

LOUISIANA DEPARTMENT OF WILDLIFE & FISHERIES



**OFFICE OF FISHERIES
INLAND FISHERIES SECTION**

**PART VI -A
WATERBODY MANAGEMENT PLAN SERIES**

CALCASIEU RIVER, LOUISIANA

LAKE HISTORY & MANAGEMENT ISSUES

CHRONOLOGY

December 2012—Prepared by:

Eric Shanks, Biologist Manager, District 5

September 2014—Prepared by:

Eric Shanks, Biologist Manager, District 5

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LAKE HISTORY

GENERAL INFORMATION

The Calcasieu River is a western Gulf coastal plain river system originating in Vernon Parish, Louisiana. The river flows through Vernon, Rapides, Allen, Jefferson Davis, Cameron and Calcasieu Parishes. Historically, the river flowed through Calcasieu Lake in Cameron Parish with a small section below the lake emptying into the Gulf of Mexico. Currently, the main river flow bypasses Calcasieu Lake through the Calcasieu Ship Channel. The river is approximately 202 river miles in length, including the Calcasieu Ship Channel. From Hwy. 8 in Vernon Parish to the Allen Parish line, and from the confluence with the Whiskey Chitto Creek to Ward 8 Park in Calcasieu Parish, the river is a designated scenic stream as per Act 947 by the Louisiana legislature in 1988 (RS 56:1856).

Impoundment

There are two low-head dams on the Calcasieu River, and an earthen dam/tainter gate with ship lock ([Appendix](#), Figures 4-6):

Name: None

Location: Allen parish outside of Oakdale (30.80767N,-92.68466W)

Purpose: Constructed in early 1960's by Louisiana Department of Public Works (LDPW) for water supply and recreation.

Authority: Allen Parish

Name: None

Location: Allen parish outside of Kinder (30.51205N,-92.87115W)

Purpose: Constructed in early 1960's by LDPW for water supply and recreation.

Authority: Allen Parish

Name: Saltwater Barrier

Location: Calcasieu parish outside of Westlake (30.25303N,-93.21842W)

Purpose: Constructed in 1968 to prevent saltwater intrusion further upstream.

Authority: Owned and operated by U.S. Army Corps of Engineers (USACE). An earthen dam blocks the old channel while tainter gate structures with boat lock are located in a man-made channel.

Watershed

The Calcasieu River basin is approximately 3,910 square miles ([Appendix](#), Figure 3) and is bordered by the Sabine River basin to the west and the Mermentau River basin to the east. The river has several major tributaries (Table 1), some of which are designated as scenic streams. The portion of the river from Lake Charles to the Gulf of Mexico is subject to tidal influence.

Table 1. Major tributaries of the Calcasieu River, their length in miles, scenic river designation, and LDEQ water body codes.

Waterbody Name	Length (River miles)	Scenic Stream	Waterbody Code
Cypress Bayou	15	No	N/A
Whiskey Chitto Creek	87	Yes	030501
			030502
Barnes Creek	62	Yes	030601
			030602
Bayou Serpent	37	No	030701
English Bayou	15	No	030702
West Fork Calcasieu River	17	No	030801
Bayou Choupique	20	No	031001

Parishes/Location

Vernon, Rapides, Allen, Jefferson Davis, Calcasieu, and Cameron Parishes.

Ownership

The Calcasieu River and its listed tributaries (Table 1) are owned by the State of Louisiana. The laws governing the natural and Scenic River systems regulate some land practices along the river and also protect the river from hydrologic alterations. The Louisiana Department of Wildlife & Fisheries (LDWF) manages the fish and wildlife resources.

Waterway Commission

No waterway commission exists for the Calcasieu River system. The USACE is responsible for channel maintenance of the Calcasieu Ship Channel, and operations of the lock at the saltwater barrier.

Private Organizations

None

PUBLIC ACCESS

Boat Ramps

There are 11 public boat ramps on the Calcasieu River (Table 2), see [Appendix](#) for maps.

Table 2. List of Calcasieu River public boat launches by parish with location information.

Parish	Ramp	Latitude	Longitude
Allen	State Hwy. 26	30.639804	-92.814404
	State Hwy. 10	30.822352	-92.684999
Calcasieu	Interstate 10	30.237448	-93.239034
	Ward 8/White Oak Park	30.296463	-93.117832
	Theriot Road	30.298961	-93.188241
	Riverside Park	30.252909	-93.245048
	Salt Water Barrier	30.254315	-93.218027
	Fitzenreiter Rd	30.26553	-93.197635
	Calcasieu Point (saltwater)	30.10412	-93.30651
Cameron	Cameron Ferry (saltwater)	29.80452	-93.34931
	Calcasieu Jetty (saltwater)	29.76788	-93.34195

Boat Docks

Boat docks are available at the following ramps:

Ward 8/White Oak Park

Theriot Rd.

Riverside Park

Fitzenreiter Rd.

Calcasieu Point

Calcasieu Jetty

Piers

Riverside Park

Cameron Recreation Center (saltwater)

State/Federal facilities

There are no state facilities on the Calcasieu River; however Sam Houston Jones State Park is located on the Calcasieu West Fork near the Calcasieu River. The USACE Saltwater Barrier is located just upstream of Lake Charles. A portion of the Sabine National Wildlife Refuge is located on the west bank of the Calcasieu Ship Channel.

SHORELINE DEVELOPMENT

State/National Parks

There are no state or federally owned parks on the main stem Calcasieu River, however Sam Houston Jones State Park is located on the West Fork of the Calcasieu River.

Shoreline Development by Landowners

The shoreline in and around the city of Lake Charles is heavily developed with many homes, camps, industrial, and commercial facilities. Downstream of Lake Charles to Calcasieu Lake is

heavily industrialized by the petrochemical industry. Upstream of Lake Charles, development becomes less pronounced until Ward 8/White Oak Park where the scenic stream designation begins and greater than 90% of the corridor is undeveloped.

PHYSICAL DESCRIPTION

Shoreline length

Lower 15%: Approximately 26 river miles

Mid 15%: Approximately 37 river miles

Upper 70%: Approximately 139 river miles

Timber type

Lower 15%: N/A, riparian habitat consists primarily of coastal marsh.

Mid 15%: Coastal marsh, cypress/tupelo swamp, bottomland hardwoods.

Upper 70%: River birch, sycamore, cypress, mixed pine/hardwood, commercial pine plantation.

Average depth

Lower 15%: 35'

Mid 15%: 25'

Upper 70%: 5'

Maximum depth

Lower 15%: 50'

Mid 15%: 50'

Upper 70%: 25'

Natural seasonal water fluctuation

Lower 15%: -1.0'-3.0'

Mid 15%: -0.5'-6.0'

Upper 70%: 1.0'-15.0'

Events/Problems

Saltwater intrusion/coastal erosion:

The original Calcasieu Ship Channel was constructed for navigation by the Army Corps of Engineers in the 1920's. This channel has been modified and expanded several times in the last century with the most recent modification (deepening) completed in 1968. This channel provides ready access for large ships to the Port of Lake Charles; however it has significantly changed the hydrology of the lower river by allowing ingress of high salinity water.

