

LOUISIANA DEPARTMENT OF WILDLIFE & FISHERIES



**OFFICE OF FISHERIES
INLAND FISHERIES SECTION**

PART VI -B

WATERBODY MANAGEMENT PLAN SERIES

RACCOURCI OLD RIVER

**WATERBODY EVALUATION &
RECOMMENDATIONS**

CHRONOLOGY

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Table of Contents

WATERBODY EVALUATION	4
STRATEGY STATEMENT	4
<i>Recreational</i>	4
<i>Commercial</i>	4
<i>Species of Special Concern</i>	4
EXISTING HARVEST REGULATIONS	4
<i>Recreational</i>	4
<i>Commercial</i>	4
<i>Species of Special Concern</i>	4
SPECIES EVALUATION	4
<i>Recreational</i>	4
<i>Genetics</i>	8
<i>Stockings</i>	8
<i>Crappie</i>	8
<i>Forage</i>	10
<i>Commercial</i>	10
<i>Aquatic Invasive Species</i>	11
HABITAT EVALUATION	11
<i>Aquatic Vegetation</i>	11
<i>Water Quality</i>	11
<i>Substrate</i>	11
CONDITION IMBALANCE / PROBLEM	12
CORRECTIVE ACTION NEEDED	12
RECOMMENDATIONS	12

WATERBODY EVALUATION

STRATEGY STATEMENT

Recreational

Recreational species are managed to provide a sustainable population while providing anglers the opportunity to catch or harvest numbers of fish.

Commercial

Commercial species of fish are managed to provide a sustainable population.

Species of Special Concern

Species of special concern are managed to ensure sustaining populations.

EXISTING HARVEST REGULATIONS

Recreational

Statewide regulations are in effect for all species. The current recreational fishing regulations may be viewed at the following link: <http://www.wlf.louisiana.gov/fishing/regulations>

Commercial

Statewide regulations are in effect for all species. The current commercial fishing regulations may be viewed at the following link: <http://www.wlf.louisiana.gov/fishing/regulations>

Species of Special Concern

Paddlefish (*Polyodon spathula*), Pallid sturgeon (*Scaphirhynchus albus*) and shovelnose sturgeon (*Scaphirhynchus platyrhynchus*) two federally threatened and endangered species inhabit the reach of the Mississippi River near the connectivity of Raccourci Old River. Gulf pipefish (*Syngnathus scovelli*) is listed as a species of concern in the Louisiana Comprehensive Wildlife Action Plan.

SPECIES EVALUATION

Recreational

Largemouth Bass

Relative abundance, relative weight and size structure indices-

Electrofishing in Old River is conducted in the fall when water levels are at their lowest. Figure 1 represents the catch-per-unit-of-effort (CPUE = bass per hour) of largemouth bass (*Micropterus salmoides*) since 2007 along with water levels during each sampling event. The 2010 electrofishing results were the highest on record, whereas, high water levels in 2009 resulted in the lowest CPUE since standardized sampling was initiated.

Relative weight (Wr) is the ratio of a fish's weight to the weight of a "standard" fish of the same length. The index is calculated by dividing the weight of a fish by the standard weight for its length, and multiplying the quotient by 100. Largemouth bass Wr below 80 indicate a potential problem with forage availability. Relative weights for largemouth bass are determined from fall electrofishing results. Figure 2 indicates weight has generally remained at a healthy level of above 90 since 2007.

Proportional stock density (PSD) and relative stock density (RSD) are indices used to numerically describe length-frequency data. Proportional stock density compares the number of fish of quality-size (greater than 12 inches for largemouth bass) to the number of bass of stock-size (8 inches in length). The PSD is expressed as a percent. A fish population with a high PSD consists mainly of larger individuals, whereas a population with a low PSD consists mainly of smaller fish. For example, Figure 3 below indicates a PSD of 57 for 2011. The number indicates that 57% of the bass stock (fish over 8 inches) in the sample was at least 12 inches or longer.

$$\text{PSD} = \frac{\text{Number of bass} > 12 \text{ inches}}{\text{Number of bass} > 8 \text{ inches}} \times 100$$

Relative stock density (RSD) is the proportion of largemouth bass in a stock (fish over 8 inches) that are 15 inches (preferred-size) or longer.

$$\text{RSD} = \frac{\text{Number of bass} > 15 \text{ inches}}{\text{Number of bass} > 8 \text{ inches}} \times 100$$

Although the highest in the overall CPUE's was in 2010, size-structure indices were at their lowest in the proportion of quality-size fish and second lowest for preferred-size fish for that year (Figure 3). Length distributions from all years of fall electrofishing data combined show that there are more substock size fish (<8 inches) present in 2007 and 2010 than in other years (Figure 4). Length distribution results also show that there were more quality-size fish (>12 inches) present in 2010, 2011 and 2012 samples.

