an active part in the process of creating a more knowledgeable public and educating the next generation about environmental matters. This is central to sustaining project resources particularly where visitor use levels are significant and present a challenge to resource protection.

The Corps recognizes that the ISOP is an important tool to achieve success in fulfilling the Corps stewardship missions. The value of outreach is to not only obtain the public’s understanding of the resources managed, but also to incorporate Corps customers as partners in managing resources. Community outreach provides environmental education to foster voluntary stewardship of natural, cultural, and created resources. It is also a tool to encourage students to pursue careers in mathematics and science. A relevant interpretive services and outreach program can enhance the visitor’s experience and enjoyment by anticipating their needs and providing interpretive resources to meet those needs. The Corps’ interpretive services and outreach program can empower the public with facts.

Other important goals of the ISOP include achieving management objectives using interpretive techniques, communicating the Corps’ Civil Works and Military missions and accomplishments to the public, decreasing visitor and team member injuries, promoting water safety and enhancing the experience and enjoyment of visitors to Corps projects. A secondary goal of the ISOP is the delivery of a message in a manner that educates and stimulates to achieve math and science literacy.

Vision Statement for the ABFS Interpretive Services and Outreach Program

The following vision statement has been developed over the past several years during various conversations with USACE project team members:

The Interpretive Services and Outreach Program for the Atchafalaya Basin Floodway System will focus on interpreting the ABFS project to enhance public understanding and appreciation of the history and purposes of the project, to educate the public about the breadth and significance of its natural and cultural resources, to encourage safe and responsible outdoor recreational pursuits, and to emphasize the importance of being stewards of those resources in order to preserve the basin for future generations.

Visitor Information and Education Issues

Based upon an analysis of current project activities and potentials, there are opportunities to:

- Provide more communication between agencies, special interest groups and the general public.
- Implement more educational programs. Topics should include water quality, history, culture, safety, recreation, nature and ecology.
- Develop public environmental education programs and facilities throughout the entire project area to enlist the public's awareness and support to enhance and protect the natural resources of the Atchafalaya Basin.
- Facilitate the use of project lands as outdoor classroom settings for schools to stimulate student interest and increase aptitude in the natural, physical and social sciences.
- Establish a network among local, state and federal conservation agencies concerning exchange of basin-related information for public education and management purposes.
- More effectively inform recreational users about special concerns and regulations regarding the use of public lands and waters.
- Increase public awareness that special use permits or other authorizations are required for hunting, crawfishing, and organized special events and commercial activities on public lands.
- Increase the reach and effectiveness of the project's Water Safety Program, with a particular focus on the hazards of Henderson Lake and fishing and hunting activities.
- Provide specific information to recreation users about the ABFS project and its relation to other related projects.
- Forge partnerships throughout the region that provide opportunities to cooperate with others to provide improved customer service and operational efficiency.
- Enhance the public's understanding of the Corps' mission for water resource development.

Visitor Services Objectives

The development of visitor services for information and recreation purposes should facilitate a safe and enjoyable experience in relation to the project resources and the Atchafalaya River. To achieve this end, visitor services should:

- Provide necessary directional information to enable visitors to easily find the project facilities.
- Provide visitors adequate information to correctly anticipate the magnitude and nature of the experience.
- Provide clear directions throughout the project area to minimize the need for direction giving by site personnel.
- Provide suitable and adequate resting areas for visitors walking to and from observation areas.

- Provide facilities that provide for visitor health and safety and enhance the visitor's experience such as picnic areas and observation areas.
- Provide the stimulus for cooperation with local communities to develop strong linkages between them and the Corps.
- Encourage partnerships and sponsorships that will promote the interpretation of Atchafalaya Basin values and a sense of proprietorship by local communities.
- Assist visitors with an understanding of other tourism facilities and attractions in the area.
- Provide a setting for schools to safely utilize project lands and facilities for environmental education.

ABFS Project Interpretive Objectives

The following general interpretive objectives are presented for the ABFS project. The interpretive and visitor services program should be designed and implemented so that visitors will be able to:

- Articulate the purposes of the Atchafalaya Basin Floodway System.
- Identify at least one way the Atchafalaya Basin directly affects their life.
- Identify at least two major basin issues and how those issues affect basin sustainability.
- Explain the role and basic functioning of the Atchafalaya Basin Floodway System.
- Identify the Corps roles in water resource development and management in southern Louisiana.

Of secondary importance, visitors to the project should be exposed to the following and should be able to display some understanding of:

- Native American life
- Historic uses and settlement of the Atchafalaya Basin
- Contemporary uses of the Atchafalaya Basin
- Sustainability issues in the watershed
- Other public agencies and non-governmental organizations involved in the Atchafalaya Basin
- Major habitat types
- Resident and migratory wildlife and fisheries
- Basin art and literature

Project Interpretive Resources and Priorities

Indian Bayou Area

The area referred to as Indian Bayou is considered the main area for visitor access and will be the main focus of the ISOP. This is a relatively undeveloped area, with several parking areas and some existing trails. Trails are primarily used for ATVs and hunting access. The main access points would be off I-10 from the south, and U.S. Hwy 190 from the north. At the Butte LaRose exit of I-10, the State of Louisiana operates the Atchafalaya Welcome Center, which has an interpretive mission complementary to the ABFS project.

Interpretive Plan Priority Items:

1. *Natural Resource Management and Visitor Information Facility* - The Indian Bayou Area is ideal for placement of such a facility. NRM staff would be onsite and better able to manage project lands and resources. It would also allow for more interaction between users/visitors and the staff. Location of the facility should take into consideration elevations, impact to resources, personnel access to project area and resources, and visitor access to information.

2. *The “main parking area”* within Indian Bayou has good visitation and some basic facilities. This main access point is ideal for development of interpretive features. In order to insure a cohesive design and deliver a clear message, planners should develop an interpretive site plan including parking, signage, interpretive trail(s), kiosk(s), restrooms and other facilities

3. *Several other parking/access areas* throughout the Indian Bayou Area should receive priority development of interpretive materials and facilities. These include the Oxbow parking area as well as the Bayou Courtableau boat launch site and the Dixie Pipeline/4C’s Camp site along the West Atchafalaya Basin Protection Levee. These sites should have a similar look and feel from the visitor/user prospective. Planners should work closely with operations project staff to develop site plans for these areas.

4. *The Atchafalaya Welcome Center* and Butte LaRose boat launch at the Butte LaRose exit off Interstate 10 is another priority ISOP site for the Indian Bayou Area. Discussions have been initiated to develop a partnership with the state agencies that manage this location. At the very least, this is an ideal site to distribute brochures and other printed interpretive material. Other ISOP possibilities include the location of Ranger-conducted programs, bulletin boards, and interpretive displays.

Bayou Des Ourses (Sherburne WMA)

The Bayou Des Ourses or Sherburne WMA is located relatively near Indian Bayou (across the Atchafalaya River). This area is in segmented ownership, major land holdings and management responsibilities belong to LA Department of Wildlife and Fisheries, USFWS, and USACE. There are also a number of private holdings. It will be important to work closely with the other responsible agencies when developing ISOP plans for this area.

ISOP Priority Items

1. *South Farm* is considered the main focus within this area. The interpretive site plan for this area can include parking, signage, interpretive trail(s), kiosk(s), restrooms and other facilities. Although the theme and take-away messages may differ from other locations, it is important to be identifiable, and to consider the look and feel of other similar interpretive features.

2. *The ATV Trailhead at the Wiltz Road* is a secondary location with interpretive potential.

Shatters Bayou

This area is mostly Cypress/Tupelo and relative to Indian Bayou and Sherburne, is remotely located. Primary access to this site is afforded by Myette Point Boat Launch. Currently in development is a paddling trail which may offer interpretive opportunities.

ISOP Priority Items

Integrate interpretive theme and clear message along the paddling path. There are also opportunities at the access point, Myette Point boat ramp.

Other Access Points for Atchafalaya Basin

There are many access points for the Atchafalaya Basin. Many of these sites are being redeveloped as cost-shared recreation features, such as Myette Point, Bayou Sorrel, Krotz Springs, and Lake End Park. Each of these should be considered for possible use for information distribution.

Indian Bayou Area of the Atchafalaya Basin Floodway System

The focus of this interpretive plan is for the Indian Bayou section of the Atchafalaya Basin (see map below). The bottomland hardwood forests and cypress swamps of Indian Bayou offer stunning views of unspoiled Louisiana Wilderness. Within the 28,500 acre area, recreational opportunities abound, complemented by minimal development that facilitates public access without harming the basin's wetland habitat.

The area-specific goals of the interpretive plan are to help increase visitation to the Indian Bayou area and help visitors understand and appreciate the Corps of Engineers roles in:

- Natural Resource Management
- Reforestation of former agricultural fields.
- Protection of cultural and archaeological resources.
- Controlling nuisance vegetation.
- Quality deer management programs.
- Safe use for a variety of hunting and fishing seasons.
- Facilitating Birding, nature watching and environmental education opportunities.

Indian Bayou is a wildlife treasure house of an unspoiled wetland wilderness, and the Corps of Engineers would like more visitors to be able to visit, use, and value this unique American landscape.

Atchafalaya Basin Floodway System Indian Bayou Area

Interpretive Theme and Objectives

Interpretive Theme:

Indian Bayou is part of the world's largest freshwater swamp – a natural history treasure to be conserved for wildlife and managed for outstanding recreational experiences.

Interpretive Program and Services Objectives:

During or upon completion of their visit to the Indian Bayou Area of the Atchafalaya Basin the majority of visitors will:

Primary Objectives

- Understand the USACE mission (who we are, what we do, benefits to the public) both nationally and for the New Orleans District.
- Understand multiple purposes of the Basin, and the Indian Bayou Area.
- Learn about the natural resource management programs of the Indian Bayou Area, particularly management programs that are visible to visitors using the many access areas for hunting or other recreational uses.
- Understand the major safety and use rules for visitors to participate in various recreational uses Indian Bayou area.
- Learn the variety of recreational opportunities that are available here.
- Learn about the seasonal opportunities available, such as hunting and crawfish harvesting seasons, watchable wildlife opportunities and seasonal wildflowers.
- Be able to find locations for Indian Bayou facilities, such as trail heads, activity areas, and related sites and facilities.
- Will be surprised and grateful that the USACE has developed and manages such a diversity of high-quality recreational opportunities and sites for the communities here, and all visitors.

- Will learn about any upcoming special events or programs being offered.
- Understand their own responsibility for adhering to rules and have a safe recreational and stewardship-like experience.
- Encourage visitors at the I-10 visitor center to stay longer and have at least an introductory experience with the natural and cultural history of the Indian Bayou Area.
- Understand that a large portion of this area was once agricultural fields and that the USACE has reforested nearly 2500 acres of cleared land with a diversity of trees.
- Learn how the USACE is protecting cultural and archaeological resources of the Indian Bayou Area.

Secondary Objectives

- Understand in a step-by-step manner how management programs at Indian Bayou are undertaken, and the long-term goals of these management practices.
- Gain a general time line understanding of the ABFS and its mission.
- Understand just how large the area is that the ABFS project team manages.
- Understand how the USACE management programs benefit people and the environment.
- Learn who the many different partners are of the Basin area, and their different roles here.
- Learn about the environmental education and outreach programs the staff here can provide.
- Be motivated to follow water safety messages and regulations.
- Learn about new self-guiding interpretive opportunities as they are developed.
- Learn about and be motivated to visit the Indian Bayou website.
- Learn that future interpretive brochures and media will be available in other languages.
- Will learn of the USACE volunteer programs, how to apply, etc.
- Learn about existing site brochures (bird lists, site overview/history publications) that are currently available for them.

- Learn about other USACE sites that they can visit to learn more about the USACE mission here.
 - Learn about nuisance vegetation such as invasive aquatic plant species such as water hyacinth, and the management problems they present.
 - Learn what management programs for invasive plants are being implemented.
 - Learn how the deer management program is being operated that the benefits of that program for both hunters and for the deer populations.
 - Learn how other game and non-game wildlife are managed that the benefits of those programs for both hunters and the wildlife populations.

Indian Bayou Visitation Data

Indian Bayou is a fairly “undeveloped” site that consists of several parking areas for access for visitors there for hunting, fishing or hiking access. There are also several ATV trail access parking areas as well. From discussion with USACE staff, the main current user groups include:

Deer hunters.

Small game, migratory game birds and waterfowl season hunters.

Anglers (year round season).

Currently more minor market groups include birding and watchable wildlife visitors.

