

# **LOUISIANA DEPARTMENT OF WILDLIFE & FISHERIES**



**OFFICE OF FISHERIES  
INLAND FISHERIES SECTION**

**PART VI -A**

**WATERBODY MANAGEMENT PLAN SERIES**

**AMITE RIVER**

**HISTORY & MANAGEMENT ISSUES**

# **CHRONOLOGY**

April 2014 - Prepared by  
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# HISTORY

## GENERAL INFORMATION

### Description

Amite River is a tributary of Lake Maurepas and is the largest tributary in the Lake Pontchartrain Basin. Amite River drains portions of southwest Mississippi and southeast Louisiana. The Amite River has numerous tributaries consisting mostly of pipeline canals and bayous.

### River stage

Amite River at French Settlement.

(<http://water.weather.gov/ahps2/hydrograph.php?wfo=lix&gage=fsll1&view=1,1,1,1,1,1,1,1,1&toggles=10,7,8,2,9,15,6&type=0> ).

Flood stage at French Settlement is at 4 feet (MSL).

### Parishes located

East Baton Rouge, East Feliciana, St. Helena, Ascension and Livingston Parishes.

([APPENDIX I](#) – MAP AND PARISHES).

### Border waters

Comite River

Lake Maurepas

Blind River

Thompson Creek

Bayou Sara

Natalbany

## ACCESS

### Boat docks

Table 1. Locations of boat ramps for Amite River, LA.

<b>RAMP NAME</b>	<b>COORDINATES*</b>	
Big John's	30.343870	-90.887852
Bay Side	30.340100	-90.849691
Public Landing	30.332258	-90.852893
Hilltop	30.255906	-90.782181
Canal Bank	30.250834	-90.773823
Chinquapin	30.262579	-90.710730
Carthage Bluff	30.307679	-90.587407

\* Coordinates listed in NAD 83, decimal degrees.

([APPENDIX II](#) – MAP AND LANDING)

## **PHYSICAL DESCRIPTION**

### Shoreline length

226 miles from Mississippi border to Lake Maurepas (both shorelines of 113 river miles)

### Timber type

Mixed pine and bottomland hardwood is the dominant forest type in the watershed with some freshwater swamp in the immediate vicinity of the river and its tributaries.

### Average depth

12 feet

### Water fluctuation

Amite River at French Settlement had a historic high crest of 7.4 feet and a historic low of 0.21 feet. High water periods are typical for late spring/early summer. High water is also influenced by local tropical storm events. Extremely low water (less than 1.0 feet at Amite River at French Settlement) is rare and only occurs during extreme drought.

### Shoreline development

Less than 5% of the shoreline is developed by landowners. Most developments are camps and houses and are located along the lower third of the river.

## **EVENTS / PROBLEMS**

- Numerous channel modifications in the watershed have been made as a means to decrease flooding in East Baton Rouge and Livingston parishes. The construction for flood control has been ongoing since the 1950's and includes construction of the Diversion Canal that connects the Amite and Blind rivers.
- Channel modification and the creation of spoil banks have disconnected much of the surrounding swamp from the river system. Resulting impairments include:
  - alterations in the natural hydrology
  - wetland degradation and loss
  - tree mortality
  - saltwater intrusion
  - swamp impoundment
  - reduced swamp access to aquatic life
  - swamp subsidence.
- Sand and gravel mining in the river has led to vegetation loss, bank instability and increased turbidity and sedimentation. Extensively mined reaches of the river have geomorphically changed from a meandering to a braided stream that is wide and shallow and void of riffle/pool complexes.
- River length has decreased by more than six miles due to straightening and widening of the stream.

# MANAGEMENT ISSUES

## AQUATIC VEGETATION

### Nuisance species

Common salvinia and water hyacinth have been the main cause of complaints over the past few years. Common salvinia is scattered throughout the basin and is constantly being restocked by adjacent swamps and bayous. Within the river system, the desire to own/sell waterfront property has led to the construction of numerous man-made canals over the past 4 decades. These canals are typically 50 to 200 feet wide, dead-end offshoots of the main river channel. The canals are lined with houses, camps, boat slips, docks, and an occasional boat ramp. The canal systems are rarely designed so that river water can flow through unimpeded (i.e. horseshoe in shape, etc.). Consequently, these dead-end canals have no inherent “flushing” mechanism to discharge of floating vegetation. Invariably, some form of aquatic vegetation makes its way into these canals each year, remains there due to the stagnant water conditions, and thrives. When the suspect vegetation in these canals has reached critical mass, the home/camp owners complain.

