

**Assessment of Armored Catfish Presence
in Bayou Lafourche and Lake Fields**

March 30, 2018

5/1/2018 – 4/30/2018



A Report of the:

Barataria-Terrebonne National Estuary Program

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Prepared for the:

Environmental Protection Agency's National Estuary Program

EPA Tracking Number: 2014-12 and 2018-14

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FINAL REPORT

FOR

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BTNEP Contract No. 18-16

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INTRODUCTION / BACKGROUND

Armored catfish, family Loricariidae, are native to South and Central America and are common in the aquarium trade. Unfortunately, several species of non-native armored catfish have become established in Mexico, Texas, and Florida (Ludlow and Walsh 1991; Nico and Martin 2001; Wakida-Kusunoki et al. 2007; Gibbs et al. 2013). Armored catfish burrow in banks and their burrows have increased local bank erosion rates (Nico et al. 2009; Hoover et al. 2004). Also, established non-native populations of armored catfish may have negative impacts on other species (Hoover et al. 2004; Capps and Flecker 2015). Anecdotal evidence and reports of armored catfish caught by recreational anglers indicates that armored catfish may be present in Louisiana waterways. For example, a photo of an armored catfish caught by a recreational angler in a waterway just north of Lake Fields was sent to Dr. Quenton Fontenot on 19 February 2017 (Figure 1). It may be possible that armored catfish can persist in south Louisiana waterways.

If armored catfish become established in Louisiana, then their geographic range should be limited by salinity and temperature. Species within the genus *Pterygoplichthys* can tolerate salinities up to 10 ppt (Capps et al. 2011). Although low temperature tolerance varies with the genus *Pterygoplichthys*, some species (i.e., *P. disjunctivus*) can tolerate temperatures down to 4°C (Gestring et al. 2010). There are gaps in our knowledge of armored catfish, but they can displace native species (Hoover et al. 2004). Wild armored catfish have not been documented in Louisiana and their distribution and abundance is unknown. Although eradication of an invasive species is extremely rare, the chances of eradicating or preventing the range expansion of an invasive species increases the earlier the invader is detected. Because of the negative ecological impacts armored catfish have caused in areas they have invaded (Capps 2015), the establishment of armored catfish in South Louisiana is unwelcome.

Therefore, this project was designed to determine if armored catfish are present in an area of Louisiana that recreational anglers have captured at least one individual in the past. We used electrofishing and gill nets to determine if armored catfish are present in the areas we sampled.



Figure 1. Photo of armored catfish caught by a recreational angler north of Lake Fields, LA, (Lafourche Parish) on 19 February 2017.

METHODS

Gill netting (August – September 2017) and electrofishing (June – July 2017; September – November 2017) were used to sample the study area for armored catfish. A fixed 9.7 km stretch of Bayou Folse and a 9.7 km stretch of Bayou Lafourche were divided into 0.8 km sections that were sequentially numbered and marked by GPS coordinates (Figures 1 and 2). A random number generator was used to select 20 sites from each waterway to sample. The GPS coordinate for each selected site served as the starting point to sample, and the waterway was electrofished for 600 seconds with the boat travelling in the direction of waterflow. Time was measured as the time that electricity was actually applied to the water column and measured by a time counter on the electrofishing gear. A total of 6.7 hours of electrofishing was applied to the waters of Bayou Folse and to the waters of Bayou Lafourche.

The same 20 sites that were electrofished in Bayou Folse were also sampled with gill nets in the summer (August – September). Three dual mesh (2.5 – 7.5 cm bar mesh) and three single mesh (3.5 cm mesh) nets were deployed at each site. Each net was secured to the bottom with cement weights and the top was secured with floats. Personnel that deployed the nets watched all of the nets the entire time they were deployed. The first net deployed was allowed to fish for one hour before being retrieved. The remaining nets were retrieved in the order they were deployed.

RESULTS AND DISCUSSION

A total of 6,335 individual fish from 32 species were collected via electrofishing (Table 1). A total of 332 individuals from 16 species were collected via gill netting (Table 2). Not a single armored catfish was collected by electrofishing or gill netting.

Although no armored catfish were collected by electrofishing or with gill netting, we cannot say they are not present. However, it is unlikely that if they are present, they are abundant. Because we did not collect any armored catfish, we could not determine their salinity tolerance. Hopefully the one individual armored catfish collected by a recreational angler in February of 2017 was an anomaly and armored catfish have not become established in our waterways.