School groups

General visitors here to explore the area, walk trails, etc.

These market groups make up the visitor numbers provided by the USACE Indian Bayou Staff.

Indian Bayou Visitation by Month

	2010	2009 IB	2008 IB	2007 IB	2006 IB	2005 IB	2004 IB	Grand Total	Annual Average
January	6723	6091	9068	5337	6379	7356	6916	47870	6838.571
February	4521	3297	4332	2454	3427	4850	6109	28990	4141.429
March	5020	4631	6687	4217	4287	5521	1444	31807	4543.857
April	4444	3476	2415	3213	3172	9019	1170	26909	3844.143
May	4901	2851	6120	3853	3792	11130	742	33389	4769.857
June	5681	2933	5665	3412	3889	6377	3504	31461	4494.429
July	4474	3206	4388	3901	2195	4782	342	23288	3326.857
August	4853	2634	7204	3894	5064	8419	1069	33137	4733.857
September	5228	3001	943	5001	5437	5617	6178	31405	4486.429
October	5459	3200	3136	5262	5740	4401	4615	31813	4544.714
November	6199	4405	5874	6686	3878	6209	4083	37334	5333.429
December	8284	5678	5405	9572	4656	6295	7761	47651	6807.286
Total	65787	45403	61237	56802	51916	79976	43933		

Market Creation Potential

As part of the interpretive planning process this Interpretive Plan recommends an intensive interpretive development near the Atchafalaya Welcome Center off of I-10. With very large visitor numbers stopping at this Welcome Center, it is projected that promoting interpretive

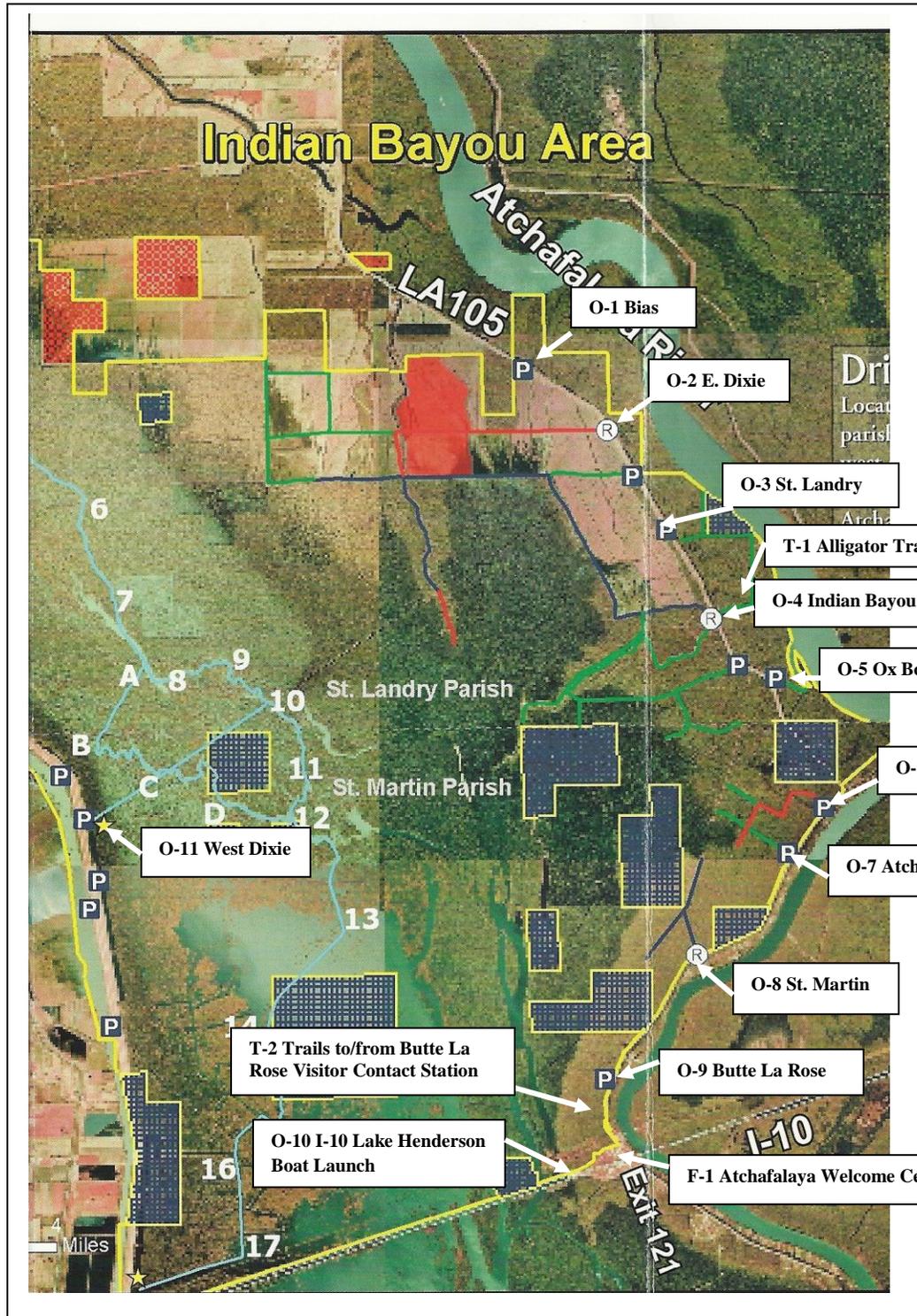
opportunities within the Indian Bayou area, and development of a visitor contact area at the Butte La Rose Parking Area near-by, could increase Indian Bayou visitation by more than 50,000 visitors a year, just about doubling its current visitor numbers.

It should be noted that these projected visitor numbers would be composed of new market groups including:

- Transient visitors, passing through the area on I-10 and stopping at the Welcome Center, and seeking a “Indian Bayou” natural history short visit experience.
- Regional visitors who learn about new or developing interpretive trails and related program experiences.
- Seasonal visitors in the area for bird watching and other tourism experiences.
- Formal school groups – with the Indian Bayou Area USACE staff developing and offering K-12 curriculum based interpretive/environmental education programs.
- Other hunters/anglers who were unaware of the hunting/fishing opportunities available in the Indian Bayou Area.

Atchafalaya Basin Floodway System – Indian Bayou Area Interpretive Site Index

- O-1 Bias Parking Area
- O-2 East Dixie Parking Area
- O-3 St Landry Parking Area
- O-4 Indian Bayou Parking and Use Area
- T-1 Alligator Trail
- O-5 Ox Bow Parking Area
- O-6 Pel Bay Parking Area
- O-7 Atchafalaya Parking Area
- O-8 St Martin Parking Area
- O-9 Butte La Rose Parking Area - Proposed Visitor Contact Station
- T-2 Butte La Rose Parking Area – Proposed Trails
- F-1 Atchafalaya Welcome Center
- O-10 I-10 Lake Henderson Boat Launch
- O-11 West Dixie parking area and boat access
- O-12 South Farm Wildlife Viewing Area





Interpretive Site Inventory ABFS – Indian Bayou

Site Index #: O-1

Site Name: Bias Parking Area

Site Location: See the site location map.

Site Description:

This is one of many (to follow) general parking areas used primarily by hunters during various hunting seasons. The bulletin board has the required posted hunting and use regulations and a brochure rack. There is no interpretation in place at this site.



Interpretive Significance: This is the first of several visitor parking/contact areas for visitors traveling South on LA 105 from Krotz Springs. These sites receive lots of use during the various hunting seasons.



Story Development ABFS– Indian Bayou

Site Index #: O-1

Site Name: Bias Parking Area

Interpretive theme or topics:

Indian Bayou is part of the world's largest freshwater swamp – a natural history treasure to be conserved for wildlife and managed for outstanding recreational experiences.

Interpretive topics for this parking/contact area could have a hunting and land management focus. This would be in addition to the information currently on the bulletin board, which probably currently does not receive a lot of use by visitors.

Site Objectives:

Basic road improvements for LA 105, which is a dirt road, can have a wide range of road conditions.

Interpretive Objectives:

During or upon completion of their visit, the majority of visitors will:

- Learn more about the forest management program and UASCE mission.
- Learn of other recreation use areas in the region.
- Have hunter safety regulations reinforced.
- Understand how the USACE is managing for various game species.
- Will learn they can call into a “cell phone” interpretive call center for more information on USACE resource management, programs and services (once developed as proposed).

Interpretive Media or Services:

Recommended interpretive Media:

- One 4' x 3' panel on resource management throughout the year. Would include proposed cell phone interpretation information once developed.
- Use of cell phone interpretation.
- Be listed in a proposed Indian Bayou Interpretive Guide Book.



Interpretive Site Inventory ABFS – Indian Bayou

Site Index #: O-2

Site Name: East Dixie Parking Area

Site Location: See the site location map – directly off LA 105.

Site Description:

This is another main parking area, primarily used for visitors parking here for different hunting seasons. This site may attract more user groups and it also has restroom facilities.



Interpretive Significance:

This is another main parking area used primarily during the hunting seasons. This site is also a starting point for handicapped ATV use as well. This is another prime user group contact area.



Story Development ABFS – Indian Bayou

Site Index #: O-2

Site Name: East Dixie Parking Area

Interpretive theme or topics:

Interpretation at this site will support the main interpretive theme previously presented. Additional topics could include:

- Showcase the project's active support of Wheelchair-bound hunting
- Present ATV handicap use and safety issues.
- Management and regulations for the diversity of hunting seasons.
- Cell phone contact information on various management programs.

Site Objectives:

This site, as are the other parking areas located along LA 105, is well maintained by the USACE. However, for more general visitors to be invited to this area, LA 105 needs to be upgraded from a dirt road with a wide variation in road conditions to a more reliable road bed.

Interpretive Objectives:

During or upon completion of their visit, the majority of visitors will:

- Learn about the wide range of USACE resource management programs in place to increase habitat for wildlife and for hunting, particularly the project's strong support for handicap hunting.
- Learn a little of the history of this site – from farmland back to forest lands.
- Learn the ATV rules and route (for handicap access).
- Learn where ATV trails are for non-handicap visitors.
- Be motivated to use the "cell phone" interpretation program (to be developed).

Interpretive Media or Services:

- New 4' x 3' interpretive panel (focus on objectives note above).
- Interpretation of this site via a new Indian Bayou Interpretive Guide.
- Interpretation of site resources via proposed cell phone interpretation.
- Interpretation via new information sheets on the USACE web site.



Interpretive Site Inventory ABFS– Indian Bayou

Site Index #: O-3

Site Name: St. Landry Parking Area

Site Location: See the site location map, directly off LA 105.

Site Description:

This is a more “minor” parking area (see photo below), with no restroom. It is used primarily by hunters during various hunting seasons.



Interpretive Significance:

As a smaller parking area, this site has minor interpretive significance. However, as one of the 11 visitor contact areas located along LA 105, a general orientation interpretive panel could be located here.



Story Development ABFS– Indian Bayou

Site Index #: O-3

Site Name: St. Landry Parking Area

Interpretive theme or topics:

Limited interpretation at this location would help support the main interpretive theme.

Additional interpretive topics could include:

- Resource management programs as related to the different hunting seasons.
- A map of other visitor contact areas (parking areas).
- Cell phone interpretation contact number (proposed).

Site Objectives:

None at this time. However, as noted, LA 105 is in need of significant improvements before this route can be marketed for general visitors.

Interpretive Objectives:

During or upon completion of their visit, the majority of visitors will:

- Be made aware of the hunting seasons/species.
- Know who they can contact for other hunting season information.
- Learn of the interpretive cell phone contact number.

Interpretive Media or Services:

- One 4' x 3' interpretive orientation panel (same panel to located at numerous parking areas).
- Cell phone interpretation contact information.



Interpretive Site Inventory ABFS – Indian Bayou

Site Index #: O-4

Site Name: Indian Bayou Parking Area, Ranger Station and Trail Head

Site Location: See the site location index map. Located directly off LA 105.

Site Description:

This is a larger and very well maintained visitor use area/parking area, with a temporary ranger station located in it (photo bottom left). There is also a trail head for the Alligator Trail, which will be addressed on a following form set.



Interpretive Significance:

This is the largest visitor contact area and could be easily developed for general (new) day use visitors being directed here from the Welcome Station. It has a well defined interpretive trail, and can be used as a meeting point for guided interpretive programs or walks.