Industrialization:

Lake Charles and its port are a major center of the petrochemical industry. Historic pollution prior to the implementation of the Clean Water Act is still a concern in the system and the seafood/finfish in the estuary are monitored for health hazards (Table 6).

Sand mining:

Historically, the Calcasieu River was mined for sand and gravel. Since the inclusion of a

significant portion of the river into the scenic streams program, these activities are conducted on private lands outside the main river channel, and are generally no longer an environmental concern on the river.

Oil Spill/Chemical Releases:

While regular releases from industry on the river are regulated by Louisiana Department of Environmental Quality (LDEQ) and the United States Environmental Protection Agency (EPA), accidental spills and emergency releases are still of concern. In 2006, Citgo Co. had an accidental release of an estimated 25,000 barrels of waste oil (Per. Comm. Kevin Natali, LDEQ) from their facility below Lake Charles. This resulted in a temporary closure of fishing/boating from Lake Charles to the Gulf of Mexico. The spill was contained and cleaned with no documented long term effects on fisheries.

Hurricanes:

The Calcasieu River system is susceptible to hurricane related fish kills. See FISH KILLS/DISEASE HISTORY section below for details on hurricane related fish kills.

MANAGEMENT ISSUES

AQUATIC VEGETATION

Aquatic vegetation problems are concentrated on the middle section of the river in the Lake Charles area. This is where the river widens and peak (freshwater) public usage occurs. In the upper section river flows generally prevent problematic vegetation from accruing, and in the lower section high salinities kill infestations. In the middle section, nuisance plants concentrate in open bays and bayous. LDWF control efforts are directed primarily at these areas. Private swamps adjacent to the river provide nursery habitat.

Biomass

No biomass sampling has been conducted for nuisance aquatic vegetation in the Calcasieu River. Estimated acreages of aquatic vegetation on public waterways are as follows:

Estimated for fall 2014:

Common salvinia (100 acres)

Giant Salvinia (20 acres)

Alligator weed (200 acres)

Water Hyacinth (200 acres)

Predicted for fall 2015:

Common salvinia (100 acres)

Giant Salvinia (50 acres)

Alligator weed (200 acres)

Water Hyacinth (200 acres)

Biological

In fall 2012, approximately 4,000 giant salvinia weevils were stocked at three release sites in infested backwater areas. In 2013, 18 sites were stocked with an estimated 22,200 weevils by LDWF. Four of these 18 sites were stocked again in 2014. Giant salvinia coverage at 12 stocked sites has had significant reductions (>90%). No herbicide treatments were conducted at these locations, and with no other apparent contributing factors, this control is attributed to weevil activity. No appreciable reductions in salvinia biomass have been observed at the remaining 6 sites, however weevil damaged salvinia has been noted at these locations. While not quantifiable, it is likely that weevil activity in these locations has helped to prevent the expansion of salvinia in these areas. More time may be required at these locations for weevils to achieve significant reductions in total salvinia biomass. Additionally, weevil damage has been documented on common salvinia at all stocking sites where it is present.

Chemical

Traditional control measures for aquatic vegetation in this area involve using spray herbicides. In 2009, giant salvinia was discovered in the watershed and sprayers used diquat (0.75gal/acre) herbicide as a control (Table 1). Plant problems and spray efforts are concentrated in the slack-water bays and canals.

Herbicide selection and application rates are in accordance with the approved LDWF Aquatic Herbicide Recommendations. Historically, water hyacinth and alligator weed were treated with 2,4-D (0.5 gal/acre), and common salvinia was treated with glyphosate (0.75 gal/acre) or diquat (0.75 gal/acre). Currently, water hyacinth is still treated with 2,4-D (0.5 gal/acre) while *Salvinia spp.* are treated with a mixture of glyphosate (.75 gal/acre) and diquat (0.25 gal/acre) with Aqua King Plus (0.25 gal/acre) and Air Cover (12 oz/acre) surfactants. Alligator weed is treated with imazapyr at 0.5 gal/acre with Turbulence (0.25 gal/acre) surfactant.

Table 1. Calcasieu River System herbicide treatment measures 2006-2014.

Year	Number of Treatments*	Acres Treated	Primary Vegetation Treated
2006	9	113	Water Hyacinth, Alligator weed
2007	2	16	Alligator weed, Water Hyacinth
2008	11	208	Water Hyacinth, Alligator weed, Common Salvinia
2009	35	640	Common Salvinia, Water Hyacinth, Giant Salvinia, Alligator weed
2010	5	134	Water Hyacinth, Giant Salvinia, Alligator weed, Common Salvinia
2011	16	460	Common Salvinia, Alligator weed, Water Hyacinth
2012	6	119	Giant Salvinia, Common Salvinia
2013	15	331	Giant Salvinia
2014	5	79	Common Salvinia, Giant salvinia, Alligator weed,

*For reporting purposes, a treatment is defined as one crew for one day.

Physical

During dry conditions, salinities can reach levels high enough to slow growth rates or kill plants in some areas.

Type map

There is no type map available for the Calcasieu River.

HISTORY OF FISHING REGULATIONS

Recreational

The Calcasieu River was historically, and is currently, managed under statewide length and creel limits. Current Louisiana fishing regulations can be found at:

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

Recreational hoop and wire nets are prohibited below the Intracoastal Waterway (designated saltwater zone).

Commercial

The Calcasieu River was historically, and is currently, managed under statewide regulations. Current Louisiana commercial fishing regulations can be found at:

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

Gill nets, seines, and trammel nets are prohibited below the Intracoastal Waterway (designated saltwater zone).

FISH KILLS / DISEASE HISTORY

Fish Kills

In September 2005, Hurricane Rita made landfall in Cameron Parish. The resulting anoxic conditions caused massive fish kills along the entire river system to above U.S. Hwy. 190 in Allen Parish. Dissolved oxygen (DO) levels below 1.0ppm at the Saltwater Barrier were observed up to four weeks after the storm (Figure 1). Based on standardized sampling results in November 2005, LDWF personnel estimated more than 95% of all freshwater finfish in the middle section of the river were killed. Population recovery, according to LDWF standardized sampling, was rapid, with record catch-per-unit effort (CPUE) of largemouth bass documented just one year later in fall 2006.