Estimates of vegetation coverage (as of September 30, 2013) are provided below:

#### Problematic Species -

Common Salvinia (*Salvinia minima*) – 100 acres

Water Hyacinth (*Eichhornia crassipes*) – 75 acres

Duckweed (*Lemna spp.*) – 15 acres

Duck Lettuce (*Ottelia alismoides*) – 50 acres

Crested Floating Heart (*Nymphoides cristata*) – 6 acres

#### Beneficial Species -

Yellow Water Lily (*Nymphaea mexicana*) – 100 acres

Coontail (*Ceratophyllum demersum*) – 100 acres

### Control Measures

#### *Biological*

NONE

#### *Chemical*

Common salvinia was controlled with foliar applications of diquat (0.75 gallons per acre) and a non-ionic surfactant (0.25 gallons per acre) or glyphosate (0.75 gallons per acre) and a non-ionic surfactant (0.25 gallons per acre).

Water hyacinth was controlled with 2,4-D at a rate of 0.5 gallons per acre. During the colder months when plant activity slowed or if the problem area was in a restricted zone, diquat (0.75 gal/acre) with a non-ionic surfactant (0.25 gal/acre) was used.

Crested floating heart, which is contained in a small area north of the Diversion Canal and in sparse patches along the canal, has been spot treated with Clearcast (imazamox, 0.5 gal/acre) and Inergy surfactant (0.25 gal/acre). Annually, Amite River is sprayed an average of 7 days. In the Amite River complex (including New River & Diversion Canal), approximately

150 acres of vegetation are chemically treated per year. More than half of the acres sprayed are common salvinia, with the remaining acreage being composed of water hyacinth, water lettuce, water lily, water paspalum, and duckweed (Table 2).

The use of herbicides is an important component of the Louisiana Department of Wildlife and Fisheries (LDWF) integrated pest management program. The proper selection and use of herbicides is essential to achieve cost effective benefits and to avoid damage to non-target species. Each product listed has been approved by the Environmental Protection Agency for aquatic use. Aquatic vegetation is treated according to the standard operating procedures for the application of herbicides as adopted by the LDWF Inland Fisheries Section (Table 3).

Table 2. Foliar herbicide treatments on Amite River, LA from 2005 – 2013.

<b>AMITE RIVER ACRES AQUATIC VEGETATION TREATMENT BY YEAR</b>									
<b>PLANT</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
Alligator weed	15	7	40	5	3	2	13	1	40
Common salvinia	13	122	157	197	242	32	125	88	99
Water paspalum	13	3	15	-	4	14	-	-	-
Water hyacinth	-	-	12	1	-	-	-	-	15
Other	11	6	4	24	0	1	18	3	26
<b>TOTAL:</b>	<b>52</b>	<b>138</b>	<b>228</b>	<b>227</b>	<b>249</b>	<b>49</b>	<b>156</b>	<b>92</b>	<b>180</b>

Table 3. Herbicide treatments in Amite River, Louisiana 2013.

<b>AMITE RIVER ACRES OF AQUATIC VEGETATION TREATED IN 2013</b>			
<b>SPECIES</b>	<b>ACRES</b>	<b>HERBICIDES*</b>	<b>APPLICATION RATES</b>
Water hyacinth	12	2,4-D	0.5 gal/acre
	3	Glyphosate	0.75 gal/acre
Alligator weed	28	2, 4-D	0.5 gal/acre
	12	Glyphosate	0.75 gal/acre
Water lettuce	1	Glyphosate	0.75 gal/acre
	2	Flumioxazin	8 oz/acre
Pennywort	1	2, 4-D	0.5 gal/acre
Primrose	1	2, 4-D	0.5 gal/acre
Duckweed	10	Diquat	0.75 gal/acre
	11	Glyphosate	0.75 gal/acre
Common Salvinia	4	Diquat/Flumioxazin	0.5 gal/ 4oz /acre
	41	Glyphosate	0.75 gal/acre
	54	Diquat	0.75 gal/acre
<b>TOTAL</b>	<b>180</b>		

\*All herbicide applications included a non-ionic surfactant at a rate of 0.25 gal/acre.