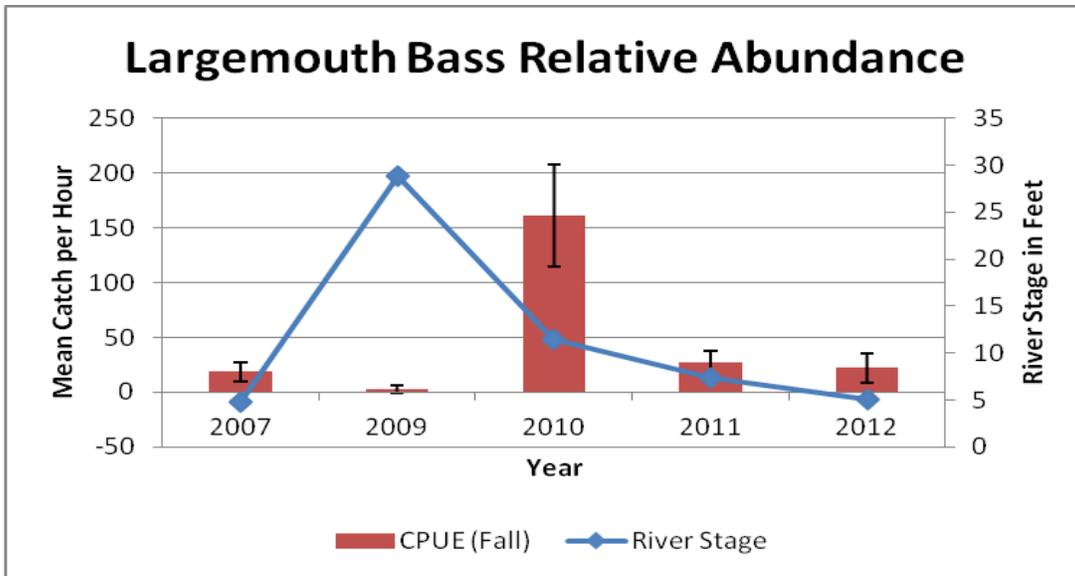


Figure 1. The mean CPUE in fall electrofishing catch results number per hour for largemouth bass in Raccourci Old River, LA, from 2007 to 2012. Error bars represent 95% confidence limits of the mean CPUE. Values for n by year: n=14(2007), n=4(2009), n=226(2010), n=40(2011), n=33(2012).