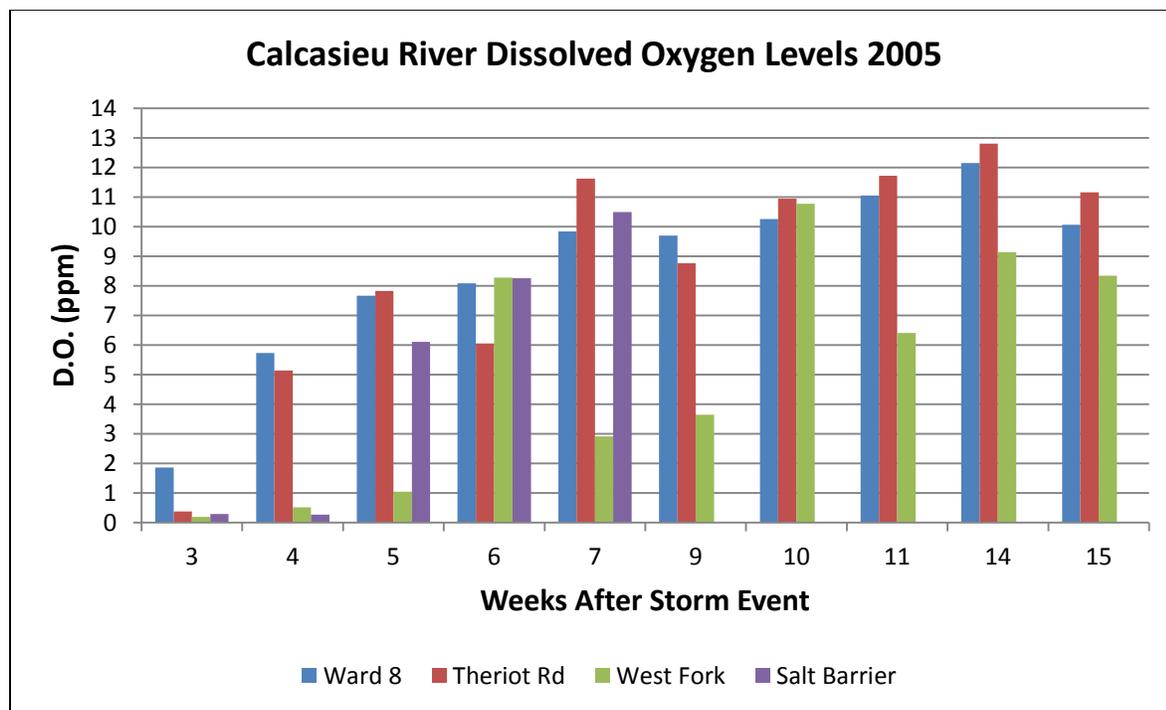


Figure 1. Dissolved oxygen readings recorded at multiple stations on the Calcasieu River from 3

to 15 weeks after Hurricane Rita in 2005.

In September 2008, Hurricane Ike made landfall near Galveston Texas. Recorded storm surges in Cameron Parish from this event were even higher than those for Rita. This caused massive flooding of the Calcasieu River system and Cameron Parish. Fish kills from this event were not as severe or widespread as kills resulting from Rita. No anoxic conditions were observed at ten days post hurricane (Figure 2).

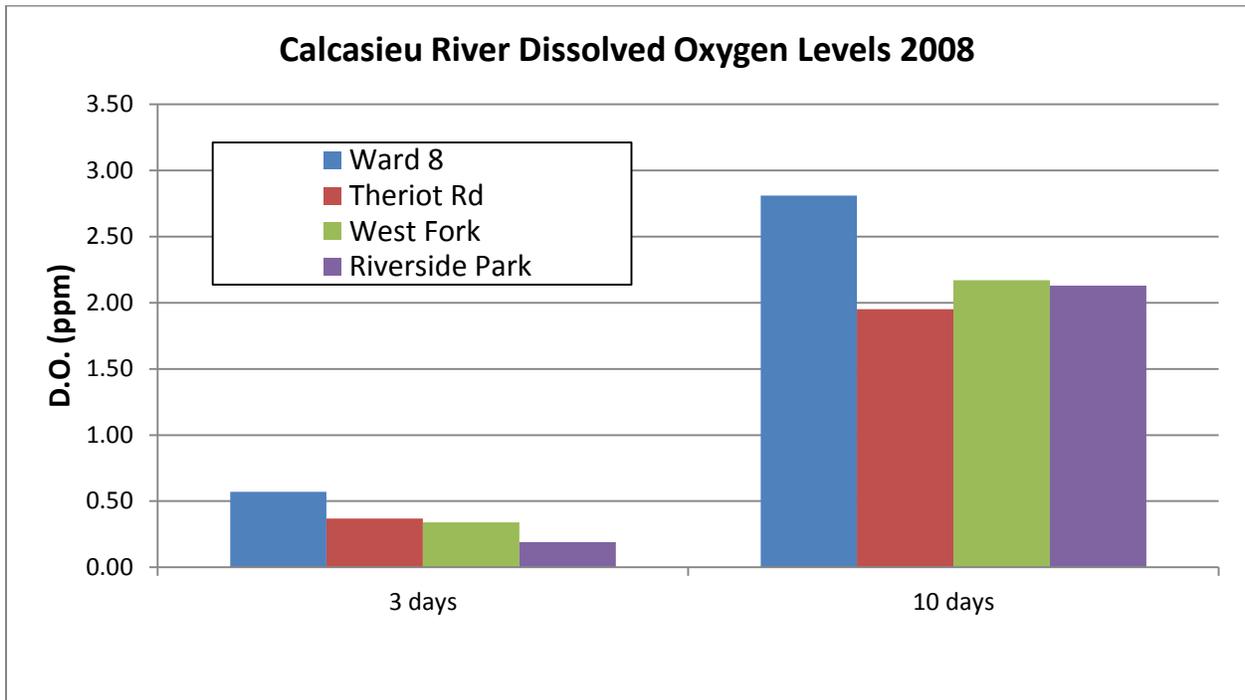


Figure 2. Dissolved oxygen readings recorded at multiple stations on the Calcasieu River at 3 days and 10 days after Hurricane Ike in 2008.

Disease History

In 2002, 11 largemouth bass were sampled for the presence of largemouth bass virus (LMBV). Three fish (27.3%) tested positive for LMBV. No disease related fish kills have been documented in the Calcasieu River.

CONTAMINANTS / POLLUTION

Contaminants/pollution

The following fish consumption advisories (Tables 5 and 6) can be found on the Department of Environmental Quality/Mercury Initiative website:

<http://www.deq.louisiana.gov/portal/Portals/0/planning/Fish%20Consumption%20Advisory%20Table%20-%202018-09.pdf>

Table 5. Mercury fish consumption advisory for the Calcasieu River system as of 2014.