### *Limitations*

During high water periods, within this river complex, common salvinia floods into the surrounding swamps where it flourishes. LDWF spray crews are unable to access these areas due to the stands of dense timber and shallow water. Consequently, healthy populations of common salvinia drain out of the swamp into the river when water levels drop.

## **HISTORY OF REGULATIONS**

### Standardized Regulations

Statewide standard commercial and recreational regulations apply. Recreational and commercial fishing regulations may be viewed at the link below:

<http://www.wlf.louisiana.gov/regulations>

## **FISH KILLS / DISEASE HISTORY**

Fish kills were associated with the following hurricanes:

- August 1992 – Hurricane Andrew
- August 2005 – Hurricane Katrina
- September 2008 – Hurricane Gustav
- August 2012 – Hurricane Isaac

## **CONTAMINANTS / POLLUTION**

### Water quality

In 2010, the EPA listed Amite River as an impaired river due to mercury, chloride and other dissolved solids.

[http://ofmpub.epa.gov/tmdl\\_waters10/attains\\_watershed.control?p\\_huc=08070204&p\\_cycle=&p\\_report\\_type=T](http://ofmpub.epa.gov/tmdl_waters10/attains_watershed.control?p_huc=08070204&p_cycle=&p_report_type=T)

### Fish consumption advisory

Consumption advisory was issued April 23, 1998 after an unacceptable level of mercury was detected in bowfin. Women of child bearing age and children under the age of seven should limit bowfin consumption to no more than one meal per month. Other adults and children over the age of seven should limit bowfin consumption to no more than four meals a month. This advisory was last reviewed July 1, 2004.

<http://www.deq.louisiana.gov/portal/PROGRAMS/MercuryInitiative/FishConsumptionandSwimmingAdvisories.aspx>

## BIOLOGICAL

### Fish sampling

To monitor the sport fishery of Amite River, LDWF initiated standardized sampling in 1990 (Table 4).

Table 4. Historical and proposed sampling efforts on the Amite River, LA from 1990 – 2016.

<b>AMITE RIVER SAMPLING</b>	
1990	Electrofishing – 3 stations (fall)
1996	Electrofishing – 2 stations (spring and fall)
1998	Electrofishing – 5 stations (spring) Electrofishing – 6 stations (fall)
1999	Electrofishing – 5 stations (spring and fall)
2006	Electrofishing – 4 stations (spring and fall)
2007	Electrofishing – 4 stations (spring and fall)
2008	Electrofishing – 4 stations (spring and fall)
2009	Electrofishing – 4 stations (spring and fall)
2010	Electrofishing – 4 stations (spring and fall)
2012	Electrofishing – 4 stations (spring and fall) Hoop nets – 3 sites
2013	Electrofishing – 4 stations (spring, summer and fall) Ichthyoplankton trawls – 2 stations (May, June, July)
2014	Electrofishing – 4 stations (spring and fall) Ichthyoplankton trawls – 2 stations (April, May, June)
2015	Electrofishing – 4 stations (spring and fall) Hoop nets – 3 sites
2016	Electrofishing – 4 stations (spring and fall)

NOTE: Years of post-hurricane electrofishing efforts measure natural recovery of fishery.

### Fish Records

See LOWA state records <http://www.rodreel.com/LaFishRecords/ListFishRecords.asp>

Table 5. State record fishes captured by anglers Amite River, LA.

SPECIES	WEIGHT (lbs)	DATE	STATE RANK
White Bass	6.81	August 2010	1

Species profile

A list of species collected or known from Amite River is found in Table 6.