Story Development ABFS – Indian Bayou

Site Index #: O-4

Site Name: Indian Bayou Parking Area, Ranger Station and Trail Head

Interpretive theme or topics:

Indian Bayou is part of the world's largest freshwater swamp – a natural history treasure to be conserved for wildlife and managed for outstanding recreational experiences.

This is the main interpretive theme (recommended) for Indian Bayou – total site. As a proposed main visitor contact and use area for new visitors, this site would have an overview of:

- USACE mission at ABFS project
- Resource management programs on-going here.
- Location of other trails and interpretive opportunities.
- Site history overview.

Site Objectives:

- Alligator trail improvements (to be noted on the following T-1 planning form set).
- Develop location for new 3- or 4-sided orientation kiosk.

Major road improvements are needed before this location can be marketed to general visitors whose cars may have access problems due to poor dirt road conditions.

Interpretive Objectives:

During or upon completion of their visit, the majority of visitors will:

- Learn the main USACE mission.
- Learn of Indian Bayou's relationship to the total Atchafalaya Basin.
- Understand a general history of Indian Bayou (from farmland to reforest program).
- Learn of other locations for different interpretive experiences (trails, hunting and fishing opportunities, etc.).
- Learn of the USACE (proposed) cell phone interpretation number.
- Be motivated to visit the USACE web site to download interpretive trail guides and other printed fact sheets.

Interpretive Media or Services:

Proposed interpretive media for this important contact point could include:

- New 3- or 4- sided interpretive orientation kiosk.
- Interpretive panel/Atchafalaya map to be located on the side of the ranger station.
- Improved interpretation for the Alligator trail (see following planning form set).
- Cell phone interpretation (to be developed).
- Interpretation and fact sheets via the COE Atchafalaya web site.
- Have the site and trail interpreted via a proposed Indian Bayou Interpretive Guide Book.



Typical Hopewell 3-sided kiosk.



Interpretive Site Inventory ABFS – Indian Bayou

Site Index #: T-1

Site Name: Alligator Trail

Site Location: Located in the Indian Bayou Parking Area (see the site location map).

Site Description:

The Alligator trail was planned and designed as an Eagle Scout project. It currently has a trail head sign, and some “purchased” information panels.



The trail entrance sign for the Alligator trail, one of the purchased information panels located along the trail, and a copy of the trail loop map, located on the Alligator Trail Head Sign.

Interpretive Significance:

This is currently the best developed interpretive trail within the Indian Bayou area. Its location in the Indian Bayou parking area, and the future development of the Indian Bayou Parking Area as a main visitor hub for general day use visitors, directed here from the Welcome Center and the other proposed visitor contact area by the Welcome Center.



Story Development ABFS – Indian Bayou

Site Index #: T-1

Site Name: Alligator Trail

Interpretive theme or topics:

Indian Bayou is part of the world's largest freshwater swamp – a natural history treasure to be conserved for wildlife and managed for outstanding recreational experiences.

This is the main interpretive theme for the total Indian Bayou area. An interpretive theme for the Alligator trail could be:

With new restoration programs, farmlands are being allowed to develop back into forests, increasing habitats for a diversity of wildlife that can be seen along this trail.

Site Objectives:

- Some trail work is needed to clear some fallen branches off the trail, and general trail grooming and widening.
- Develop a wildlife viewing area/deck close to the trail head by the bayou where visitors may be able to see alligators or other related wildlife.

Interpretive Objectives:

During or upon completion of their visit, the majority of visitors will:

- Learn what wildlife is native to this part of Louisiana.
- Understand the history of land use here, and the management program to restore farmland into forest lands.
- Be able to identify several common types of wildlife they may see here.
- Learn about alligator safety – do not approach, etc.
- Learn about invasive plant species and be able to identify several species they can see along the trail.
- Use cell phone interpretation to learn more about COE resource management, and seasonal wildlife/plants natural history.
- Want to visit the Atchafalaya Basin web site to find out more about sites they can visit and have other interpretive/recreational experiences.

Interpretive Media or Services:

Recommended interpretive media for this trail:

- Develop a new interpretive trail plan to focus stops related to the interpretive theme and other interpretive trail experiences.
- Develop a new Alligator trail entrance sign.
- Develop new interpretive trail stops (via self-guiding brochure first, then interpretive panels should trail use increase). The brochure could be available at the trail head sign or via the COE web site.
- Develop a watchable wildlife viewing area/deck with interpretive panel (sample below).





Interpretive Site Inventory ABFS – Indian Bayou

Site Index #: O-5

Site Name: Ox Bow Parking Area

Site Location: See the site location map.

Site Description: This area has the potential for developing a walking trail with a watchable wildlife/water viewing deck associated with it. It does have several areas (photo below) where viewing decks could be developed.



The main parking entry area (top left), the location for a potential watchable wildlife area and boardwalk by the river, and some of the many invasive plants (bottom) that were planted here when this area had homes located in it.

Interpretive Significance:

This is a large area with good access. It once had residents located here that had been removed, and does have electrical access.

There is also access to the river, and good interpretive opportunities for watchable wildlife, interpreting river ecology, and invasive plants once planted here as ornamentals. This is a good location for a future “group camping area” and for interpretive programs.



Story Development ABFS – Indian Bayou

Site Index #: O-5

Site Name: Ox Bow Parking Area

Interpretive theme or topics:

The main interpretive topics that can be presented here could focus around on the past land use, from agriculture to old housing areas, and the impact of past uses on today's ecology. The land management programs of the COE can be presented here as well, and interpretation of river ecology and hydrology. Alligators are commonly seen at this location and should be interpreted.

Site Objectives:

- Future development of group camping areas.
- Activate the electrical access when the site has been developed.
- Develop a wildlife viewing deck for the river, and a short river walk boardwalk trail.

Interpretive Objectives:

During or upon completion of their visit, the majority of visitors will:

- Learn about the past land use of the area.
- Learn that many plants they can see here were brought in by former residents.
- Gain an overview of the COE resource restoration program – farmland to forest habitat.
- Learn what a riparian habitat is – and an overview of river ecology.
- Learn where the river flows from and to. Learn how oxbow lakes are formed.
- Learn some interesting facts about alligators and their role in the ecosystem.

Interpretive Media or Services:

- New 4' x 3' interpretive orientation panel at the parking area entry.
- Interpretive information in the proposed Indian Bayou Interpretive Guide Book.
- Interpretive information to be located on the COE web site.
- Interpretation via cell phone interpretation (proposed).
- Interpretive panel 2' x 3' to be located on a future viewing deck.
- Live or guided interpretive programs.



Interpretive Site Inventory ABFS – Indian Bayou

Site Index #: O-6

Site Name: Pel Bay Parking Area

Site Location: See the site index map.

Site Description:

This is another large parking area used mainly during the various hunting seasons.



Interpretive Significance:

Pel Bay is a large parking area and could be a good visitor interpretation contact point. One of the 11 main visitor access points on the East side of Indian Bayou.



Story Development ABFS – Indian Bayou

Site Index #: O-6

Site Name: Pel Bay Parking Area

Interpretive theme or topics:

Future interpretation here would focus in illustrating the main interpretive theme, with emphasis on:

- Resource Management
- Hunter Safety and regulations
- Diversity of hunting seasons

Site Objectives: To be determined.

Interpretive Objectives:

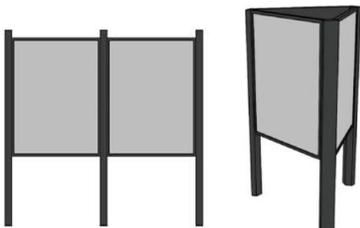
During or upon completion of their visit, the majority of visitors will:

- Understand the main mission of the COE.
- Learn of the resource management work being done in the area.
- Understand the hunting seasons and related regulations.
- Learn of cell phone interpretation opportunities.
- Learn of other recreation resource areas in Indian Bayou.
- Learn Indian Bayou's relationship to the larger Atchafalaya Basin management.

Interpretive Media or Services:

This would be a possible location for a one or two paneled interpretive kiosk – phased in later in the Indian Bayou interpretive media phasing strategy.

An interpretive kiosk would present information related to the above objectives.





Interpretive Site Inventory ABFS – Indian Bayou

Site Index #: O-7

Site Name: Atchafalaya Parking Area

Site Location: See the site location map.

Site Description:

This is another of the 11 designated parking/access areas used by hunters and other user groups to access the property. There are no interpretation or information kiosks currently at this site.



Interpretive Significance:

This is one of 11 visitor contact areas/parking areas used primarily by hunters during the various hunting seasons. This is a location that currently has no interpretive signage but could be a location for a two or three sided kiosk.



Story Development ABFS – Indian Bayou

Site Index #: O-7

Site Name: Atchafalaya Parking Area

Interpretive theme or topics:

The interpretive theme for the total Indian Bayou would be illustrated here. Focus for interpretation would be on the diversity of hunting seasons and hunter safety and hunting regulations.

Resource management and transition of farmland to forest can also be interpreted here.

Site Objectives: NA

Interpretive Objectives:

During or upon completion of their visit, the majority of visitors will:

- Learn the main mission of the USACE in Indian Bayou and for the Atchafalaya Basin.
- Learn the diversity of hunting seasons, opportunities and regulations.
- Learn the USACE information number/office location.
- Learn of the USACE cell phone interpretation opportunity (recommended).

Interpretive Media or Services:

Recommended interpretive media would be a two or three panel interpretive kiosk as illustrated.





Interpretive Site Inventory ABFS – Indian Bayou

Site Index #: O-8

Site Name: St. Martin Parking Area

Site Location: See the site index map.

Site Description: This is another typical access point used by hunters or anglers. It does have some facilities, and like most of the access sites, could be a location for an interpretive kiosk, or the development of an interpretive trail.



This is another of the 11 main visitor contact areas and parking areas. There is a restroom here, but no interpretive services

Interpretive Significance:

As noted, this is another visitor contact area/parking lot. With a restroom at this location it will probably get more use than the parking areas with no restroom facilities. There is no interpretation here, but like the other sites, could benefit from a two or three sided interpretive kiosk.



Story Development ABFS – Indian Bayou

Site Index #: O-8

Site Name: St. Martin Parking Area

Interpretive theme or topics:

Indian Bayou is part of the world's largest freshwater swamp – a natural history treasure to be conserved for wildlife and managed for outstanding recreational experiences.

Site Objectives:

- Consider the use of a one or two sided interpretive panel.
- Possible development for a self-guiding trail.

Interpretive Objectives:

During or upon completion of their visit the majority of visitors will:

- Understand the diversity of hunting seasons, regulations and safety issues.
- Learn how the COE is managing this resource to wildlife and people.
- Learn how Indian Bayou will change over time as farmland evolves into forest.
- Learn COE contact information.
- Learn about the use of cell phone interpretation (as proposed).

Interpretive Media or Services:

Interpretive media for this location could include:

- A two or three panel interpretive kiosk.
- Cell phone interpretation
- Interpretation via a Indian Basin Interpretive Guide Book





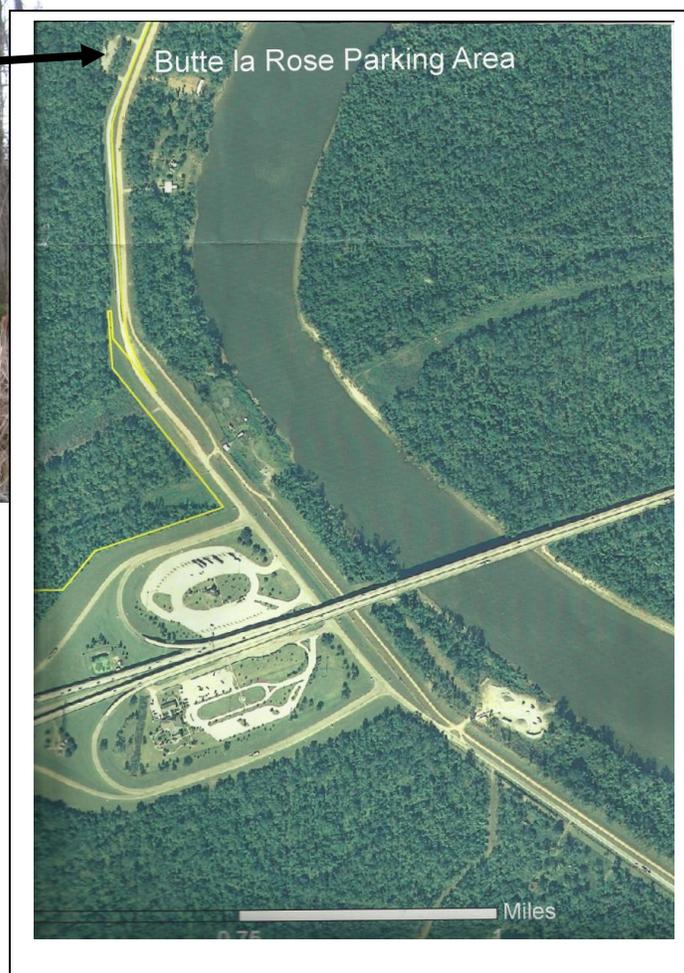
Interpretive Site Inventory ABFS – Indian Bayou

Site Index #: O-9

Site Name: Butte La Rose Parking Area - Proposed Visitor Contact Station

Site Location: See the site index map. This location is very near the Atchafalaya Visitor Center, which receives over 100,000 visitors/year.