Waterbody	Contaminants	Advisory Type	Recommendations	Area	Date Established
Calcasieu River Drainage Basin LA030103_00 LA030201_00 LA030801_00 LA030806_00 LA030802_00 LA030803_00 LA030702_00 LA030804_00 (Calcasieu, Jefferson Davis, and Allen)	Mercury	Advisory fish consumption	Women of childbearing age and children less than seven years of age SHOULD NOT CONSUME largemouth bass, freshwater drum, or bowfin (choupique, grinnel) from the advisory area. Other adults and children seven years of age and older should consume no more than TWO MEALS PER MONTH of largemouth bass, freshwater drum, and bowfin (choupique, grinnel) combined from the advisory area. Unless the fish species is specifically addressed in the details of the advisory, please limit consumption of all species in an advisory area to FOUR MEALS PER MONTH.	The Calcasieu River from Hwy 26 to the Saltwater Barrier north of Lake Charles, the West Fork Calcasieu River, Houston River, Hickory Creek, Beckwith Creek, English Bayou, and Little River.	Issued: 11/20/00 Revised: 5/29/03 and 7/1/04

Table 6. Organic chemical fish consumption advisory for lower Calcasieu River system as of 2014.

Waterbody	Contaminants	Advisory Type	Recommendations	Size	Date Established
Calcasieu River, Estuary to Gulf of Mexico LA030301_00 LA030304_00 LA030401_00 (Calcasieu and Cameron)	Hexachlorobenzene, Hexachloro-1,3-butadiene, PCBs	Informational advisory fish contamination	Caution advised on fish consumption due to low levels of chemical contamination.	37.0 miles	Issued: 04/07/92 Revised: 10/94 and 1995

Water Quality

The Calcasieu River has three designated uses over its entirety; primary contact recreation (swimming), secondary contact recreation (boating), and fish and wildlife propagation. Other uses designated on certain segments include; agriculture and outstanding natural resource waters. The 2012 LDEQ Water Quality Integrated Report indicates that 2 of 6 segments are not fully supporting primary contact recreation, and 1 of 6 segments is not supporting secondary contact

recreation. Suspected impairments for these segments are fecal coliforms attributed to natural sources. No (0 of 6) segments on the main stem Calcasieu are fully supporting fish and wildlife propagation. Suspected impairments include; contaminants (i.e. lead and mercury, Tables 5 and 6), low pH (naturally occurring), and turbidity resulting from agriculture..

It is important to note that LDEQ designated uses are categorized as either fully supported or not supported. The degree of impairment and its effects on fisheries is not quantified in the report. The complete report can be viewed on LDEQ’s website at:

<http://www.deq.louisiana.gov/portal/DIVISIONS/WaterPermits/WaterQualityStandardsAssessment/WaterQualityInventorySection305b/2012IntegratedReport.aspx>

Water Levels

Water level data (Tables 7 and 8) was provided by the United States Geological Survey (USGS) and can be found at the following website:

<http://waterdata.usgs.gov/la/nwis/current/?type=flow>

Table 7. Mean discharge in cubic feet per second (cfs) by month for the Calcasieu River, Louisiana, from 1944-2013.

Calcasieu River Mean Monthly Discharge 1944-2013												
Station	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Glenmora	1449	1594	1276	1038	888	354	242	130	180	263	558	1070
Oberlin	2012	2290	1934	2000	1428	537	437	215	330	424	745	1495
Kinder	4334	4758	3901	3297	3309	1612	1307	749	910	1200	1702	3528

Table 8. Mean gage height in feet by month for the Calcasieu River, Louisiana for all available years.

Calcasieu River Mean Monthly Gauge Heights													
Station	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEARS
Glenmora	9.5	10.8	10.0	8.7	6.8	6.0	6.0	5.1	5.7	6.0	7.0	8.8	1997-2014
Oberlin	7.4	8.1	7.1	6.3	4.7	3.4	3.5	2.4	2.8	3.0	3.4	5.5	1989-2013
Kinder	9.0	9.7	8.7	7.3	6.1	4.7	4.1	3.1	3.5	3.6	4.7	7.6	1966-2013
Lake Charles	0.8	1.1	1.1	1.4	1.5	1.4	1.3	1.2	1.7	1.6	1.2	0.8	2001-2013

SAMPLING

Historical/Recent Sampling

The Calcasieu River was first sampled by LDWF in 1989 after the development of the Louisiana Black Bass Management Plan. Electrofishing has been, and continues to be, the primary sampling tool used to evaluate sport fish populations in the river (Table 9). In 2002, the big river standardized sampling program was developed and fully implemented in 2003. Electrofishing, gill nets, hoop nets, and seines were utilized from 2003-2009 (Table 10). Netting was discontinued in 2010.

Table 9. Historical standardized sport fish and forage samples taken by year for each gear type on the Calcasieu River, LA, spring and fall electrofishing combined.

Year	Electrofishing Effort-Sportfish	Electrofishing Effort-Forage	25 Foot Haul Seine
1989	1		
1990	4	1	5
1992	3		
1993	5	1	
1994	7	1	
1995	5	1	
1996	6	1	
1997	5	1	
1998	3	1	
1999	3	1	
2000	6	1	
2001	3	1	
2002	4		
2003	7	1	
2004	3	1	
2005	7	1	
2006	7	1	
2007	7	1	
2008	7	1	
2009	3	1	
2010	6	1	
2011	7	3	
2012	8	4	
2013	8	4	
2014	4	4	
Total	129	32	5

Table 10. Historical standardized big river samples taken by year for each gear type on the Calcasieu River, LA.

Year	Electrofishing	Gill Net	Hoop net	Haul Seine
2002	2			
2003	6	6	9	17
2004	6	6	18	18
2005	7	6	12	17
2006	6	6	17	19
2007	4	4	8	10
2008	4	4	3	8
2009	4	3	8	11
2010	6			16
2011	6			16
2012	6			31
2013	4			23
2014				8
Total	61	35	75	194

Future Sampling

Table 11. Future sampling planned on the Calcasieu River, LA.

2015	Electrofishing: 8-15 minutes samples (spring and fall); 4-225 second forage samples (fall); 2-15 minute river samples (summer). Seines: 8-10 foot seine hauls (summer)
2016	Electrofishing: 8-15 minutes samples (spring and fall); 4-225 second forage samples (fall); 2-15 minute river samples (summer). Seines: 8-10 foot seine hauls (summer)

Creel Surveys

An LDWF standardized recreational angler survey was conducted over a 12-month period in 2013. A total of 247 interviews were conducted over this time period, with an estimated 6,460 anglers catching 9,028 LMB, of which 7,380 (81.7%) were released. Detailed analyses of recreational angler surveys are discussed further in Part B.

Age & Growth

Largemouth bass otoliths were collected during standardized sampling in 1990, 2000, and 2007. Otoliths were also collected as part of the standardized LMB population assessment from 2012 through 2014. The results of this assessment should be available in 2015.

Genetic Analysis

Genetic analyses were conducted as part of the standardized LMB population assessment from 2012-2014. Available results of these analyses are found in Table 12.

Table 12. Recent genetic analyses for Calcasieu River, LA largemouth bass population 2012–2013.