Table 6. Family, Scientific and Common Names of fish species collected or known from the Amite River watershed

- 
- Achiridae – American soles
    - Northern hogchoker - *Trinectes maculatus* (Bloch and Schneider)
  
  - Acipenseridae – sturgeons
    - Atlantic sturgeon, *Acipenser oxyrinchus* (Mitchill)
  
  - Amiidae – bowfin
    - Bowfin, *Amia calva* (Linnaeus)
  
  - Aphredoderidae – trout perches
    - Pirate perch, *Aphredoderus sayanus* (Gilliams)
  
  - Anguillidae – freshwater eels
    - American eel, *Anguilla rostrata* (Lesueur)
  
  - Atherinopsidae - New World silversides
    - Brook silverside, *Labidesthes sicculus* (Cope)
    - Inland silverside, *Menidia beryllina* (Cope)
  
  - Catostomidae – suckers
    - River carpsucker, *Carpiodes carpio* (Rafinesque)
    - Lake chubsucker, *Erimyzon sucetta* (Lacépède)
    - Creek chubsucker, *Erimyzon oblongus* (Mitchill)
    - Western creek chubsucker, *Erimyzon claviformis* (Cook)
    - Sharpfin chubsucker, *Erimyzon tenuis* (Agassiz)
    - Northern hogsucker, *Hypentelium nigricans* (Lesueur)
    - Spotted sucker, *Minytrema melanops* (Rafinesque)
    - Blacktail redhorse, *Moxostoma poecilurum* (Jordan)
    - Smallmouth buffalo, *Ictiobus bubalus* (Rafinesque)
    - Bigmouth buffalo, *Ictiobus cyprinellus* (Valenciennes)
    - Black buffalo, *Ictiobus niger* (Rafinesque)
  
  - Centrarchidae - sunfishes
    - Shadow bass, *Ambloplites ariommus* (Viosca)
    - Flier, *Centrarchus macropterus* (Lacépède)
    - Banded pygmy sunfish, *Elassoma zonatum* (Jordan)

Green sunfish, *Lepomis cyanellus* (Rafinesque)  
Orangespotted sunfish, *Lepomis humilis* (Girard)  
Bluegill, *Lepomis macrochirus* (Rafinesque)  
Warmouth sunfish, *Lepomis gulosus* (Cuvier)  
Dollar sunfish, *Lepomis marginatus* (Holbrook)  
Longear sunfish, *Lepomis megalotis* (Rafinesque)  
Redear sunfish, *Lepomis microlophus* (Günther)  
Bantam sunfish, *Lepomis symmetricus* (Forbes)  
Spotted bass, *Micropterus punctulatus* (Rafinesque)  
Northern largemouth bass, *Micropterus salmoides salmoides* (Lacépède)  
Florida largemouth bass, *Micropterus floridanus* (Kassler et al.)  
Hybrid largemouth bass, *M. floridanus X M. salmoides*  
White crappie, *Pomoxis annularis* (Rafinesque)  
Black crappie, *Pomoxis nigromaculatus* (Lesueur)

#### Clupeidae – herrings

Skipjack herring, *Alosa chrysochloris* (Rafinesque)  
Gizzard shad, *Dorosoma cepedianum* (Lesueur)  
Threadfin shad, *Dorosoma petenense* (Günther)  
Gulf menhaden, *Brevoortia patronus* (Goode)

#### Cyprinidae - carps and minnows

Speckled chub, *Macrhybopsis aestivalis* (Girard)  
Silver chub, *Macrhybopsis storeriana* (Kirtland)  
Clear chub, *Hybopsis winchelli* (Girard)  
Golden shiner, *Notemigonus crysoleucas* (Mitchill)  
Pallid shiner, *Hybopsis amnis* (Hubbs and Greene)  
Striped shiner, *Luxilus chrysocephalus* (Rafinesque)  
Ribbon shiner, *Lythrurus fumeus* (Evermann)  
Longnose shiner, *Notropis longirostris* (Hay)  
Taillight shiner, *Notropis maculatus* (Hay)  
Cherryfin shiner, *Lythrurus roseipinnis* (Hay)  
Weed shiner, *Notropis texanus* (Girard)  
Blacktail shiner, *Cyprinella venusta* (Girard)  
Mimic shiner, *Notropis volucellus* (Cope)  
Pugnose minnow, *Opsopoeodus emiliae* (Hay)  
Fathead minnow, *Pimephales promelas* (Rafinesque)  
Bullhead minnow, *Pimephales vigilax* (Baird and Girard)  
Cypress minnow, *Hybognathus hayi* (Jordan)  
Common carp, *Cyprinus carpio* (Linnaeus)  
Emerald shiner, *Notropis atherinoides* (Rafinesque)  
Silver carp, *Hypophthalmichthys molitrix* (Valenciennes)