Site Description:



Interpretive Significance:

As can be seen by the photo to the right, this parking area is very close to the formal Atchafalaya Visitor Center, and thousands of visitors each year that just “pass through” the region without the chance to learn or experience more about the Atchafalaya Basin and Indian Bayou.

This would be a perfect location for a full time un-staffed interpretive area, and a seasonally staffed visitor contact station.



Story Development ABFS– Indian Bayou

Site Index #: O-9

Site Name: Butte La Rose Parking Area - Proposed Visitor Contact Station

Interpretive theme or topics:

Indian Bayou is part of the world's largest freshwater swamp – a natural history treasure to be conserved for wildlife and managed for outstanding recreational experiences.

Site Objectives:

This is a proposed location for a new visitor contact station, as Indian Bayou does not have one at this time.

- Review the possibility for development of a visitor contact area that could include:
 - Interpretive pavilion with interpretive kiosks underneath.
 - Self-guiding interpretive trail to a wildlife/bayou viewing platform.
 - Increasing the parking lot to hold 20 cars.
 - Potential for a temporary building for seasonally staffing the location.
 - Small amphitheater or program area for school group tours or general public tours or programs.

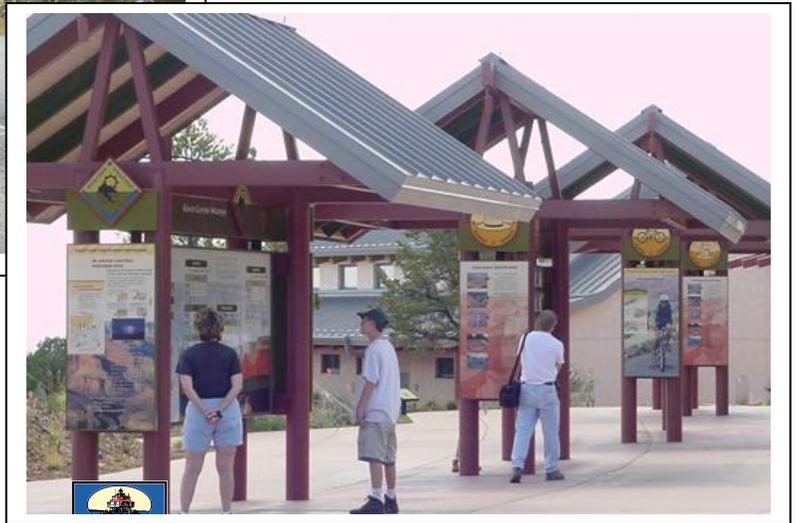
Interpretive Objectives:

During or upon completion of their visit, the majority of visitors will:

- Gain a general overview of the Atchafalaya Basin management, history, mission, etc.
- Learn the many partners associated with the management of the Atchafalaya Basin.
- Learn the USACE mission and various recreation and resource management programs here at Indian Bayou.
- Gain a general understanding of the natural history of the Indian Bayou area.
- Understand how the bayou watersheds function.
- Be motivated to visit other USACE experience, such as the alligator trail or Ox Bow area.

Interpretive Media or Services:

Interpretive media at the site could include a formal sheltered kiosk/exhibit interpretive area. This would be a self-experience station and could be a simpler version of the ones in the photos below.





Story Development ABFS – Indian Bayou

Site Index #: T-2

Site Name: Butte La Rose Parking Area – Proposed Trails

Interpretive theme or topics:

Indian Bayou is part of the world's largest freshwater swamp – a natural history treasure to be conserved for wildlife and managed for outstanding recreational experiences.

Site Objectives:

- Develop a walking trail plan that includes a trail from the State Welcome Station to the proposed Butte La Rose contact station and another trail from the Parking Area to Lake Pelba Viewing Area
- Develop an interpretive sign plan for self-guided interpretation to be located along these trails.

Interpretive Objectives:

During or upon completion of their visit, the majority of visitors will:

- Gain a general overview of the Atchafalaya Basin management, history, mission, etc.
- Learn the many partners associated with the management of the Atchafalaya Basin.
- Learn the USACE mission and various recreation and resource management programs here at Indian Bayou.
- Gain a general understanding of the natural history of the Indian Bayou area.
- Understand how the bayou watersheds function.
- Be motivated to walk the trail to the water viewing area.

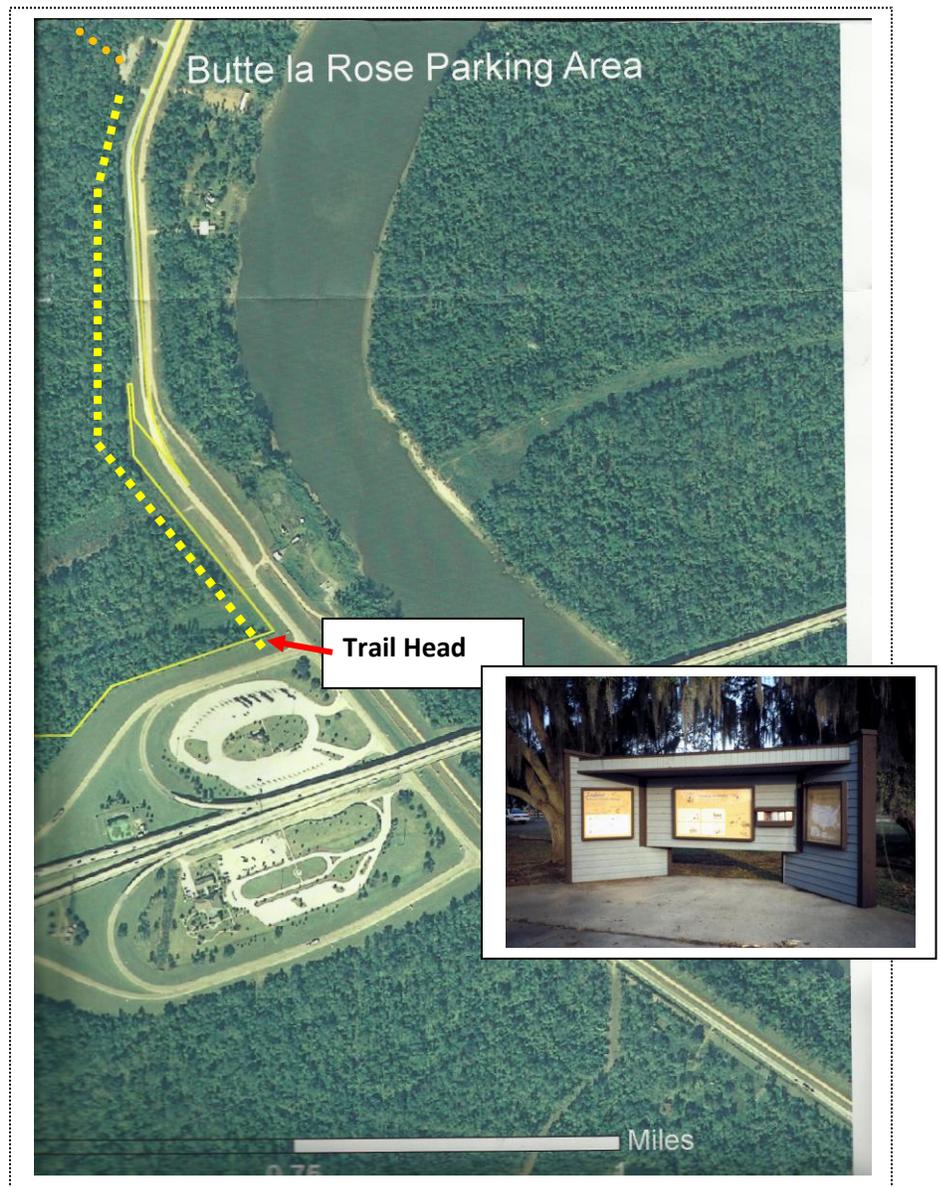
Interpretive Media Recommendations:

Proposed walking trail to the Station

An important interpretive service could be the development of an interpretive access trail leading from the State Welcome Station located on Interstate-10 to the proposed Butte La Rose contact station. This would give visitors a short walk to the station, and then an option to walk a second self-guiding trail to a bayou wildlife viewing platform.

This trail access option would have a trail head at the Welcome Center, and several interpretive stations along the trail to the Butte la Rose visitor contact station.

At the USACE contact station they could continue on a new self-guiding trail and platform to a wildlife watching area on the shore of Lake Pelba, or visit the interpretive features at the Butte LaRose parking area and return to the Welcome Center.



Proposed walking trail to Wildlife Viewing Deck on Lake Pelba

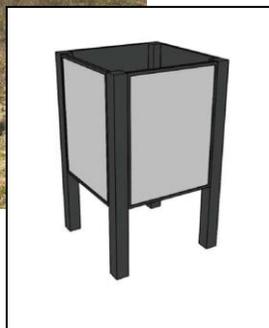
This proposed self-guiding trail would extend from the parking area at Butte La Rose down an existing service road, to the nearby shore of Lake Pelba, which would interpret the region's wildlife, past land use and the past industrial use of this area in shipping oil products. Remnants from this industrial history are still visible, and historic photos of this site in industrial operation can be obtained for use in interpretive panels or exhibit panels on kiosks. Detailed planning should take into account that during periods of high water, this trail is partially inundated.

Some of the trail scenes are provided on the following page.



Some of the many different views of interpretive sites and stories available for interpretation along the proposed self-guiding trail.

The trail would end at a viewing deck for a watchable wildlife experience. A sample viewing deck is shown below.



Summary of interpretive media:

- 3' x 4' trail head sign at Welcome Center.
- Access trail from Welcome Center to USACE Station with 5-6 self-guiding trail panels.
- Shelter kiosk options as shown.
- Trail head sign 3' x 4' from USACE Station to the bayou viewing deck.
- Two 2' x 3' interpretive panels on the viewing deck.
- Five interpretive panels on the trail from the USACE station to the viewing deck.
- Cell phone interpretation
- Interpretation of this sites past use and history in the proposed Indian Bayou Interpretive Guide Book.
- In the shelter – three 4 sided interpretive kiosk.



Interpretive Site Inventory ABFS – Indian Bayou

Site Index #: F-1

Site Name: Atchafalaya Welcome Center

Site Location: See the site location map. You can also find driving directions at:
<http://www.louisianatravel.com/atchafalaya-welcome-center>

Site Description:

This is a formal State of Louisiana Tourism Welcome Center located on the southern edge of the Indian Bayou area, with access off of interstate I-10.



The Welcome Center has a host of well-done exhibits interpreting the natural and cultural history and heritage of the region, and an audiovisual program that interprets the Atchafalaya Basin as a whole. The role of the USACE is not really addressed in these exhibits, thus the opportunity for an additional interpretive experience for visitors – the chance to see and immerse into a bit of the Indian Bayou environment.

Interpretive Significance:

The State Welcome Center receives tens of thousands of visitors each year coming off of I-10 for a rest and bathroom break. With a USACE access site so close to the welcome center, and the USACE not having a formal visitor contact station in the Indian Bayou region, this is a perfect location for the USACE and the welcome center to add more experiences for visitors. With the Indian Bayou region having currently about 50,000 visitors per year – mostly from hunters, this is an opportunity for the USACE to increase its visitor contacts by at least 50,000 new contacts, or more.



Story Development ABFS – Indian Bayou

Site Index #: F-1

Site Name: Atchafalaya Welcome Center

Interpretive theme or topics:

Current topics at the Welcome Center provide an introduction to the cultural and natural history of the Atchafalaya Basin. An AV program provides a visual overview of the Atchafalaya Basin in general.

There is no interpretation about the management of the Basin, or of the Indian Bayou area managed by the USACE for a diversity of active and passive recreation and education.