Year	Number	Northern	Florida	Hybrid	Florida Influence
2012	131	115	0	16	12.2%
2013	126	113	0	13	10.3%

Stocking History

Relatively few stockings have been conducted on the Calcasieu River. This is primarily due to good natural recruitment making stocking efforts extraneous and inefficient. The exception to this is striped bass, where LDWF stocked over two million fingerlings and fry from 1994-2000 (Table 12). The primary goal of these stockings was to establish and maintain a viable sport fishery for striped bass. Because striped bass do not naturally occur and do not reproduce in the Calcasieu River, multiple stockings were needed to maintain this fishery. Due to low public acceptance, these stockings have been discontinued. Excess hatchery reared hybrid striped bass were stocked in 2010, with anglers successfully catching and harvesting limits of these fish. Because of the success and enjoyment of this stocking, hybrid striped bass are requested for stocking annually.

Table 12. Stocking history of the Calcasieu River, Louisiana.

YEAR	BLUEGILL	CHANNEL CATFISH	NORTHERN LARGEMOUTH BASS	STRIPED BASS	HYBRID STRIPED BASS
1994				1,447,110	
1995				176,261	
1996		16,500		1,154,404	
1997				150,208	
1998				76,520	
1999				16,520	
2000				137,692	
2006			13,650		
2007	73,008	50,928			
2010					74,140
2013					99,797
TOTALS	73,008	67,428	13,650	2,070,215	173,937

Lake Records

No waterbody specific records are maintained for the Calcasieu River.

SPECIES PROFILE

Fish Species Present

Table 13. Fish species collected in the Calcasieu River drainage, Louisiana. Compiled by Conner, Suttkus, Thompson, & Reed (2008). Estuarine species are included.

Family, Scientific and Common Names
Petromyzontidae - lampreys {2} <i>Ichthyomyzon castaneus</i> Girard, 1858 - chestnut lamprey <i>Ichthyomyzon gagei</i> Hubbs and Trautman, 1937 - southern brook lamprey
Carcharhinidae - requiem sharks {1} <i>Carcharhinus leucas</i> (Muller and Henle, 1839) - bull shark
Dasyatidae - whiptail stingrays {1} <i>Dasyatis sabina</i> (Lesueur, 1824) - Atlantic stingray
Polyodontidae - paddlefishes {1} <i>Polyodon spathula</i> (Walbaum, 1792) - paddlefish
Lepisosteidae - gars {3} <i>Atractosteus spatula</i> (Lacepede, 1803) - alligator gar <i>Lepisosteus oculatus</i> Winchell, 1864 - spotted gar <i>Lepisosteus osseus</i> (Linnaeus, 1758) - longnose gar
Amiidae - bowfin {1} <i>Amia calva</i> Linnaeus, 1766 - bowfin
Elopidae - tenpounders {1} <i>Elops saurus</i> Linnaeus, 1766 - ladyfish
Megalopidae - tarpons {1} <i>Megalops atlanticus</i> Valenciennes, 1847 - tarpon
Anguillidae - freshwater eels {1} <i>Anguilla rostrata</i> (Lesueur, 1817) - American eel
Ophichthidae - snake eels {1} <i>Myrophis punctatus</i> Lutken, 1852 - speckled worm eel
Engraulidae - anchovies {2} <i>Anchoa hepsetus</i> (Linnaeus, 1858) - striped anchovy <i>Anchoa mitchilli</i> (Valenciennes, 1848) - bay anchovy
Clupeidae - herrings {4} <i>Alosa chrysochloris</i> (Rafinesque, 1820) - skipjack herring <i>Brevoortia patronus</i> Goode, 1878 - Gulf menhaden <i>Dorosoma cepedianum</i> (Lesueur, 1818) - gizzard shad <i>Dorosoma petenense</i> (Guenthur, 1867) - threadfin shad
Cyprinidae - carps and minnows {20} <i>Carassius auratus</i> (Linnaeus, 1758) – goldfish [Introduced] <i>Cyprinus carpio</i> Linnaeus, 1758 - common carp [Introduced] <i>Cyprinella lutrensis</i> (Baird and Girard, 1853) - red shiner <i>Cyprinella venusta</i> Girard, 1856 - blacktail shiner <i>Hybognathus hayi</i> Jordan, 1885 - cypress minnow

Hybognathus nuchalis Agassiz, 1855 - Mississippi silvery shiner
Hybopsis amnis (Hubbs, and Greene, 1951) - pallid shiner
Lythrurus fumeus (Evermann, 1892) - ribbon shiner
Lythrurus umbratilis (Girard, 1856) - redfin shiner
Notemigonus crysoleucas (Mitchill, 1814) - golden shiner
Notropis atherinoides Rafinesque, 1818 - emerald shiner
Notropis atrocaudalis Evermann, 1892 - blackspot shiner
Notropis chalybaeus (Cope, 1867) - ironcolor shiner
Notropis maculatus (Hay, 1881) - taillight shiner
Notropis sabiniae Jordan and Gilbert, 1886 - Sabine shiner
Notropis texanus (Girard, 1856) - weed shiner
Notropis volucellus (Cope, 1865) - mimic shiner
Opsopoeodus emiliae Hay, 1881 - pugnose minnow
Pimephales vigilax (Baird and Girard, 1853) bullhead minnow
Semotilus atromaculatus (Mitchill, 1818) - creek chub
 Catostomidae - suckers {8}
Carpiodes carpio (Rafinesque, 1820) - river carpsucker
Erimyzon claviformis (Girard, 1856) - western creek chubsucker
Erimyzon sucetta (Lacepede, 1803) - lake chubsucker
Ictiobus bubalus (Rafinesque, 1818) - smallmouth buffalo
Ictiobus cyprinellus (Valenciennes, 1844) - bigmouth buffalo
Ictiobus niger (Rafinesque, 1819) - black buffalo
Minytrema melanops (Rafinesque, 1820) - spotted sucker
Moxostoma poecilurum Jordan, 1877 - blacktail redhorse
 Ictaluridae - North American catfishes {8}
Ameiurus melas (Rafinesque, 1820) - black bullhead
Ameiurus natalis (Lesueur, 1819) - yellow bullhead
Ictalurus furcatus (Lesueur, 1840) - blue catfish
Ictalurus punctatus (Rafinesque, 1818) - channel catfish
Noturus gyrinus (Mitchill, 1817) - tadpole madtom
Noturus nocturnus Jordan and Gilbert, 1886 - freckled madtom
Noturus phaeus Taylor, 1969 - brown madtom [record of *funebri* may be this species]
Pylodictis olivaris (Rafinesque, 1818) - flathead catfish
 Ariidae - sea catfishes {2}
Ariopsis felis (Linnaeus, 1766) - hardhead catfish
Bagre marinus (Mitchill, 1815) - gafftopsail catfish
 Esocidae - pikes {2}
Esox americanus Gmelin, 1789 - redfin pickerel
Esox niger Lesueur, 1818 - chain pickerel
 Synodontidae - lizardfishes {1}
Synodus foetens (Linnaeus, 1766) - inshore lizardfish
 Aphredoderidae - pirate perch {1}
Aphredoderus sayanus (Gilliams, 1824) - pirate perch
 Mugilidae - mullets {2}
Mugil cephalus Linnaeus, 1758 - striped mullet
Mugil curema Valenciennes, 1836 - white mullet