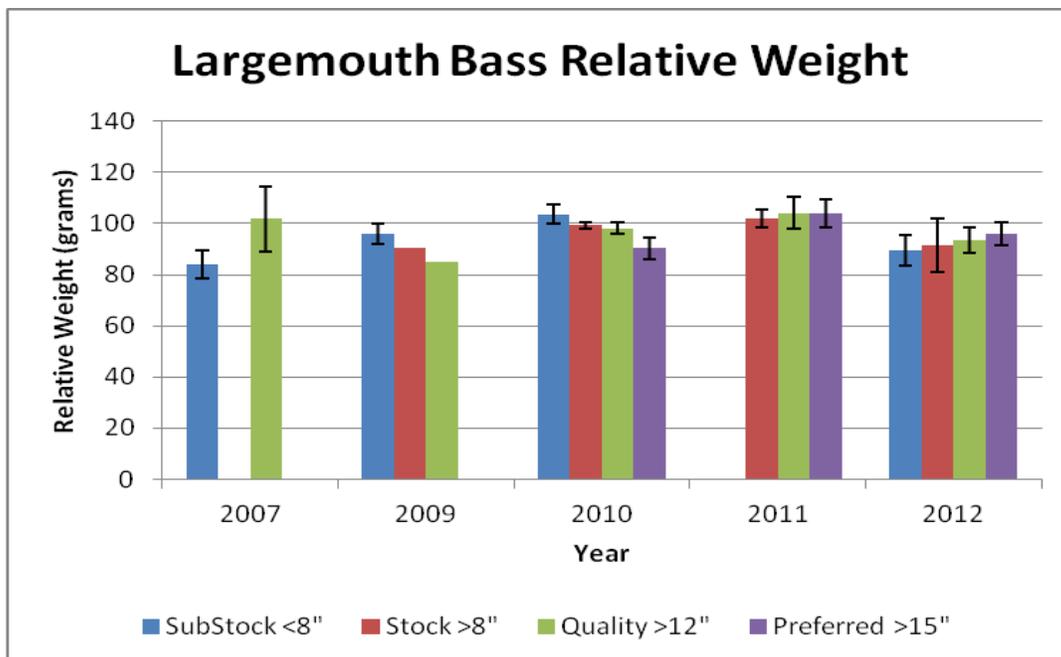


Figure 2. Mean relative weights (\pm 95% CI) for largemouth bass collected in fall electrofishing samples from Raccourci Old River, LA, from 2007 to 2012. Error bars represent 95% confidence limits of the mean relative weights. Values for n by year: n=14(2007), n=4(2009), n=241(2010), n=40(2011), n=33(2012).

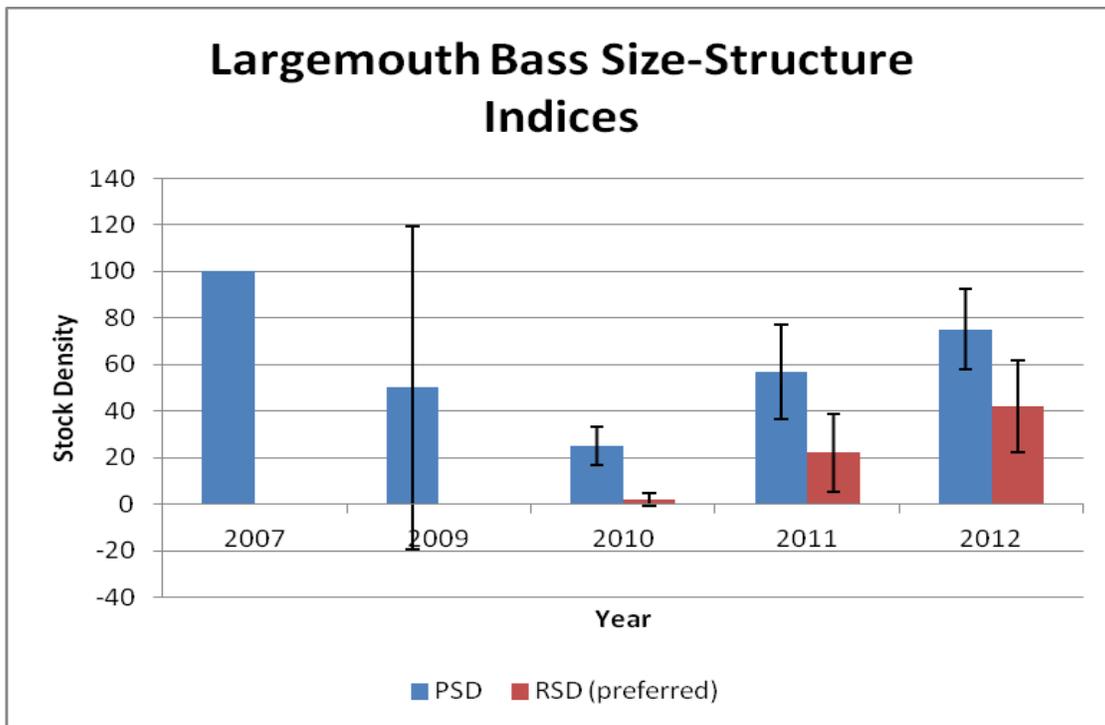


Figure 3. The mean size-structure indices (PSD and RSDp) for largemouth bass from fall electrofishing results in Raccourci Old River, LA, from 2007 to 2012. Error bars represent 95% confidence limits of the mean size-structure indices.