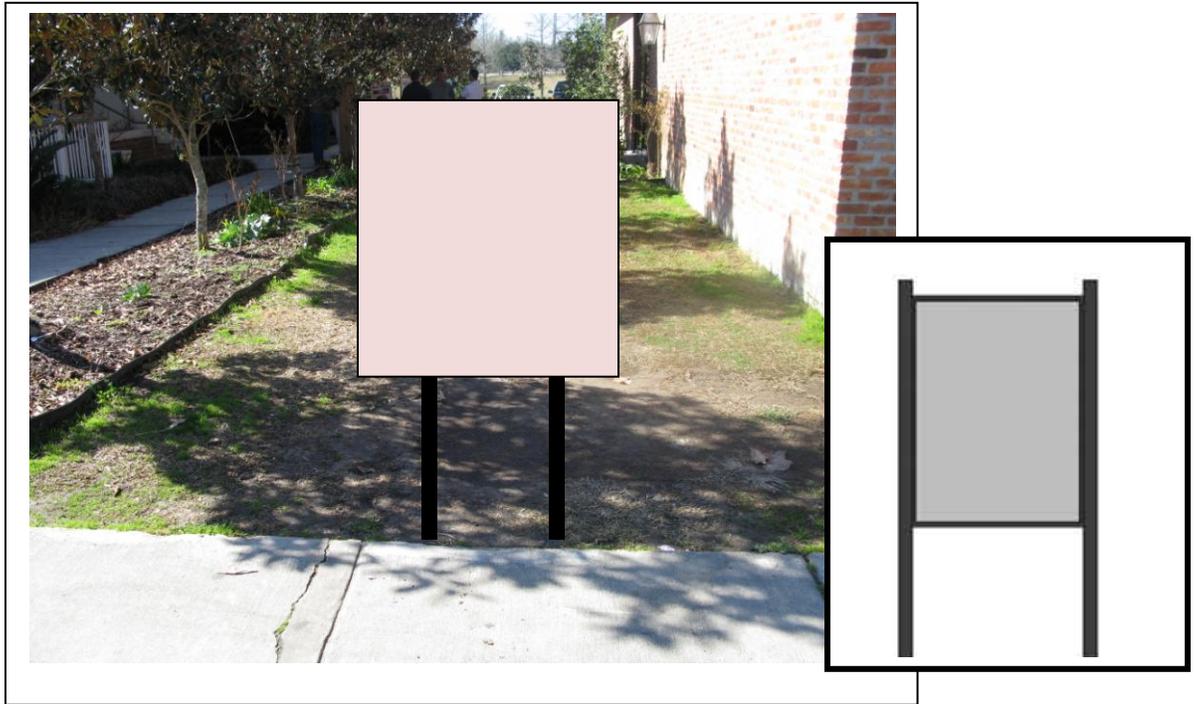
Site Objectives:

- Develop and install, as a partnership program, an interpretive panel on the USACE Indian Bayou recreation and interpretive opportunities, and inviting visitors to walk the trail (or drive) to the Butte La Rose parking area/new visitor contact station, to “experience” what the Atchafalaya Basin ecology is all about.

Interpretive Objectives:

During or upon completion of their visit, the majority of visitors will:

- Learn that the USACE has an active role in managing the natural and cultural resources of the Indian Bayou area.
- Be invited to walk the trail from the Welcome Center (or drive to the parking area) to experience and see first-hand more about natural history of the region.
- Learn of the diversity of recreation opportunities the USACE offers in the Indian Bayou area.
- Learn of other Indian Bayou areas they can visit/use (assuming the upgrading of the LA 105 road).

Interpretive Media or Services:

Recommended interpretive media would be a new outdoor interpretive panel at the above location by the walkway to the Welcome Center, and Restrooms.

The Welcome Center staff already promote visitation to the adjacent Indian Bayou property by informing visitors of walking trails and by distributing project brochures. These cooperative efforts have encouraged many visitors from around the world to visit the project. The installation of the recommended interpretive features would further this partnership and could promote the USACE Interpretation Station, and walking trail or driving option to the Station. They could also hold and distribute USACE self-guiding trail guides and the proposed Indian Bayou Interpretive Guide.



Interpretive Site Inventory ABFS – Indian Bayou

Site Index #: O-10

Site Name: I-10 Lake Henderson Boat Launch

Site Location: Located near the Welcome Center off of I-10. See the site index map.

Site Description: As seen in the photo below, this is a highly visited site with several different visual assets, besides being a major boat access site. It can be a prime visitor information contact point by upgrading the existing kiosk to a more visually attractive one.



This is a main boat access put-in into Lake Henderson for anglers and boaters. During the summer season and on weekends the site is heavily used and the parking area can be filled. There is an information kiosk at the site (right photo), but most likely it doesn't get a lot of attention.

Interpretive Significance:

As this is a major boat put-in site, and its location close to the Welcome Center, this site does get a lot of visitation. This would be an important location to upgrade the USACE interpretive presence here – marketing the new visitor station and trails, and better interpreting the USACE management programs, cell phone interpretation and related contact information.



Story Development ABFS – Indian Bayou

Site Index #: O-10

Site Name: I-10 Lake Henderson Boat Launch

Interpretive theme or topics:

Indian Bayou is part of the world's largest freshwater swamp – a natural history treasure to be conserved for wildlife and managed for outstanding recreational experiences.

Site Objectives:

- Relocate and re-develop the information kiosk to create a better hi-profile visual appearance to attract visitors to it.

Interpretive Objectives:

During or upon completion of their visit, the majority of visitors will:

- Understand that the USACE is actively involved in the resource management of the Indian Bayou area.
- Learn about the new USACE visitor contact station.
- Learn more about the wide range of USACE resource and recreation opportunities.
- Be motivated to explore other USACE access points.
- Learn about the Indian Bayou cell phone interpretation.

Interpretive Media or Services:

Interpretive services for this location could be to replace the current one sided kiosk pictured, with a new, higher profile 3 sided interpretive kiosk.





Interpretive Site Inventory ABFS – Indian Bayou

Site Index #: O-11

Site Name: West Dixie Parking Area and Boat Access

Site Location: See the location map.

Site Description: This is the main visitor access/contact point on the west side of the Indian Bayou area. During high water most of the area in the right photo would be underwater, so interpretive services would be limited to the main upper area parking area by the current kiosk.



Interpretive Significance:

As noted, this is the main visitor access point for boat launching on the west side of the Indian Bayou area. This site was very busy on the day the photos were taken, and from interviews, very busy through-out the fishing season.

This location would be the only west side interpretive contact point for updated kiosk interpretive panels.



Story Development ABFS – Indian Bayou

Site Index #: O-11

Site Name: West Dixie Parking Area and Boat Access

Interpretive theme or topics:

Indian Bayou is part of the world's largest freshwater swamp – a natural history treasure to be conserved for wildlife and managed for outstanding recreational experiences.

Additional interpretive topics could include:

- Promotion of East side interpretive/recreational services and resources.
- Interpretation of fishing regulations.
- Interpretation of boating safety (wear PFD's, etc.).
- Cell for interpretation (proposed) access.

Site Objectives: NA

Interpretive Objectives:

During or upon completion of their visit, the majority of visitors will:

- Gain an overview of the USACE resource management programs.
- Be encouraged to wear their PDF's and follow good water safety practices.
- Learn of the other recreation opportunities on the east side of Indian Bayou.
- Learn of the cell phone opportunities (proposed).
- Be surprised and pleased at the recreation management and services it provides visitors.

Interpretive Media or Services:

Recommended interpretive media would be an additional interpretive panel (could be inserted into the existing kiosk structure), that would address the above objectives. This would be a 3' x 3' panel. It could be independently mounted near the existing kiosk as well.



Interpretive Site Inventory ABFS – Bayou des Ourses

Site Index #: O-12

Site Name: South Farm Wildlife Viewing Area

Site Location: Sherburne Wildlife Management Area – Bayou des Ourses Area

Site Description: This is a large wildlife management area managed by different partners. The site has limited vehicle access, primarily for hunting seasons. Due to the challenges in “finding” the site, and limited way finding signage, this is not a site that would be recommended for general day visitors, or visitors contacted at the State Welcome Center.



Interpretive Significance:

This is an impressive wetland site, full of migratory birds during our visit. There is a well managed hunting program/seasons, including a handicap hunter access program.

There is no interpretation here at this time. The entrance kiosk shows the signs of significant gunshot holes, so recommending additional interpretive media at the entrance location is not recommended.



Story Development ABFS – Bayou des Ourses

Site Index #: O-12

Site Name: South Farm Wildlife Viewing Area

Interpretive theme or topics:

Interpretive topics for the wildlife viewing deck could include:

- What the different species are that use this site for waterfowl migration.
- How waterfowl populations change throughout the year.
- What are seasonal wildlife residents that visitors might see here.
- How the site is managed for seasonal hunting opportunities.

Site Objectives:

NA

Interpretive Objectives:

During or upon completion of their visit, the majority of visitors will:

- Learn what waterfowl species use this area throughout the year.
- Learn what resident wildlife species they might see during their visit.
- Learn how the site is managed, for both water levels, and for wildlife.
- Learn about other Indian Bayou recreational and interpretive opportunities.
- Use the cell phone program to learn more about this and other Indian Bayou interpretive programs and services.

Interpretive Media or Services:

There is an outstanding wildlife viewing deck located here. It is suggested that a panorama interpretive panel (3' x 6') be located along the top railing. The interpretation can illustrate the kinds of wildlife using this site throughout the year, as well as interpretation on migratory waterfowl, where they are migrating from and to, with flight maps.

Indian Bayou Area – Interpretive Services Recommendations

While the interpretive planning form sets focused on interpretive media/services opportunities for each unique site, it was also noted that there were some recommended interpretive media that could serve the total Indian Bayou resource area. Those recommended media include the following:

- Develop an **Indian Bayou Interpretive Guide Book**. This publication could provide an overview of the cultural and natural history of the area, from private land holdings through the ownership by the USACE and other partners. It could provide a overview of the main interpretive sites along the east side (LA 105), their natural and cultural history, current management programs and philosophies, an table of hunting seasons and regulations, a map of the main areas, and other interpretive information.
- Develop a **Cell Phone Interpretation Program**. The cell phone program can provide more information on resource management, watchable wildlife hot spots, any safety issues, historical interpretation, and other topics to be considered.
- Enhance the ABFS project web site to provide **podcast programs** on resource management programs and other related topics. These can include seasonal video and interpretation on waterfowl migration and forest reclamation programs and volunteer programs and opportunities. The **project web site should be re-designed** to make it more user-friendly and informational. If possible, a shorter, easier to remember URL address should be implemented as part of the re-design,
- Enhance the ABFS project web site to provide **downloadable interpretive trail guides** for the Alligator Trail and other future interpretive trail guides.
- Develop an **exhibit on the USACE** work in Indian Bayou for **inclusion within the State-operated Atchafalaya Welcome Center**. Also consider a brochure rack for related USACE sites, services, trails and related recreational opportunities.
- Develop and produce a 8-10 minute **project orientation video** for multiple uses in the project's interpretive services program. The video would cover the entire ABFS project and the USACE role in the project but would focus on the recreational and public access aspects of the Indian Bayou Area. The video would be deployed in several ways, including but not limited to posting on the ABFS project web site and showings at the Atchafalaya Welcome Center.