#### Elopidae – tarpons

Ladyfish, *Elops saurus* (Linnaeus)

Engraulidae – anchovies

Bay anchovy, *Anchoa mitchilli* (Linnaeus)

Esocidae – pikes

Grass pickerel, *Esox americanus* (Gmelin)

Chain pickerel, *Esox niger* (Lesueur)

Fundulidae – topminnows and killifishes

Golden topminnow, *Fundulus chrysotus* (Günther)

Studfish, *Fundulus catenatus* (Storer)

Blackstripe topminnow, *Fundulus notatus* (Rafinesque)

Blackspotted topminnow, *Fundulus olivaceus* (Storer)

Broadstripe topminnow, *Fundulus euryzonus* (Suttkus and Cashner)

Ictaluridae - North American catfishes

Black bullhead, *Ameiurus melas* (Rafinesque)

Yellow bullhead, *Ameiurus natalis* (Lesueur)

Brown bullhead, *Ameiurus nebulosus* (Lesueur)

Blue catfish, *Ictalurus furcatus* (Lesueur)

Channel catfish, *Ictalurus punctatus* (Rafinesque)

Flathead catfish, *Pylodictis olivaris* (Rafinesque)

Tadpole madtom, *Noturus gyrinus* (Mitchill)

Speckled madtom, *Noturus leptacanthus* (Jordan)

Brindled madtom, *Noturus miurus* (Jordan)

Freckled madtom, *Noturus nocturnes* (Jordan and Gilbert)

Lepisosteidae - gars

Spotted gar, *Lepisosteus oculatus* (Winchell)

Longnose gar, *Lepisosteus osseus* (Linnaeus)

Shortnose gar, *Lepisosteus platostomus* (Rafinesque)

Alligator gar, *Lepisosteus spatula* (Lacépède)

Moronidae – temperate basses

Yellow bass, *Morone mississippiensis* (Jordan and Eigenmann)

White bass, *Morone chrysops* (Rafinesque)

Mugilidae – mullets

Striped mullet, *Mugil cephalus* (Linnaeus)

Petromyzontidae - northern lampreys

Southern brook lamprey, *Ichthyomyzon gagei* (Hubbs and Trautman)

Paralichthyidae – flounders

Southern flounder, *Paralichthys lethostigma* (Jordan and Gilbert)

Percidae – perches

Naked sand darter, *Ammocrypta beanii* (Jordan)  
Bluntnose darter, *Etheostoma chlorosomum* (Hay)  
Swamp darter, *Etheostoma fusiforme* (Girard)  
Cypress darter, *Etheostoma proeliare* (Hay)  
Speckled darter, *Etheostoma stigmaeum* (Jordan)  
Gulf darter, *Etheostoma swaini* (Jordan)  
Banded darter, *Etheostoma zonale* (Cope)  
Blackside darter, *Percina maculata* (Girard)  
Blackbanded darter, *Percina nigrofasciata* (Agassiz)  
Saddleback darter, *Percina vigil* (Hay)  
Dusky darter, *Percina sciera* (Swain)  
Scaly sand darter, *Ammocrypta vivax* (Hay)  
Logperch, *Percina caprodes* (Rafinesque)

Poeciliidae – livebearers

Western mosquitofish, *Gambusia affinis* (Baird and Girard)  
Sailfin molly, *Poecilia latipinna* (Lesueur)  
Least killifish, *Heterandria formosa* (Girard)

Polyodontidae – paddlefishes

Paddlefish, *Polyodon spathula* (Walbaum)

Sciaenidae – drums

Freshwater drum, *Aplodinotus grunniens* (Rafinesque)  
Atlantic croaker, *Micropogonias undulatus* (Linnaeus)

Sparidae – porgies

Sheepshead, *Archosargus probatocephalus* (Walbaum)  
Pinfish, *Lagodon rhomboides* (Linnaeus)

Syngnathidae – pipefishes and seahorses

Gulf pipefish, *Syngnathus scovelli* (Evermann and Kendall)

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Nomenclature and phylogenetic order follows Nelson, *et al.* 2004. Common and Scientific Names of Fishes from the United States, Canada, and Mexico, 6<sup>th</sup> Edition. American Fisheries Society Special Publication 29. 386 pp. Exceptions are noted.