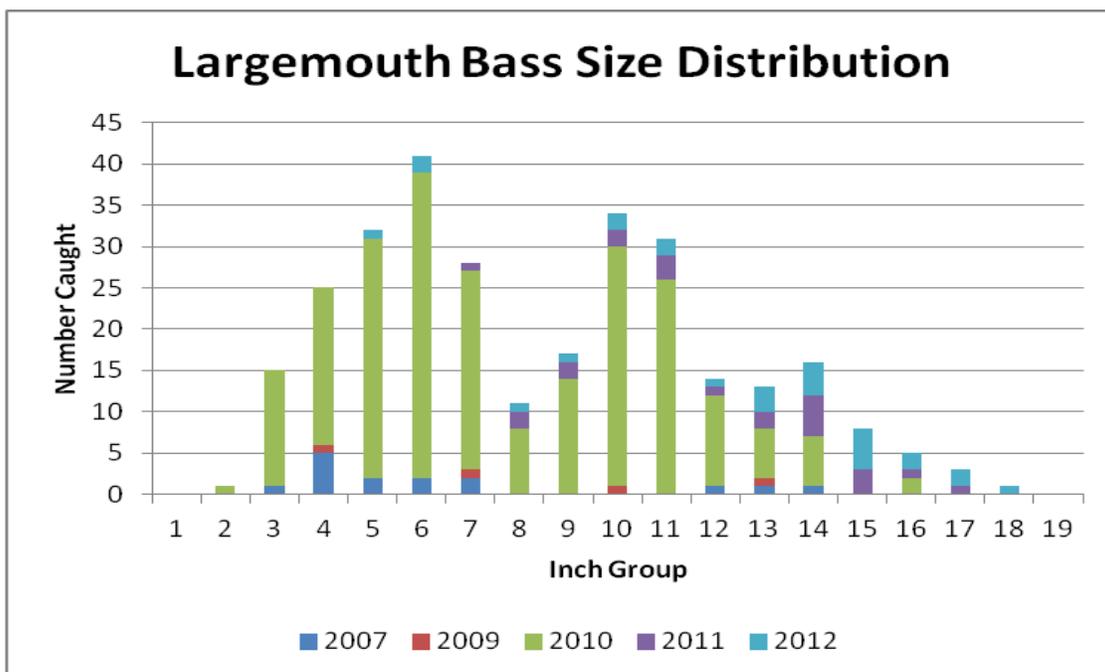


Figure 4. The size distribution (length frequencies) for largemouth bass from fall electrofishing results in Raccourci Old River, LA, from 2007 to 2012. N=332.

Genetics

Largemouth bass have not been tested in Raccourci Old River for the Florida allele since stocking efforts began. In 1992, 42 bass were tested as pure northern strain. Since it is an open system, it is not recommended for the continued stocking of Florida bass.

Stockings

As shown in Table 1, Raccourci Old River has been stocked with 104,902 Florida largemouth bass and 71,781 hybrid striped bass since 2007.

Table 1. Stocking history of Raccourci Old River, LA from 2007 – 2009.

YEAR	FLORIDA LARGEMOUTH BASS (fingerlings)	FLORIDA LARGEMOUTH BASS (phase II)	HYBRID STRIPED BASS
2007	32,156	-	-
2008	41,446	-	-
2009	30,582	718	71,781
Total	104,184	718	71,781

Crappie

Both black and white crappies (*Pomoxis nigromaculatus* and *P. annularis*) are present in the lake. Black crappies are far more prevalent in the lake than white crappie. Fall lead net catches for 2010 and 2011 were 3.2 and 2.5 fish per net hour, respectively, and 2012 catch was far less at 0.07 fish per hour (Figure 5). Fall lead net samples indicate an abundance of stock-(> 5 inches), quality-(> 6 inches), and preferred-size (> 8 inches) fish, with a majority of fish caught being in the 8 inch and 9 inch groups (Figure 6).