Atchafalaya Basin - Indian Bayou Area

Implementation and Phasing Matrix



Atchafalaya Basin - Indian Bayou Area

Implementation and Priorities Matrix

Index #	Media/Services	Fiscal Years	13	14	15	16	17	Preliminary Cost Estimate
O-1	Bias Parking Area One 4' x3' panel.							\$5,000.00
O-2	East Dixie Parking Area One 4' x3' panel							\$5,000.00
O-3	St. Landry Parking Area One 4' x3' panel.							\$5,000.00
O-4	Indian Bayou Parking Area New 3-4 sided interpretive kiosk. Interpretive panel 3'x4' on ranger station outside wall.							\$20,000.00 \$6,000.00
T-1	Alligator Trail (in Indian Bayou Area). Develop an updated interpretive trail plan for interp stops. Develop a new interpretive trail head panel. Develop a new self guiding trail brochure master copy. Develop a watchable wildlife viewing deck (size TBD). Develop a viewing deck interpretive panel 2' x 3'.							\$6,000.00 \$5,000.00 \$3,000.00 TBD \$3,000.00
O-5	Ox Bow Parking Area New 3'x4' orientation panel. Interpretive panel 2'x3' on proposed viewing deck. New viewing deck (to be planned).							\$5,000.00 \$3,000.00 TBD
O-6	Pel Bay Parking Area One or two panel interpretive kiosk.							\$15,000.00
O-7	Atchafalaya Parking Area Two or three sided interpretive kiosk.							\$20,000.00

Atchafalaya Basin - Indian Bayou Area

Implementation and Priorities Matrix

Index #	Media/Services	Fiscal Years	13	14	15	16	17	Preliminary Cost Estimate
O-8	St. Martin Parking Area Two or three sided interpretive kiosk.							\$20,000.00
O-9 / T-2	Butte La Rose Parking Area – Proposed Visitor Contact Station & Trails 3’x4’ trail head sign at the Welcome Center. Design and cut access trail from Welcome Center to Butte La Rose. Shelter Kiosk – to be designed, cost will vary. Trail head sign at Butte La Rose to viewing deck. New viewing deck at the end of Butt La Rose Trail on Bayou. Two 2’ x 3’ interpretive panels on the proposed viewing deck. Five 2’x3’ interpretive panels on the trail to viewing deck. Three 4 sided interpretive kiosks in the shelter (as illustrated).							\$15,000.00 TBD TBD \$6,000.00 TBD \$7,000.00 \$15,000.00 \$80,000.00 +
F-2	Atchafalaya Welcome Center One 3’x4’ interpretive panel (as shown).							\$7,000.00
O-10	I-10 Lake Henderson Boat Launch One 3-sided kiosk.							\$15,000.00
O-11	West Dixie Parking Area and Boat Access 3’x3’ interpretive panel insert into existing kiosk.							\$6,000.00
O-12	South Farm Wildlife Viewing Area One panorama interpretive panel, 3’ x 6’.							\$12,000.00

Atchafalaya Basin - Indian Bayou Area

Implementation and Priorities Matrix

Index #	Media/Services	Fiscal Years	13	14	15	16	17	Preliminary Cost Estimate
	Indian Bayou Area -Wide Interpretive Services/Media							
	Indian Bayou Interpretive Guide Book – photo/production ready.							\$10,000.00
	Interpretive Cell Phone Interpretation (10-15 extension programs) Cost does not include purchase of answering machine equipment or operations. Costs include scripting for each initial call, sound studio recording and mixing and professional voice for introduction and directions.							\$12,000.00
	Interpretive Pod Casts (audio only or audio/visual) Cost to be determined based on number, type and availability of existing video or having to shoot new video interviews, et.							TBD
	Interpretive Trail Guides (web ready).							\$5,000.00 each
	Develop interior exhibit addition on the USACE and Indian Bayou for inclusion in the Welcome Center.							\$400/sq.ft of floor space
	Professional production of an 8-10 minute project orientation video							\$75,000

APPENDIX K
PROJECT OFFICE JUSTIFICATION



APPENDIX K. NEED AND RATIONALE FOR AN ATCHAFALAYA BASIN FLOODWAY SYSTEM PROJECT OFFICE AND VISITOR INFORMATION CENTER

K-1. Federal Objective

As stated in ER 1105-2-100, water and related land resources project plans shall be formulated to alleviate problems and take advantage of opportunities in ways that contribute to achievement of a Federal objective. In addition, ecosystem restoration is one of the primary missions of the Corps of Engineers Civil Works program. As stated in Section 1 of this Master Plan update, the Atchafalaya Basin Floodway System has two major, mutually supporting goals: to preserve the environmental values of the Atchafalaya Basin, and to ensure that the Lower Atchafalaya Basin can pass a flood of 1.5 million cubic feet per second as required by the Mississippi River and Tributaries Project. The latter goal is paramount. The primary responsibility of the manager and staff of the ABFS is to maintain the Project's flood control function. In addition, the ABFS staff is responsible for stewardship of the project's natural resources and environmental values. Finally, the ABFS staff is mandated by the public access feature of the ABFS to facilitate and encourage the public to enjoy the public lands and waters of the ABFS, and to provide surveillance and control of public activities, in order to protect the project's resources and promote visitor safety. The effective and efficient achievement of these responsibilities is the Federal objective of the USACE management efforts at the ABFS.

K-1.1. Reconnaissance-Level Study

The 2000 MP stated that the responsibilities of management of the ABFS entail that future operations land should include the site necessary for the construction of the ABFS Project office (PO). This conclusion was reached without the procedure outlined in requisite guidance and regulations, including ER 1110-2-1150, Engineering and Design for Civil Works Projects (31 August 1999), which applies to planning and construction of new facilities. Therefore, in this MP update, discussion of the issue and recommendations for further action will follow the regulation by including a reconnaissance study for a Project office as this appendix.

A reconnaissance-level study is a relatively cursory exercise, the purpose of which is to determine if the Federal Government should invest in the solution to the problem. Further planning study beyond this reconnaissance-level study is required to determine if a new Project Office is technically possible, economically and politically feasible, and environmentally sound.

K-2. Management Problem

The principal problem facing accomplishment of the management responsibilities of the ABFS Project staff is that the Project office in which administrative and management duties are based is off-Project—that is, in a location remote from

Project lands and waters. The ABFS PO has been in rented facilities at 112 Speck Lane, Port Barre, LA, since 1998, and previous to that date was located elsewhere in Krotz Springs, LA. The current leased building's location and design were not specifically developed to accomplish the administration of the project's primary mission of flood control, nor was it designed to support an Natural Resources Management (NRM) program at the ABFS.

Inherent in an off-site Project Office is the fact that for much of the time, the ABFS staff is not physically present on the lands or waters of the Project. This situation of intermittent presence of ABFS staff on Project lands and waters has had numerous consequences, including:

- Reduced opportunity for surveillance of the Project (including observation of ATV use, hunting or fishing violations, special permit violations, environmental and flowage easement issues/violations, response to public nuisance complaints such as noise or trash dumping, contractor performance, etc.).
- Reduced visibility to and opportunity for interaction with the public on Project lands and waters, and inconvenience to the public seeking information and assistance.
- Increased response time for emergencies (accidents, etc.).
- Increased time spent in travel rather than other work, increased consumption of fuel and vehicle wear and tear, and the inconvenience of transporting boats and equipment for greater distances on public roads.
- Continuing expense of real estate lease.

K-3. Management Opportunities

The ABFS Project's public access feature and NRM program could be significantly improved by constructing an efficient administrative office facility and visitor information center building on-site on public access lands; a building that would improve the effectiveness of the ABFS staff and also better serve the visiting public. More than just an increase in operational convenience, the opportunities from development of an on-site Project Office would be the reverse of the problematic consequences of the current situation listed above:

- Increased opportunity for surveillance of the project.
- Increased interaction with the public and greater convenience for the public.
- Reduced response time for emergencies.

- Reduced lost time, fuel consumption, and wear and tear on vehicles.
- Eliminate lease costs for current office/warehouse.

K-4. Conditions if No Actions Are Taken

Negative conditions as given in the statement of the problem (above) will continue if no actions are taken to address them. There is a strong potential that the challenges presented by the problem of an off-site Project Office will increase in the future as public visitation and utilization of project resources increases over time.

- Data from Louisiana (as discussed in Section 2) is contradictory to national trends of declining rates of participation in hunting and fishing; data indicates record numbers of Louisiana license issues in recent years. Participation rates in other outdoor activities such as hiking, bicycling, and wildlife watching are consistent or growing nationally and regionally. Population growth alone in the south-central Louisiana region will likely contribute to greater demands being made on Project resources, with a need for adjustment and even expansion of management activities.
- The desirability of improved Project surveillance and reduced emergency response time are highly unlikely to diminish going forward, while the benefits of more frequent interaction with the public and greater public access to information and assistance would be lost without relocating the Project Office to the Project itself.
- Increased use of Project resources by the public without improvements in management methods could lead to various accelerated aspects of environmental degradation, such as inappropriate use of lands for recreational activities, vandalism, and increased frequency of accidents or even deaths from drowning or other causes.
- If no actions are taken, no long-term efficiencies in management economy would be achieved (by moving Project administration, storage, and maintenance facilities fully on-site) over current conditions. Project management costs could be increased by factors such as rising fuel costs, even without an increase in the level of management activities undertaken by Project staff.
- Continued lease costs for current office/warehouse.

K-5. Planning Objectives and Constraints

A primary reconnaissance-level planning objective for a Project Office is to define the effects desired to solve the identified problems, as well as also the

constraints that limit the solutions to the problems. Effects of constructing a PO on-site that would solve the management problems include:

- Proximity of the office location to environmentally sensitive Project lands and waters. An on-site Project Office would improve surveillance and time required for response to management issues.
- Proximity of the office location to principal public use areas. An on-site Project Office would improve surveillance of public use areas and improve response times to management issues, including emergencies.
- Visibility of Project staff and accessibility to the visiting public. An on-site Project Office would improve dissemination of information to the public, including public access area use restrictions and regulations, and safety messages.
- Elimination of lease costs for current office/warehouse.

Several constraints may limit achievement of the objectives listed above:

- Office location could affect wildlife habitat or land already in public access use for hunting, fishing, or other purposes.
- Office location could be affected by seasonal fluctuation of water levels in the Floodway (facility or access could be subject to flooding).
- Safety of road and traffic conditions accessing the Office site.
- Location of utilities.
- Potential for expansion of the Office complex, as needed in the future.
- Design and construction costs.

K-6. Alternative Plans

A number of alternative locations for an on-site project office have been identified and evaluated.

K-6.1. General Considerations

Guidance and regulations of the USACE concerning office and administrative facilities and warehouse/equipment storage facilities for Civil Works projects are supplemented by the Unified Facilities Criteria (UFC) of the Department of Defense, which should be followed for guidance in planning for accessibility, sustainability, physical security and antiterrorism, environmental considerations,

building space planning, and other aspects of facility planning. Relevant documents at planning level include:

ER 1105-2-100 (22 April 2000), *Planning Guidance Notebook*
UFC 2-000-02AN (1 March 2005), *Installation Master Planning*
UFC 3-210-01A (16 January 2004), *Area Planning, Site Planning, and Design*
UFC 3-210-06A (16 January 2004), *Site Planning and Design*
UFC 4-610-01 (6 May 2008), *Administration Facilities*

For an on-site Project Office, layout and design of a paved access road, public parking areas, ABFS personnel-only access areas, and storage facilities are required. A two-lane all-season hard surface access road is required from a road maintained by a parish, the State, or the Federal government. Three parking areas would be required; one inside a fenced enclosure for parking the park ranger vehicles and other Government vehicles for official visitors, another parking area for public visitors, and one in near proximity to the Office for the physically challenged. Public parking areas should be paved and striped, and have adequate room to park 20 vehicles, including three vehicles with boat trailers, three school buses for school group visits, and two spaces for the physically challenged. American Disability Act compliance is mandated for the public portions of the building and parking areas.

A large multipurpose/conference room should be provided for visits by the general public, official ABFS visitors, and other visitors. Besides being available as a conference room for project personnel, the room would serve as the ABFS's visitor information center (discussed below). The room should be equipped with a drop-down projection screen with a built in projector tied to a small audio/visual (A/V) closet. The A/V closet with lockable pocket doors would be open yet out of the way. VHS and DVD equipment as well as a computer should be included to allow for presentation of PowerPoint and other computer-based presentations. The conference room should also be provided with a separate storage room for folding tables and chairs.

A separate garage/storage building and yard is needed for the boats, ATVs, and materials/equipment required by the park ranger staff. Existing or standard designs can be used, although there must be a appearance consistent with the office building so that it looks like a complex rather than a group of mismatched buildings. The architectural treatment should ensure that the style and materials are appropriate and complementary to the landscape and provide a measure of continuity with the office building and garage/shops complex. An estimate of total facility acreage required is in a range of 5 to 10 acres.

The purpose of a new project office is not only to improve the effectiveness of the ABFS staff, but also to better serve the visiting public. In that regard, the Port Barre Office is seriously deficient and a new on-site project office should be planned to include a visitor information facility.