Atherinopsidae - New World silversides {3}
Labidesthes sicculus (Cope, 1865) - brook silverside
Membras martinica (Valenciennes, 1835) - rough silverside
Menidia beryllina (Cope, 1867) - inland silverside

Belonidae - needlefishes {1}
Strongylura marina (Walbaum, 1792) - Atlantic needlefish

Fundulidae - topminnows {9}
Adinia xenica (Jordan and Gilbert, 1882) - diamond killifish
Fundulus blairae Wiley and Hall, 1975 - western starhead topminnow
Fundulus chrysotus (Gunther, 1866) - golden topminnow
Fundulus grandis Baird and Girard, 1853 - Gulf killifish
Fundulus notatus (Rafinesque, 1820) - blackstripe topminnow
Fundulus olivaceus (Storer, 1845) - blackspotted topminnow
Fundulus pulvereus (Evermann, 1892) - bayou killifish
Fundulus similis (Bird and Girard, 1853) - longnose killifish
Lucania parva (Baird and Girard, 1855) - rainwater killifish

Poeciliidae - livebearers {3}
Gambusia affinis (Baird and Girard, 1853) - western mosquitofish
Heterandria formosa Agassiz, 1855 - least killifish [Introduced?]
Poecilia latipinna (Lesueur, 1821) - sailfin molly

Cyprinodontidae - pupfishes {1}
Cyprinodon variegatus Lacepede, 1803 - sheepshead minnow

Syngnathidae - pipefishes {3}
Syngnathus affinis Gunther, 1870 - Texas pipefish [unverified literature record]
Syngnathus louisianae Gunther, 1870 - chain pipefish
Syngnathus scovelli (Evermann and Kendall, 1896) - Gulf pipefish

Triglidae - searobins {1}
Prionotus tribulus Cuvier, 1829 - bighead searobin

Moronidae - temperate basses {3}
Morone chrysops (Rafinesque, 1820) - white bass [Introduced]
Morone mississippiensis Jordan and Evermann, 1887 - yellow bass
Morone saxatilis (Walbaum, 1792) - striped bass [Introduced]

Centrarchidae - sunfishes {14}
Centrarchus macropterus (Lacepede, 1801) - flier
Lepomis auratus (Linnaeus, 1758) - redbreast sunfish [Introduced]
Lepomis cyanellus Rafinesque, 1819 - green sunfish
Lepomis gulosus (Cuvier, 1829) - warmouth
Lepomis humilis (Girard, 1858) - orangespotted sunfish
Lepomis macrochirus Rafinesque, 1819 - bluegill
Lepomis marginatus (Holbrook, 1855) - dollar sunfish
Lepomis megalotis (Rafinesque, 1820) - longear sunfish
Lepomis microlophus (Gunther, 1859) - redear sunfish
Lepomis miniatus Jordan, 1877 - redspotted sunfish
Lepomis symmetricus Forbes, 1883 - bantam sunfish
Micropterus salmoides (Lacepede, 1802) - largemouth bass
Micropterus punctulatus (Rafinesque, 1819) - spotted bass

Pomoxis annularis Rafinesque, 1818 - white crappie
Pomoxis nigromaculatus (Lesueur, 1829) - black crappie
 Percidae - perches {13}
Ammocrypta vivax Hay, 1882 - scaly sand darter
Etheostoma asprigene (Forbes, 1877) - mud darter [may represent undescribed species]
Etheostoma chlorosoma (Hay, 1880) - bluntnose darter
Etheostoma collettei Birdsong and Knapp, 1969 - creole darter
Etheostoma gracile (Girard, 1859) - slough darter
Etheostoma histrio Jordan and Gilbert, 1887 - harlequin darter
Etheostoma parvipinne Gilbert and Swain, 1887 - goldstripe darter [?]
Etheostoma proeliare (Hay, 1880) - cypress darter
Etheostoma whipplei (Girard, 1859) - redbfin darter
Percina macrolepida Stevenson, 1971 - bigscale logperch
Percina maculata (Girard, 1859) - blackside darter
Percina sciera (Swain, 1883) - dusky darter
Percina shumardi (Girard, 1859) - river darter [literature record]
 Carangidae - jacks {3}
Caranx hippos (Linnaeus, 1766) - crevalle jack
Oligoplites saurus (Bloch and Schneider, 1801) - leatherjacket
Selene setapinnis (Mitchill, 1815) - Atlantic moonfish
 Gerreidae - mojarras [?] {1}
Eucinostomus argenteus Baird and Girard, 1855 - spotfin mojarra
 Sparidae - porgies {2}
Archosargus probatocephalus (Walbaum, 1792) - sheepshead
Lagodon rhomboides (Linnaeus, 1766) - pinfish
 Polynemidae - threadfins {1}
Polydactylus octonemus (Girard, 1858) - Atlantic threadfin
 Sciaenidae - drums and croakers {9}
Bairdiella chrysoura (Lacepede, 1802) - silver perch
Cynoscion arenarius Ginsburg, 1930 - sand seatrout
Cynoscion nebulosus (Cuvier, 1830) - spotted seatrout
Leiostomus xanthurus Lacepede, 1802 - spot
Menticirrhus americanus (Linnaeus, 1758) - southern kingfish
Micropogonias undulatus (Linnaeus, 1766) - Atlantic croaker
Pogonias cromis (Linnaeus, 1766) - black drum
Sciaenops ocellatus (Linnaeus, 1766) - red drum
Stellifer lanceolatus (Holbrook, 1855) - star drum
 Elassomatidae - pygmy sunfish {1}
Elassoma zonatum Jordan, 1877 - banded pygmy sunfish
 Uranoscopidae - stargazers {1}
Astroscopus y-graecum (Cuvier, 1829) - southern stargazer
 Gobiesocidae - clingfishes {1}
Gobiesox strumosus Cope, 1870 - skilletfish
 Eleotridae - sleepers {1}
Dormitator maculatus (Bloch, 1792) - fat sleeper
 Gobiidae - gobies {5}