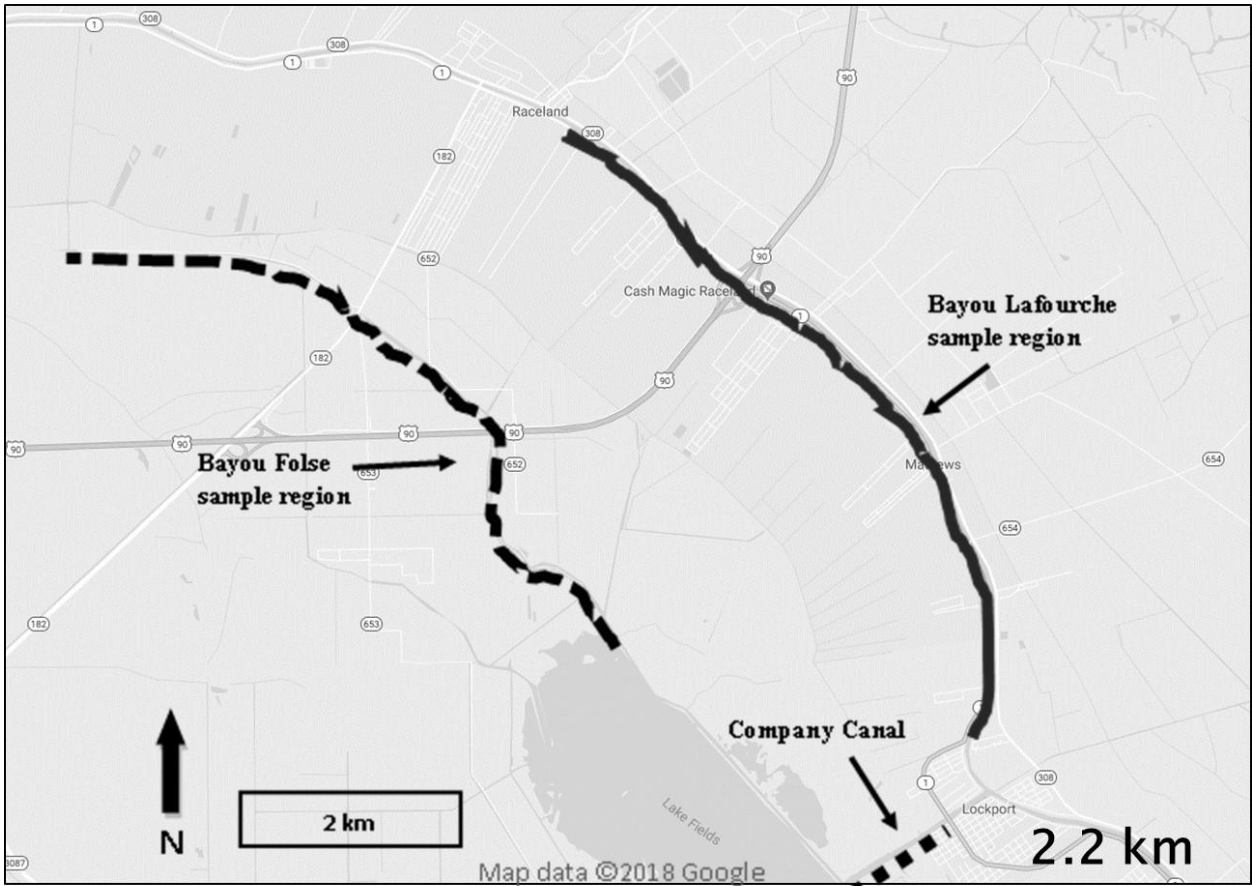


Figure 1. Map of the study region in Bayou Folse (bold long dashed line) and Bayou Lafourche (bold solid line). Each stretch that was sampled is 9.7 km long.