Stocking and genetics

Initial stocking efforts were a response to major fish kills caused by Hurricane Andrew. Subsequent stockings were the result of Hurricanes Katrina and Gustav. Amite River has been stocked with 780,308 Florida strain largemouth bass since 1993 (Table 7).

Table 7. Stocking history of Amite River, LA from 1993 – 2010.

YEAR	LMB FINGERLINGS	LMB ADULT	FLMB FRY	FLMB FINGERLINGS	BLUEGILL FINGERLINGS	CHANNEL CATFISH FINGERLINGS	BLACK CRAPPIE FINGERLINGS
1993	40,000	204					
1994	346						
1995	118,600						
1996				17,371			
1997	23,750*						
1999				16,772			
2000				13,965			
2001				10,000			
2002				10,546			
2003				10,036			
2004				10,013			
2005				10,059			
2006	288	200		171,299	117,444	30,116	
2007				175,695	79,095	106,535	
2008				120,703		19,000	1,339
2009				186,419	389,283	6,970	
2010				3,680		3,672	
<b>TOTAL</b>	159,234	404	23,750	756,558	585,822	166,293	1,339

A majority of these fish were stocked post hurricanes Katrina and Gustav, in response to public outcry over the massive fish kills that occurred following these storm events. In the post storm absence of predation and competition, the Florida largemouth bass should have become dominant in this coastal river. However, this species failed to even become established. Genetic testing conducted in 2010 indicated that less than 10% of the Florida genome was present in the sample results (Table 8). The stockings of Florida largemouth bass in the nearby Tangipahoa, Tickfaw and Blind Rivers yielded similar results. This tenacity for recovery of native largemouth bass populations has also been noted in other coastal river systems including the Calcasieu, Mermentau and Sabine rivers in southwest Louisiana following hurricanes Rita (2005) and Ike (2008). These systems received little to no stockings of largemouth bass before and after the hurricane related fish kills, yet yielded record catch rates within two years into recovery. These observations suggest that native coastal populations of largemouth bass (and other indigenous fish species) have adapted to these periodic storm events and rapid recovery is part of the natural selection process.

Table 8. Results of 2010 genetic testing for the Florida gene on Amite River, Louisiana.

Number of fish	% Northern	% Hybrid	% Florida
151	91	7	2

Threatened/endangered/exotic species

Paddlefish (*Polyodon spathula*) and Gulf sturgeon (*Acipenser oxyrinchus desotoi*) are inhabitants of the Lake Pontchartrain Basin.

In early summer of 2012, two adult silver carp (*Hypophthalmichthys molitrix*) were identified in the Amite River. An adult silver carp was also identified in late summer of 2013. These fish may have been introduced via the Bonne Carre Spillway operation by the US Army Corps of Engineers during the 2011 flood event. To date, no juveniles have been observed. Sampling efforts began in summer of 2013 to determine if Asian carp are reproducing in the watershed.

In winter 2012, following Hurricane Isaac, a commercial fisherman caught a plecostomus (*Hypostomus plecostomus*) measuring over ten inches in a hoop net.

**ANGLER SURVEYS**

No angler surveys have been conducted

**HYDROLOGICAL CHANGES**

- Shortening and widening of the river has resulted in floodwaters reaching the lower developed portion of the river faster.
- Channel modifications and creation of spoil banks has decreased the river's connection to surrounding wetlands.
- Urban development and agricultural expansion has increased the amount of surface water runoff.
- The Diversion Canal that connects Amite and Blind rivers was constructed in the 1960's as a means to reduce flooding along the Amite River.