<i>Ctenogobius boleosoma</i> (Jordan and Gilbert, 1882) - darter goby	
<i>Ctenogobius shufeldti</i> (Jordan and Eigenmann, 1887) - freshwater goby	
<i>Gobiosoma bosc</i> (Lacepede, 1800) - naked goby	
<i>Microgobius gulosus</i> (Girard, 1858) - clown goby	
<i>Microgobius thalassinus</i> (Jordan and Gilbert, 1883) - green goby	
Trichiuridae - cutlassfishes {1}	
<i>Trichiurus lepturus</i> Linnaeus, 1758 - Atlantic cutlassfish	
Scombridae - mackerels {1}	
<i>Scomberomorus maculatus</i> (Mitchill, 1815) - Spanish mackerel	
Paralichthyidae - sand flounders {3}	
<i>Citharichthys spilopterus</i> Gunther, 1862 - bay whiff	
<i>Etopus crossotus</i> Jordan and Gilbert, 1882 - fringed flounder	
<i>Paralichthys lethostigma</i> Jordan and Gilbert, 1884 - southern flounder	
Achiridae - American soles {2}	
<i>Achirus lineatus</i> (Linnaeus, 1758) - lined sole	
<i>Trinectes maculatus</i> (Bloch and Schneider, 1801) - hogchoker	
Cynoglossidae - tonguefishes {1}	
<i>Symphurus plagiusa</i> (Linnaeus, 1766) - blackcheek tonguefish	
Tetraodontidae - puffers {1}	
<i>Sphoeroides parvus</i> Shipp and Yerger, 1969 - least puffer	
Nomenclature and phylogenetic order follows Nelson, <i>et al.</i> 2004. Common and Scientific Names of Fishes from the United States, Canada, and Mexico, 6 th Edition. American Fisheries Society Special Publication 29. 386 pp. Exceptions are noted.	

Mussel Species

Table 14. Freshwater mussel species list for the Calcasieu River, Louisiana compiled by Vidrine 1993.

Scientific Name	Common Name
<i>Pyganodon grandis</i>	giant floater
<i>Strophitus subvexus</i>	southern creekmussel
<i>Amblema plicata</i>	threeridge
<i>Quadrula quadrula</i>	mapleleaf
<i>Quadrula mortoni</i>	western pimpleback
<i>Pleurobema riddelli</i>	Louisiana pigtoe
<i>Uniomerus declivus</i>	tapered pondhorn
<i>Glebula rotundata</i>	round pearlshell
<i>Lampsilis hydiana</i>	Louisiana fatmucket
<i>Leptodea fragilis</i>	fragile papershell
<i>Obliquaria reflexa</i>	threehorn wartyback
<i>Potamilus purpuratus</i>	bleufer
<i>Toxolasmus texasensis</i>	Texas lilliput
<i>Villosa lienosa</i>	little spectaclecase

<i>Utterbackia imbecillis</i>	paper pondshell
<i>Arcidens confragosus</i>	rock-pocketbook
<i>Plectomerus dombeyanus</i>	bankclimber
<i>Quadrula apiculata</i>	southern mapleleaf
<i>Tritogonia verrucosa</i>	pistolgrip
<i>Fusconaia askewi</i>	Texas pigtoe
<i>Uniomerus tetralasmus</i>	pondhorn
<i>Lampsilis satura</i>	plain pocketbook
<i>Lampsilis teres</i>	yellow sandshell
<i>Ligumia subrostrata</i>	pondmussel
<i>Obvaria jacksoniana</i>	southern hickorynut
<i>Toxolasmus parvus</i>	lilliput
<i>Truncilla donaciformis</i>	fawnsfoot

Threatened/Endangered/Exotic Species

No threatened or endangered fish species are found in the Calcasieu River basin. Endangered sea turtles (Loggerhead, Green, Atlantic Hawksbill, and Kemp's Ridley) can be found along the lower river in the ship channel. The following species are listed as species of conservation concern in LDWF's State Wildlife Action Plan (Lester et al. 2005):

Fish

Paddlefish, *Polyodon spathula*

Western Sand Darter, *Ammocrypta clara*

Bigscale Logperch, *Percina macrolepida*

Mussels

Sandbank Pocketbook, *Lampsilis satura*

Louisiana Pigtoe, *Pleurobema riddelli*

Southern Creekmussel, *Strophitus subvexus*

Crustaceans

Calcasieu Painted Crawfish, *Orconectes blacki*

Teche Painted Crawfish, *Orconectes hathawayi*

Old Prairie Crawfish, *Fallicambarus macneesei*

Reptiles

Alligator Snapping Turtle, *Macrochelys temminckii*

Mississippi Diamond-backed Terrapin, *Malaclemys terrapin pileata*

Exotic species observed in the Calcasieu River basin include grass carp, Asiatic clams, and occasional aquarium releases (pacu, Oscars).

WATER USE

Hunting

The Calcasieu River is utilized for waterfowl hunting. It is also used for access to private lands adjacent to the river for deer, hog, waterfowl, and small game hunters.

Fishing

The Calcasieu River is popular for both freshwater and saltwater recreational fishing. Spotted bass and bream (*Lepomis spp.*) are often targeted in the upper reaches of the river. Largemouth bass, catfishes, crappies, and freshwater drum are targeted in the middle portion. Spotted sea trout, southern flounder, and red drum are targeted species on the lower portion. Limited commercial fishing occurs on the middle and lower sections.

Trapping

The Calcasieu River was historically used for trapping. However this use has declined.

Skiing

The middle Calcasieu River is a popular destination for recreational boaters, skiers, and jet ski enthusiasts.

Scuba Diving

The Calcasieu River is not generally used for scuba diving.

Swimming

The river is utilized for swimming along most of its length.

Irrigation

Water withdrawals in designated scenic stream areas are by permit only. State laws regarding surface water withdrawals apply on all other segments. The portion of the river within Allen Parish is utilized for crop irrigation, particularly during drought periods.

Navigation

The stretch of river from US Hwy. 171 to the Gulf of Mexico is utilized by commercial vessels for transport of materials.

REFERENCES

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- Lester, Gary D., S. G. Sorensen, P. L. Faulkner, C. S. Reid, and I. E. Maxit. 2005. Louisiana Comprehensive Wildlife Conservation Strategy. Louisiana Department of Wildlife and Fisheries. Baton Rouge. 455 pp.
- Louisiana Department of Environmental Quality. 2010. Louisiana Water Quality Inventory: Integrated Report (305(b)/303(d)). Water Quality Management Division, Planning and Assessment Section, Baton Rouge, LA. pp.
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APPENDIX
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Figure 3. Map of Louisiana waters with Calcasieu River basin delineated in green.