K-6.2. Visitor Information Center

The New Orleans District of the U.S. Army Corps of Engineers is responsible for providing information to the visiting public at every project it operates. As stated in ER 1130-2-550, it is the policy of the USACE to plan, develop, manage, and operate Visitor Centers at water resource development projects in accordance with basic criteria set for three types of facilities:

- Type A Regional Visitor Center – intended to serve as a regional facility, which provides information encompassing a large geographic area such as a river basin, state, or other designated area of concern. Specific legislation is the only way a new Type A Visitor Center can be built.
- Type B Project Visitor Center – similar to the Regional Visitor Center, except that its scope is local in nature and information is targeted towards interpretation of a particular project. Construction of Type B Project Visitor Centers are limited to those projects where the Corps is committed to construction through legislation, memorandum of understanding, or cost-sharing agreements.
- Type C Visitor Information Facility – limited to the placement of information and exhibits in existing buildings, or in new or rehabilitated administration buildings for which construction has been budgeted. Justification for these buildings shall be based on administrative need.

A Type A regional visitor center to be constructed in the Morgan City Area was authorized by the Water Resources Development Act of 2007. This Morgan City visitor center is not under consideration in this study. The USACE does not have a commitment to construction of a Type B Visitor Center through legislation, memorandum of understanding, or cost-sharing agreements, and a Type B center is also not under consideration in this study. In this Master Plan update reconnaissance study, only a Type C Visitor Information Center is recommended as a necessary component of the on-site project office. Justification for a proposed new on-site ABFS Project Office, containing a Type C Visitor Information Center as an ancillary feature, is based on administrative need as identified in this study.

The park ranger staff would be responsible for administration of the ABFS Visitor Information Center, which would include appropriate exhibits on topics such as ABFS purpose and history, natural resources, and visitor safety. The visitor center would also dispense information, publications and maps to assist visitors in understanding, locating, and safely using ABFS facilities and natural resources.

K-6.3. Potential Office Location

Due to the large total acreage and extensive nature of the parcels making up the ABFS, a number of potential office sites can be identified that satisfy, to varying degrees, the objectives and constraints identified above. A central issue in selecting an on-site office location is that the public access areas managed by the USACE are bifurcated, with the larger portion in the Indian Bayou Area on the western side of the Atchafalaya River and the smaller portion at South Farm in the Bayou Des Ourses Area, on the East side of the Atchafalaya River. The Atchafalaya Basin is compartmentalized by the floodway and river levees, preventing cross-channel transportation by boat, and has limited road access to areas on the flood side of the levees. It is inevitable that placing management resources in any single office location will result in the necessity of lengthy transportation times for personnel and equipment from the office to some other areas of the ABFS. However, with the current off-site office location, transportation to *any* area within the ABFS is time-consuming, wasteful of resources, and inconvenient to the public using the ABFS. A major goal of developing an on-site project office is to reduce as much as possible the inevitable inefficiency and inconvenience resulting from the scattered and expansive nature of ABFS lands and waters managed by the USACE.

A matrix of location alternative characteristics follows the narrative discussion below and is presented in Table L-1.

K-6.3.1. Bayou Des Ourses Area

The Bayou Des Ourses Area consists of a number of non-contiguous fee-title parcels. The Area is jointly managed by the Louisiana Department of Wildlife and Fisheries, as a part of the Sherburne Complex, and by the USACE. South Farm is a very popular public use area, particularly for waterfowl hunting and wildlife watching, and has good road access. It is in close proximity to the Ramah exit from I-10. The parking area and self-clearing permit station of the South Farm Complex are approximately one mile from the Ramah exit and are easily reached by the East Atchafalaya Basin Levee Road. However, the East Atchafalaya Basin Levee Road is not paved with a hard surface; its graveled surface can pose a deterrent to vehicles such as some passenger cars or school buses. Furthermore, the South Farm Complex is isolated on the far eastern side of the ABFS and remote from other heavily used public use areas in the ABFS located in the Indian Bayou Area. Also, the lack of water access to the interior of the Indian Bayou Area from any location in Bayou Des Ourses would present a management negative.

K-6.3.2. Shatters Bayou Area

The Shatters Bayou Area is only accessible by boat and is managed by the Louisiana Department of Wildlife and Fisheries as part of the Attakapas Wildlife Management Area.

K-6.3.3. Indian Bayou Area

The Indian Bayou Area has the largest contiguous area of USACE fee-title public access lands in the ABFS. Due to its huge extent and great diversity of public use opportunities, it is the most heavily used area of the ABFS managed by the USACE. Staff recommendations for development of an on-site Project Office have focused on the Indian Bayou Area as a potential site location.

A number of user groups most frequently use the Indian Bayou Area and the geographic distribution of their activities can be characterized in a general way. Use of the Area by large- and small-game hunters, recreational ATV riders, hikers, and wildlife watchers generally is concentrated on the eastern side of the IBA, where land elevations are higher and where trail systems have been developed. The central, western, and southern portions of the IBA are at lower elevations and consist of a number of waterways, more frequently flooded swamps, and lakes. User groups in this area tend to be water-oriented, such as fishers and canoeists, as well as waterfowl hunters. Of course, these usage patterns are not absolute but do tend to result in differing management issue priorities in different areas within the IBA.

A number of potential office locations within the IBA could be identified. For this study, the number has been limited to those that have been identified by Project Staff as potentially desirable locations. All locations are on the east side of the IBA because of proximity to the state's Atchafalaya Welcome Center on I-10 and the land access to developed features of the public use areas (such as trails) is most available, and consequently public use is heaviest, on that side of the IBA. The narrative discussion below lists potential locations proceeding from south to north.

Butte La Rose Parking Area. The Butte La Rose Parking Area is located in St. Martin Parish approximately one-half mile north of the Butte La Rose Exit (Exit 121) of I-10, which is also the location of the state's Atchafalaya Welcome Center. This site is proposed as the location of a Visitor Contact Station in the ABFS Interpretive Plan presented in Appendix Y. This site has excellent access convenience for the public. It would also be easily accessible by utilities. This parking area is proposed as a site for interpretive development as presented in the Interpretive Plan and potential development of an interpretive trail following the Happytown South pipeline alignment to the bank of Bay Andy. This could also be the location of a project boat launch allowing access to Henderson Lake (via Bay Andy and Lake Pelba) which would make project surveillance by boat possible without ABFS staff using public boat launches. However, the Butte La Rose Parking Area is some distance from the most heavily used areas of the IBA, which lie to the north in St. Landry Parish. Therefore, transportation times for ABFS personnel and equipment to and from the most heavily used areas would be higher than if the Office were located further north.

Oxbow Area. The Oxbow Area is located in St. Landry Parish on the eastern side of the West Atchafalaya Levee Road, which is on the flood side of the Atchafalaya River Levee, north of Tall Timbers Road. The Oxbow (Ox Bow) Parking Area is located southwest of the Oxbow lake. The Oxbow lake is viewed from an elevated area and has relatively high aesthetic values. It is a proposed site for interpretive media services in the Interpretive Plan in Appendix Y. Formerly the site of private development, invasive vegetative species lower the quality of natural conditions at the site and make appropriate vegetative management desirable. The West Atchafalaya Levee Road and Parish Road 3-95 that parallels it pass through three parcels of private property between the Butte La Rose exit from I-10 and the Oxbow Area. The West Atchafalaya Basin Levee Road is not paved with a hard surface; its graveled surface can pose a deterrent to vehicles such as some passenger cars or school buses.

Indian Bayou Parking Area. The Indian Bayou Parking Area is located in St. Landry Parish on the western side of Parish Road 3-95 where the channel of Indian Bayou meets the West Atchafalaya Levee. Due to its central location in relation to the most heavily used areas of the IBA, this parking area is currently the site of a seasonal Ranger Station used for mandatory deer checks during hunting season. It is at the trail head for several foot and ATV trails, and there is also a vault restroom facility. Parish Road 3-95 is not paved with a hard surface; its graveled surface can pose a deterrent to vehicles such as some passenger cars or school buses.

Limestone Pile Area. The Limestone Pile Area is located in St. Landry Parish on the eastern side of the West Atchafalaya Levee Road, that is, on the flood side of the Atchafalaya River Levee. Not currently intended as a public parking area, this area is used for stockpiling of crushed rock for road and trail surfacing, and for that purpose has a barge landing area on the Atchafalaya River. The area has an elevated view of the Atchafalaya River. It is fairly centrally located in relation to the areas most heavily used by the public, but is connected with only short foot trails. The West Atchafalaya Levee Road is not paved with a hard surface; its graveled surface can pose a deterrent to vehicles such as some passenger cars or school buses. An advantage of this location for Project Office development is that construction of buildings and parking areas would have less of an environmental impact than elsewhere, since an extensive area is already covered in crushed rock instead of in woodland. However, development of the Project Office in this location would require that another appropriate area, likely on the Atchafalaya River to allow unloading of barges, be put in use for crushed rock stockpiling. Another such location may be difficult to identify.

East Dixie Parking Area. The East Dixie parking area is located in St. Landry Parish on the western side of Parish Road 3-95 where the Dixie Pipeline meets the West Atchafalaya Levee. It is at the trailhead of heavily utilized ATV trails, including the physically challenged ATV that provides access to the Physically-Challenged-Only Hunting Area. A vault restroom facility is currently located at

this parking area. The East Dixie Parking Area has the most direct connection via the Physically Challenged ATV trail to the Dixie Pipeline Canal, which is proposed as a location for a project boat launch to allow access to the northern portion of Henderson via Bayou Fusilier, as well as to Bayou Fordoche and Lake Fordoche. Parish Road 3-95 is not paved with a hard surface; its graveled surface can pose a deterrent to vehicles such as some passenger cars or school buses.

Table K-1. Matrix of location characteristics.

<i>Potential Project Office Location</i>		<i>Butte La Rose Parking Area</i>	<i>Oxbow Area</i>	<i>Indian Bayou Parking Area</i>	<i>Limestone Pile Area</i>	<i>East Dixie Parking Area</i>
Objectives High = 3 Med = 2 Low = 1	Proximity to principal use areas	Low	High	High	Med	Med
	Accessibility for public	Med	Low	Low	Low	Low
	Interpretive potential	Med	High	High	Low	Low
Constraints High = 1 Med = 2 Low = 3	Impacts on wildlife habitat	Low	Med	Med	Med	Med
	Impacts on land already in public use	Low	Med	Med	Med	Med
	Road conditions accessing site	High	High	High	High	High
	ROE issues	Low	High	High	High	High
	Location of Utilities	Low	Med	High	High	High
	Potential for expansion	Low	Low	Low	Low	Low
High = 3 Med = 2 Low = 1	<i>Relative aesthetic quality</i>	Med	High	Med	High	Med
	Total	23	22	19	17	16

K-4. Evaluation of Alternatives

An evaluation of significant effects of alternatives is required in a planning study. However, it is beyond the scope of this reconnaissance study to fully evaluate the effects of Project Office development in any or all of the potential locations discussed above. As part of the further planning process, an appropriate level of environmental review must be conducted. Of particular concern is how development of a Project Office would affect land area already in NRM or public access use for other purposes. An estimate of the surface area required for development of a Project Office/Visitor Information Center/warehouse/garage/storage complex is approximately 5 to 10 acres.

K-5. Comparison of Alternatives

A comparison of alternatives at this stage of reconnaissance study planning first entails a qualitative comparison of the no-action alternative with an alternative in which an on-site Project Office is built, fundamentally a reiteration of the discussions in L-3 and L-4 above. Second, the action alternative (development of an on-site PO) presents a more complex issue since it is necessary to develop a comparison of the effectiveness of an on-site PO developed to different scales and with different features but also constructed in each of the locations specified in L-6.4 above.

A no-action alternative consisting of maintenance of the ABFS Project Office in its current facility in Port Barre fails to capitalize on any of the project opportunities enumerated in L-3 and leaves management of the project (particularly its NRM management programs) with the constraints identified in L-3. Public users would remain inconvenienced and it is likely that at best only marginal operational efficiencies could be realized through future changes in management practices, given that the PO location would not change.

The action alternative of developing a Project Office on-site presents a greater number of potential benefits. The conservative approach when considering the features of a potential PO is to utilize the reasonably minimal estimates of requirements and phased development recommendations and to the number of reasonably potential on-site PO locations presented in L-6.4 and table L-1.