**WATER USE**

Hunting

Yes

Skiing

Yes

Scuba Diving

No

Swimming

Yes

Irrigation

Yes

Fishing

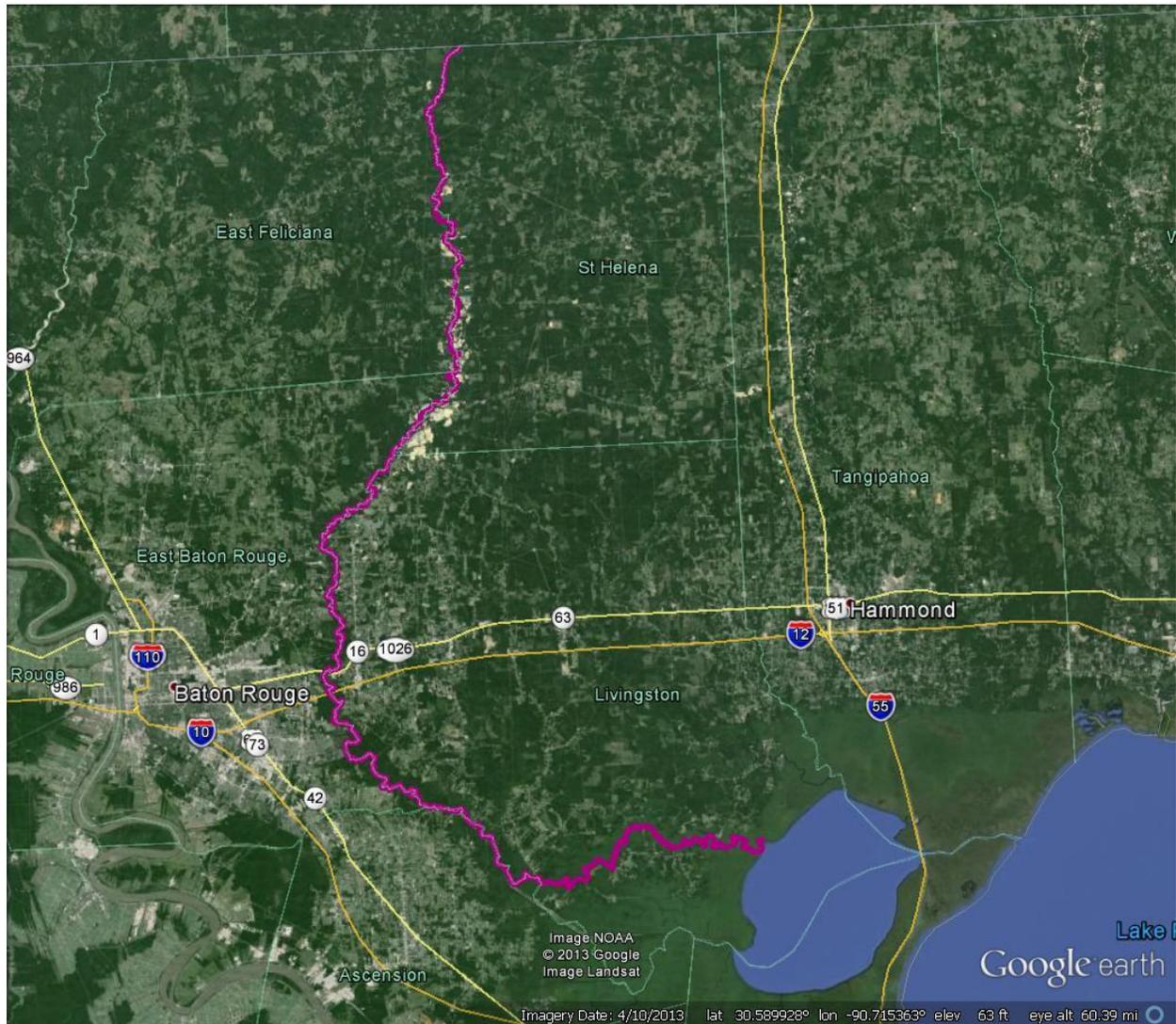
Yes

Boating

Yes

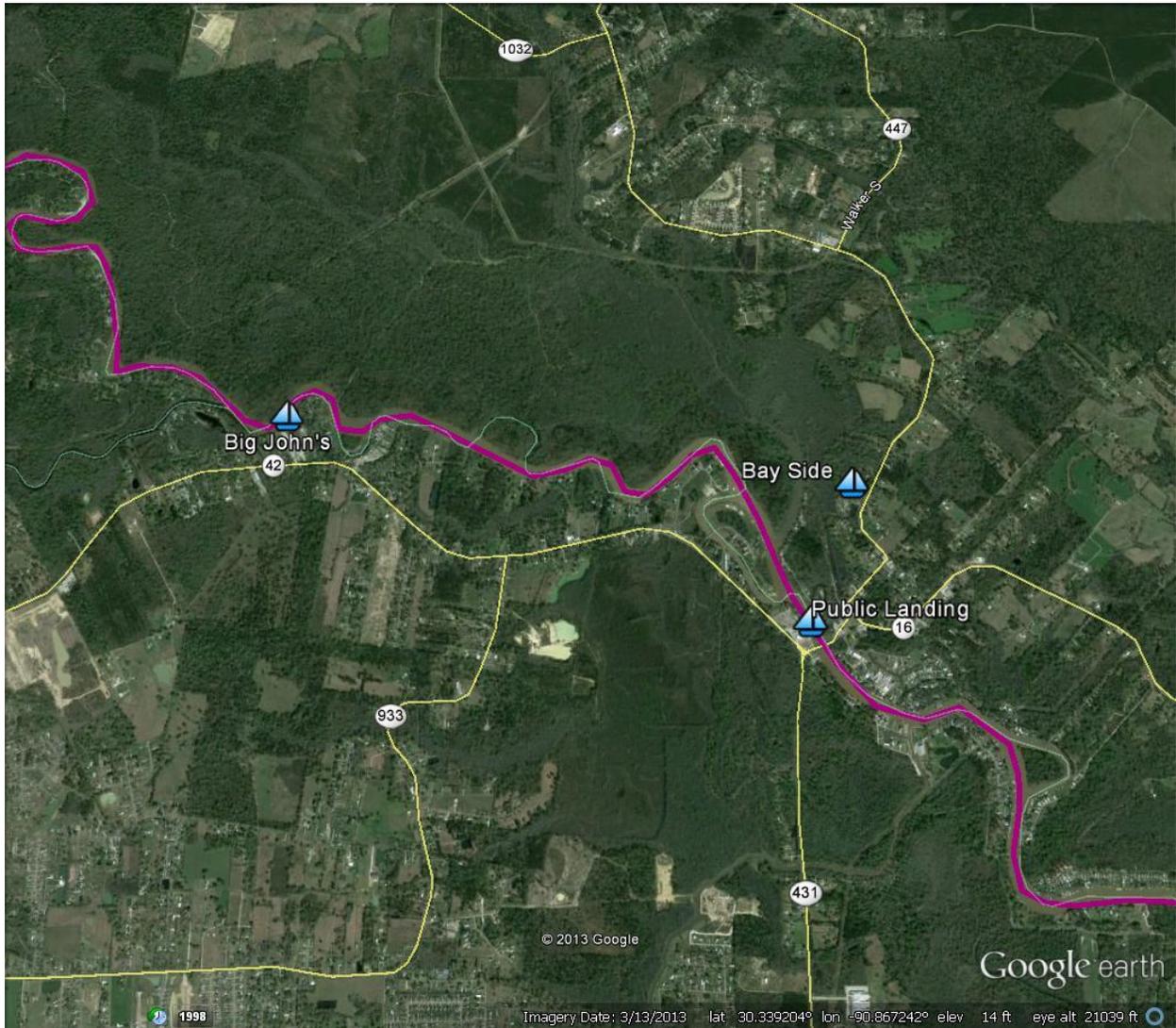
# APPENDIX I – MAP AND PARISHES

[\(Return to document\)](#)



## APPENDIX II – MAP AND LANDING

[\(return to boat docks\)](#)



## APPENDIX II – MAP AND LANDING CONTINUED