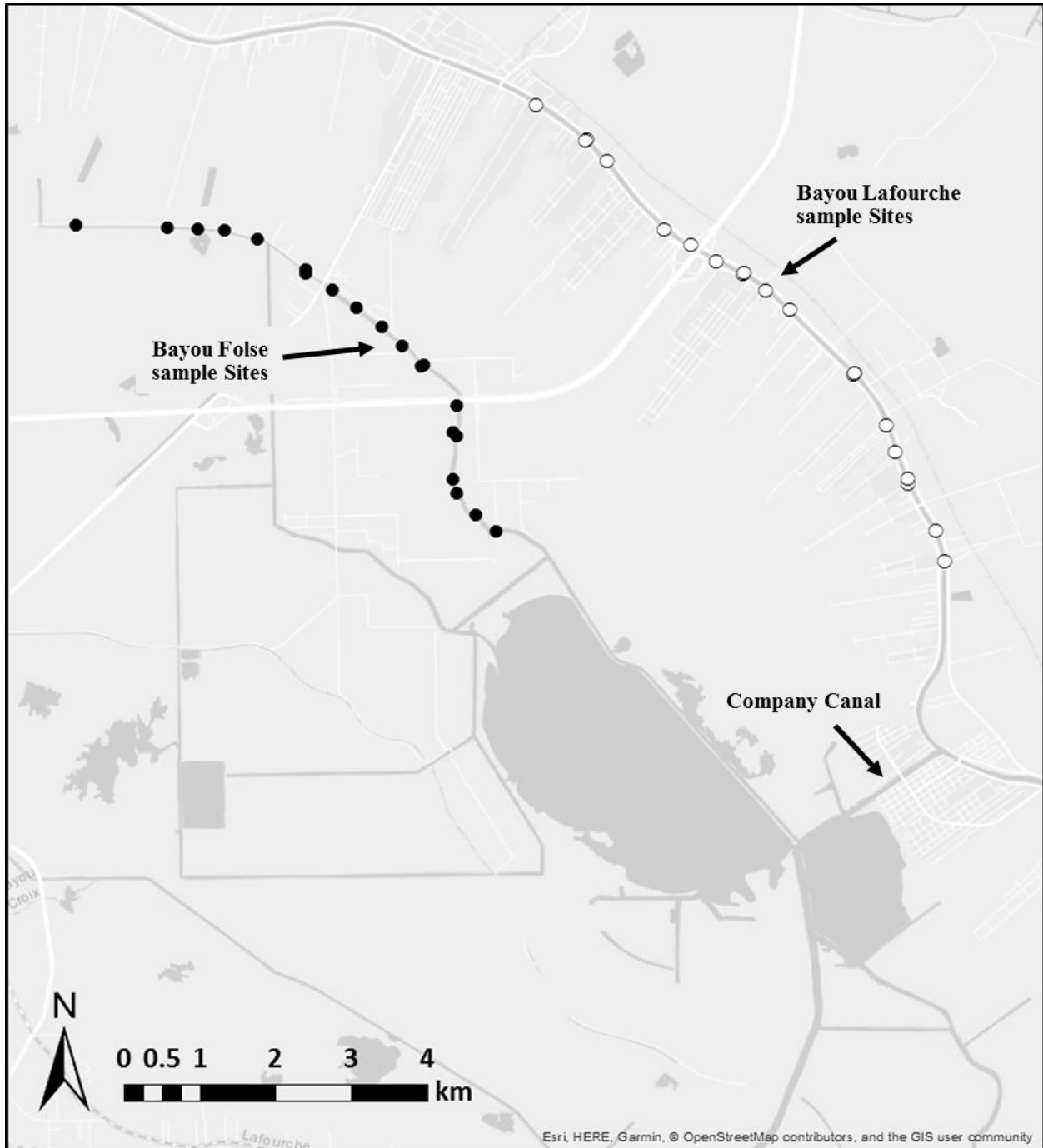


Figure 2. Location of sample sites in Bayou Folse and Bayou Lafourche that were sampled for armored catfish using gill nets and electrofishing.

Table 1. Total number of each finfish species collected in 2018 from Bayou Folse or Bayou Lafourche in the Summer and Fall seasons by electrofishing 20 sites per bayou per season for 600 seconds each. The species are listed in order of abundance for the Summer season in Bayou Folse.

Species	Folse		Lafourche	
	Summer	Fall	Summer	Fall
Gulf Menhaden	1,177	168	60	853
Bluegill Sunfish	297	685	128	99
Largemouth Bass	202	27	153	71
Redear Sunfish	195	81	62	41
Gizzard Shad	147	80	113	107
Striped Mullet	147	44	226	73
RedSpotted Sunfish	105	23	54	29
Bay Anchovy	80	1	8	19
Spotted Gar	51	78	86	27
Longear Sunfish	45	0	1	0
Black Crappie	35	0	1	9
Silverside	31	1	3	4
Ladyfish	16	0	2	0
Channel Catfish	14	1	7	8
Warmouth	12	8	10	9
Threadfin Shad	10	40	41	12
American Eel	5	1	1	0
Bowfin	4	4	1	2
Bigmouth Buffalo	3	1	1	0
Blue Catfish	3	2	13	2
Yellow Bullhead	3	0	0	0
Golden Shiner	2	13	16	10
Common Carp	1	3	3	8
Atlantic Needlefish	0	0	3	0
Flathead Catfish	0	0	1	0
Golden Topminnow	0	85	17	1
Green Sunfish	0	1	1	0
Longnose Gar	0	0	0	1
Pugnose Minnow	0	0	1	0
Skipjack	0	0	1	0
Smallmouth Buffalo	0	2	1	0
Yellow Bass	0	0	1	0
Total	2,585	1,349	1,016	1,385

Table 2. Total number of each species of fish collected with gill nets in Bayou Folsé during August and September of 2018. No armored catfish were collected.

Species	Common Name	# Collected
<i>Ictalurus punctatus</i>	Channel Catfish	166
<i>Lepisosteus oculatus</i>	Spotted Gar	60
<i>Lepomis macrochirus</i>	Bluegill Sunfish	33
<i>Ictalurus furcatus</i>	Blue Catfish	30
<i>Lepomis microlophus</i>	Redear Sunfish	21
<i>Elops saurus</i>	Ladyfish	14
<i>Lepomis gulosus</i>	Warmouth	14
<i>Dorosoma cepedianum</i>	Gizzard Shad	13
<i>Micropterus salmoides</i>	Largemouth Bass	13
<i>Pomoxis nigromaculatus</i>	Black Crappie	6
<i>Cyprinus carpio</i>	Common Carp	3
<i>Lepomis miniatus</i>	Redspotted Sunfish	3
<i>Mugil cephalus</i>	Striped Mullet	2
<i>Notemigonus crysoleucas</i>	Golden Shiner	2
<i>Atractosteus spatula</i>	Alligator Gar	1
<i>Morone chrysops</i>	White Bass	1

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