K-6. Alternative Selection

The weighting system of the matrix presented in Table L-1 produces two most favorable Office locations, namely, the Butte La Rose parking area and the Oxbow area. Given the qualitative nature of the matrix criteria and weighting, the superior favorability of the Butte La Rose parking area is marginal. A factor is this location's accessibility to the public and the consistently low impact of development constraints at the site. Since the Butte La Rose parking area site is closest to the I-10, the principal east-west thoroughfare of south Louisiana and the entire Gulf Coast, it is convenient to the public to a far greater degree than any of the other potential sites. The major drawback of the Butte La Rose parking area as a Project Office location is that of all of the sites considered in Table L-1, it is the greatest distance from the portions of the IBA most heavily used by the public. However, it is the closest to the South Farm Complex (and considerably closer to those heavy-use areas than is the current Office location in Port Barre). Although the Butte La Rose parking area does not have hard-surface paved road access (on Bayou Road, LA 3177), the four other potential sites on LA 105/Parish Rd 3-95 all have more substantial access issues for the general public, due to the condition of the roadway and their greater distance from US 190, I-10, or the paved portion of LA 105/Parish Rd 3-95. The availability of a vehicle/equipment storage facility at the Wheelchair-Bound

Hunting Area alleviates some of the disadvantage of the Butte La Rose location being a greater distance from the areas of the IBA most heavily used by the public, since some management activities can be carried out from that facility. The proximity of the I-10 does have a disadvantage in that noise and other factors limit the potential for interpretive development, such as trails radiating from an Office/Visitor Information Center located at the Butte La Rose parking area.

The Oxbow area has an advantage in its aesthetic qualities and interpretive potential. Although it is at the trailhead of only a single foot trail, the Oxbow is fairly centrally located among the various foot and ATV trails developed on the eastern side of the IBA. Development of the Oxbow area as the site of the Project Office and Visitor Information Center would require a solution to the LA 105/Parish Rd 3-95 paving issue.

Of the remaining three potential Project Office sites considered in Table L-1, the Indian Bayou parking area is most centrally located, as recognized by the placement of a seasonal Ranger station there. It is at a nexus of radiating trails. Selection of the Indian Bayou parking area, Limestone Pile area, or east Dixie parking area for the site of a PO would require a solution to the road access and utility constraints.

APPENDIX L
BAYOU FORDOCHE JUSTIFICATION



LOUISIANA NATURAL AREAS REGISTRY

REGISTRATION AGREEMENT

THE NATURE CONSERVANCY OF LOUISIANA
AND

THE LOUISIANA DEPARTMENT OF WILDLIFE AND FISHERIES

It is hereby agreed that a tract of land consisting of approximately 3,954 acres in Township 7S, Range 6E, Sections 24 and portions of 25, and Township 7S, Range 7E, Sections 30, 32, and portions of 19, 29, 31 (all but SW 2.90 acres) and 33, and further described on the attached map which is part of this agreement, and located in St. Landry Parish, state of Louisiana, shall be placed on the Louisiana Registry of Natural Areas pursuant to Act 324 of 1987.

BAYOU FORDOCHE NATURAL AREA is within the Indian Bayou tract which is part of the Atchafalaya River Basin, the largest river basin swamp in North America. The Atchafalaya River Basin consists of a rich diversity of natural communities that provide habitat for threatened and rare species such as the Louisiana black bear, bald eagle, roseate spoonbill, and pallid sturgeon. The Atchafalaya Basin supports the only known swallow-tailed kite population in the Mississippi River alluvial Plain with nesting occurrences within the boundaries of the Bayou Fordoche Natural Area. Several waterbird nesting colonies are also present.

The natural area is part of the Indian Bayou tract and is bisected by Bayou Fordoche and includes the associated braided streams and ephemeral channels that drain the area. Bayou Fordoche, the West Fork of Bayou Fordoche, and the West Branch of Bayou Fordoche come together in the southern part of the area to form Lake Fordoche, which then becomes Little Fordoche bayou, a tributary of Lake Henderson. The forested wetlands of the Bayou Fordoche Natural Area are dominated by bald cypress, black willow, overcup oak, green ash, nuttall oak, cottonwood, and sycamore. Topographically higher areas support red maple, willow oak, hackberry, and dwarf palmetto.

The owner, the United States Army Corps of Engineers, New Orleans District, recognizes the importance of said natural area and intends to preserve its natural values according to those objectives set forth in the attached management agreement.

It is understood that this agreement involves no change of title or loss of ownership rights, and is completely non-regulatory in nature. The owner agrees not to alter the area outlined on the attached maps in a manner significantly detrimental to its ecology and to give notice to the Louisiana Department of Wildlife and Fisheries' Natural Heritage Program or the Nature Conservancy of a change of address or of intent to transfer ownership, and to give notice of any threats to the area such as pollution, right-of-ways, drainage, etc.

The BAYOU FORDOCHE NATURAL AREA is hereby established for an indefinite period until terminated in writing by either party to the other upon thirty (30) days notice.

Asserted to this 26 day of September 1997.

By: William L. Coman Date: 29 Aug 97

Owner
Commander, New Orleans
District, U.S. Army Corps
of Engineers
Secretary, Department
of Wildlife & Fisheries

By: [Signature] Date: 9.22.97

By: Lisa Creasman Date: 9.26.97

Director
The Nature Conservancy

GENERAL MANAGEMENT GUIDELINES FOR BAYOU FORDOCHE NATURAL AREA
U.S. Army Corps of Engineers, New Orleans District

1. In general, no timber removal, including salvage and sanitation cuts, will be allowed.
2. Disease and insect outbreaks within the natural area may be controlled using agreed upon methods after consultation between the Corps of Engineers (COE), the Louisiana Nature Conservancy (TNC), and the Louisiana Department of Wildlife and Fisheries-Louisiana Natural Heritage Program (LDWF-LNHP). Every feasible effort should be made to ensure that disease and insect outbreaks external to a natural area be prevented from entering the natural area.
3. No other mechanical disturbances that may disrupt the vegetative/soil surface layer including disking, plowing, food plots, etc., will be allowed in the natural area. Off-road vehicles (ORV'S) and all-terrain vehicles (ATV'S) may be allowed on designated routes after consultation between the COE, TNC, and LDWF-LNHP. ATV'S and ORV'S may be used for emergency purposes without consultation. Limited hiking trails are permitted. Every attempt should be made to make trails blend with the environment.
4. When natural area boundaries are defined by streams, a 100-foot wide belt of forest (or project boundary) on the side of the stream opposite the natural area, should be considered part of the natural area and managed as such.
5. Nothing herein shall be applied as to nullify rights vested in holders of mineral interests on fee and easement lands. Persons holding mineral rights on lands acquired by the government in fee or easement, shall, to the greatest extent practicable, conduct all exploration, development and production operations in such a manner as to prevent damage, erosion, pollution, or contamination to the lands, waters, facilities, and vegetation of the area. Such operations must also be conducted to minimize interference with public access to the fee lands and disturbance to its wildlife and natural features. Physical occupancy of the area must be kept to a minimum space necessary for conducting efficient mineral operations. Persons conducting mineral operations on fee land must comply with all applicable federal and state laws and regulations for protection of wildlife and the administration of the area. Structures and equipment must be removed from the area when they are no longer required. Upon the cessation of operations, the area shall be restored as nearly as possible to its condition prior to the beginning of operations, using native species and after consultation with TNC and LDWF-LNHP.
6. Transmission lines (power lines, pipelines, etc.) are to be strongly discouraged in a natural area.

7. No livestock grazing is allowed.
8. If beaver populations reach a level considered damaging to the natural area, trapping and hunting should be conducted after consultation with TNC and LDWF-LNHP.
9. Removal and control of all exotic plant and animal species (e.g. Japanese Honeysuckle, Chinese Tallow Trees, wild hogs) is encouraged.
10. Hunting is allowed within natural areas. Hunting dogs and temporary blinds will be allowed in accordance with state regulations as they pertain to wildlife management areas.
11. Crawfishing and fishing are allowed within natural areas in accordance with state regulations.
12. Every effort will be made to maintain the natural, hydrologic features of local waterways. Bayou Fordoche is a major drainage for the Bayou Courtableau Outlet Structure. The COE reserves the right to perform minor clearing and snagging operations on this waterway to maintain the integrity of the Atchafalaya Basin Floodway System and its surrounding projects and also to allow safe passage of boats for public access. Such operations might include, but would not be limited to, removal of log jams, removal of leaning trees deemed a hazard to safe passage on the waterway, and the cutting of fallen trees blocking boat access. Operations will be conducted in accordance with Stream Obstruction Removal Guidelines (1983) prepared by the Stream Renovation Guidelines Committee of The Wildlife Society and the American Fisheries Society. After consultation between the COE, LDWF-LNHP, and TNC, some activities may be conducted along the waterways within the natural area in order to fulfill the COE mission throughout the floodway. Additionally, because this area is a floodway, the water levels will be regulated by the COE with the overall goal of providing as natural a hydrologic regime as possible while providing both flood relief and navigation.
13. Research proposals of appropriate projects on the natural area will be encouraged by universities, non-government organizations, and other state and Federal agencies. Approval of research projects would be determined by COE, following consultation with LDWF-LNHP and TNC.
14. As data become available, additional management guidelines or changes to the guidelines may be recommended.
15. These guidelines will be jointly reviewed by COE, LDWF-LNHP, and TNC at least once every two years.

**APPENDIX M
EASEMENT ESTATE**



27 May 1993

FLOWAGE
DEVELOPMENTAL CONTROL
AND
ENVIRONMENTAL PROTECTION EASEMENT

In connection with the operation and maintenance of the existing Atchafalaya Basin Floodway System, a perpetual and assignable right and easement in, on, over and across the land described in Schedule A to overflow by floodwaters of the Mississippi River, the Atchafalaya River or their tributaries, or any other floodwaters, at any time and for any length of time, and to any elevation; and prohibiting:

1) The conversion or development of said land from the existing uses (as described in Schedule B and as reflected on a map which is filed in the records of the U.S. Army Engineer District, New Orleans) to other uses;

2) The construction or placement of new permanently habitable structures (existing permanently habitable structure(s) are described in Schedule B and are reflected on a map which is filed in the records of the U.S. Army Engineer District, New Orleans);

3) The construction or placement of all other new structures, including camps (existing camp(s)/structure(s) are described in Schedule B and are reflected on a map which is filed in the records of the U.S. Army Engineer District, New Orleans), situated or located on said land without the prior written approval of the District Engineer, U.S. Army Engineer District, New Orleans, or his duly authorized representative, but specifically excluding any structures used in the exploration, development, and/or production of oil, gas, and all other minerals; permitting, however, the owner to rebuild a destroyed structure under the existing permit.

4) Any timber operation which involves:

(a) Removal of any bald cypress greater than 42 inches in diameter at 10 feet above the ground. (The timber included in this prohibition will not be included in basal area calculations on other cypress restrictions below).

(b) Removal of oak, ash, and sweet pecan less than 20 inches in diameter at 12 inches above the ground, and water tupelo and bald cypress less than 24 inches in diameter at 2 feet above the ground, unless 40 square feet of basal area, per acre, in any combination of these species, is maintained.

FLOWAGE
DEVELOPMENTAL CONTROL
AND
ENVIRONMENTAL PROTECTION EASEMENT

In connection with the operation and maintenance of the existing Atchafalaya Basin Floodway System, a perpetual and assignable right and easement in, on, over and across the land described in Schedule A to overflow by floodwaters of the Mississippi River, the Atchafalaya River or their tributaries, or any other floodwaters, at any time and for any length of time, and to any elevation; and prohibiting:

1) The conversion or development of said land from the existing uses (as described in Schedule B and as reflected on a map which is filed in the records of the U.S. Army Engineer District, New Orleans) to other uses;

2) The construction or placement of new permanently habitable structures (existing permanently habitable structure(s) are described in Schedule B and are reflected on a map which is filed in the records of the U.S. Army Engineer District, New Orleans);

3) The construction or placement of all other new structures, including camps (existing camps(s)/structure(s) are described in Schedule B and are reflected on a map which is filed in the records of the U.S. Army Engineer District, New Orleans), situated or located on said land without the prior written approval of the District Engineer, U.S. Army Engineer District, New Orleans, or his duly authorized representative, but specifically excluding any structures used in the exploration, development, and/or production of oil, gas, and all other minerals; permitting, however, the owner to rebuild a destroyed structure under the existing permit.

4) Any timber operation which involves:

(a) Removal of any bald cypress greater than 42 inches in diameter at 10 feet above the ground. (The timber included in this prohibition will not be included in basal area calculations on other cypress restrictions below).

(b) Removal of oak, ash, and sweet pecan less than 20 inches in diameter at 12 inches above the ground, and water tupelo and bald cypress less than 24 inches in diameter at 2 feet above the ground, unless 40 square feet of basal area, per acre, in any combination of these species, is maintained. (These prohibitions will not apply to the areas referenced in paragraph c. below).