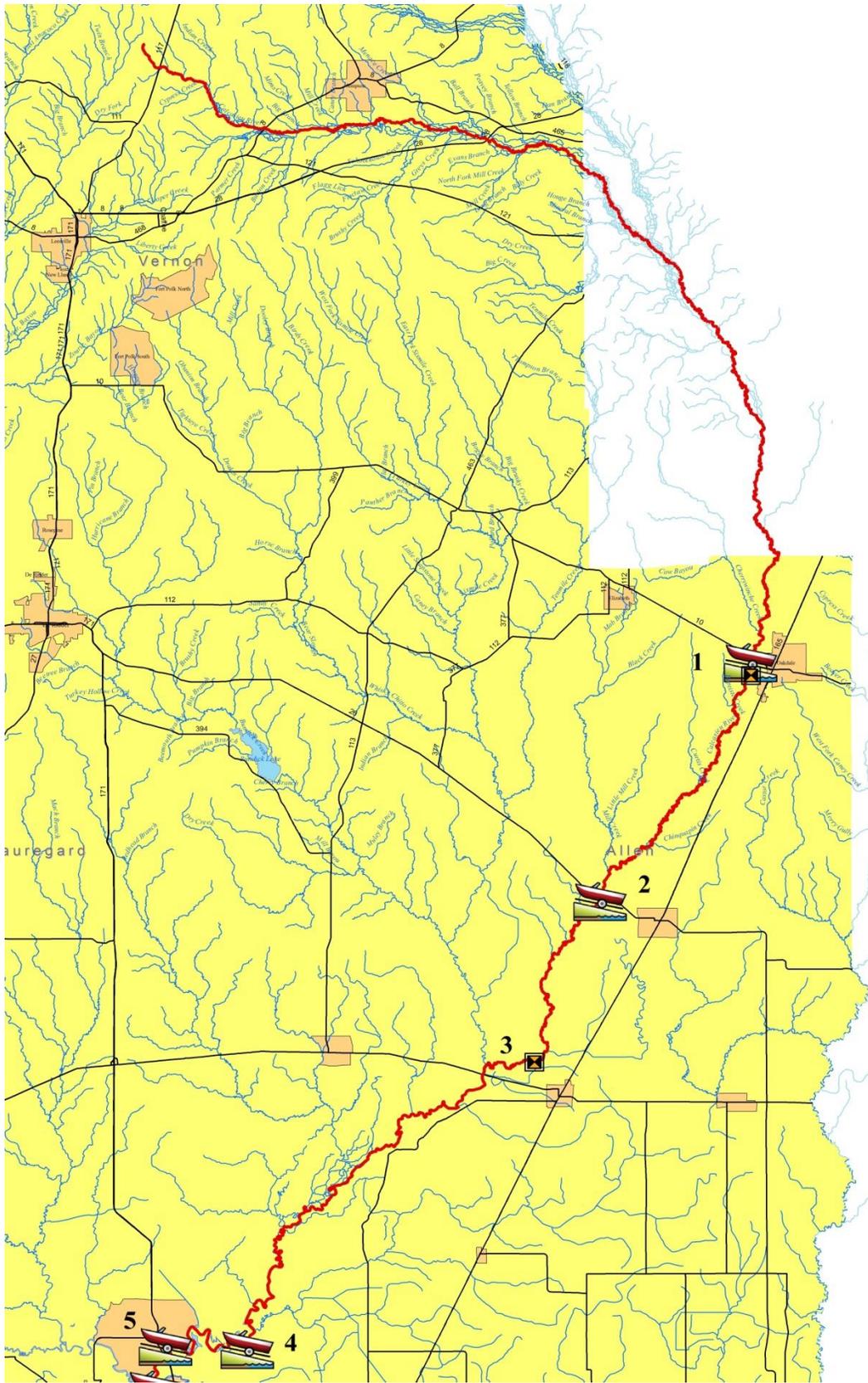


Figure 4. Map of upper Calcasieu River with public boat ramps and low-head dams.

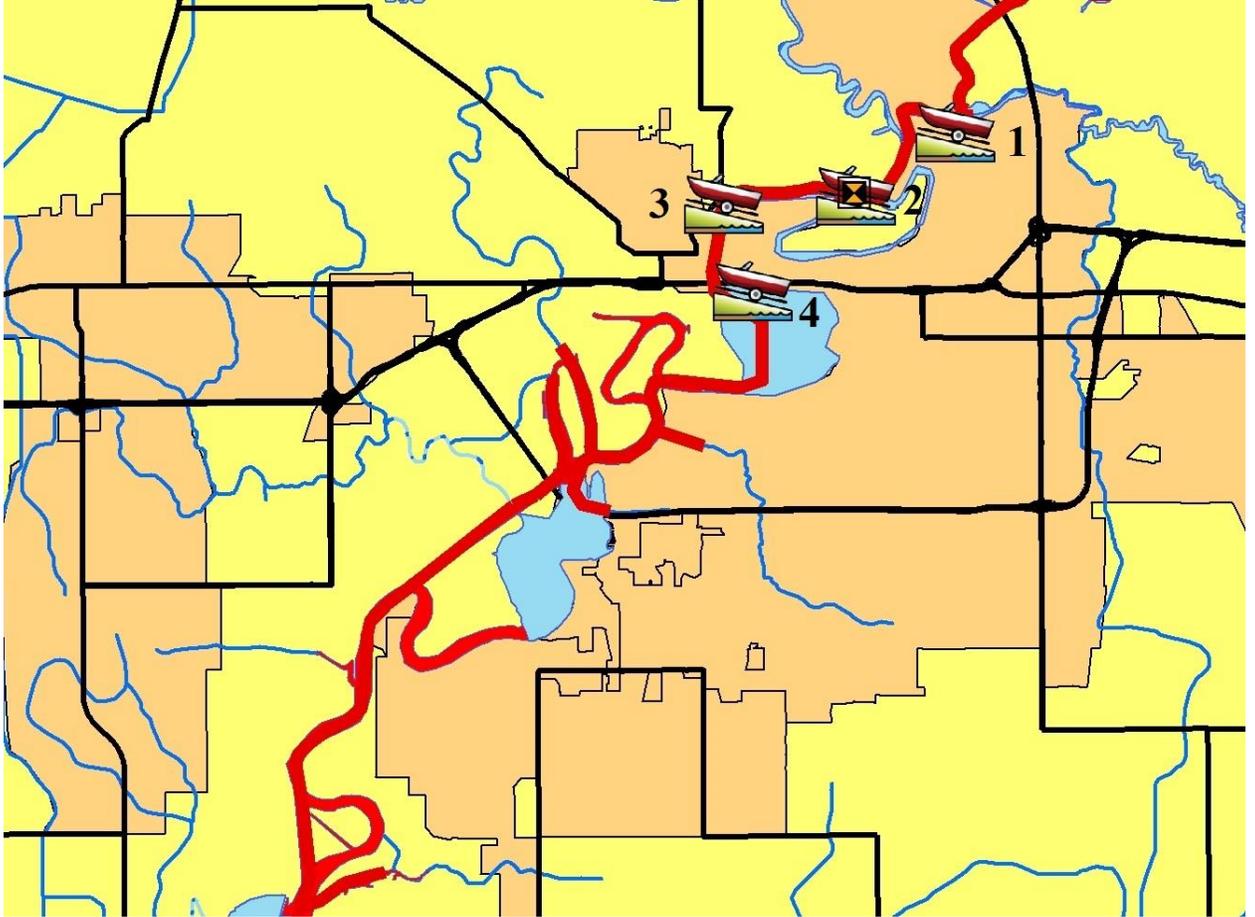


Figure 5. Map of middle Calcasieu River with public boat ramps and lowhead dams.



Figure 6. Map of lower Calcasieu River with public boat ramps and fishing pier.