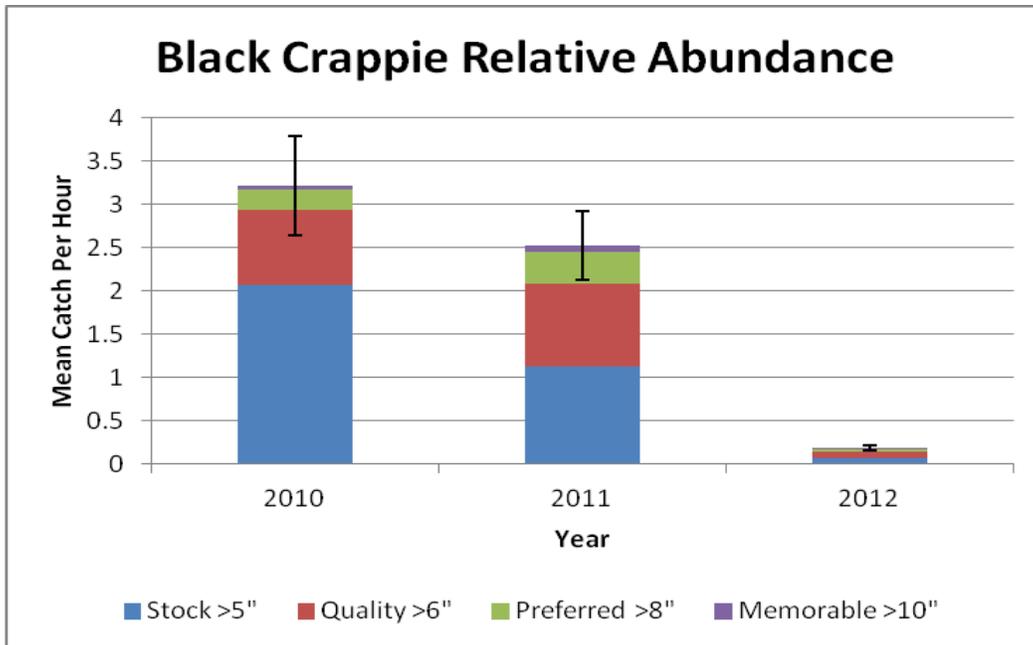


Figure 5. The mean CPUE (\pm 95% CI) for stock-, quality-, and preferred-size black crappie from lead net catch results for 2010 to 2012 from Raccourci Old River, LA. Error bars represent 95% confidence limits of the mean CPUE. Values for n by year: n=776(2010), n=949(2011), n=103(2012).

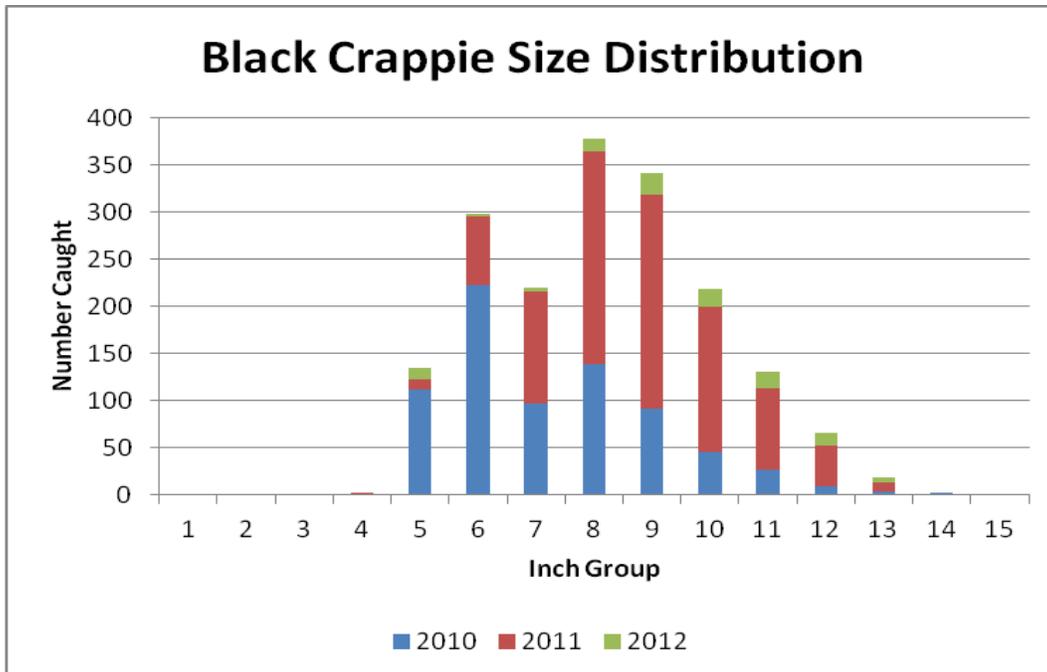


Figure 6. The size distribution (length frequencies) for black crappie from lead net catch results in Raccourci Old River, LA, from 2010 to 2012. N = 1,828.

Forage

Forage availability is typically measured directly through electrofishing and shoreline seine sampling and indirectly through measurement of largemouth bass body condition or relative weight.

Forage in Raccourci Old River is comprised mainly of threadfin shad (*Dorosoma petenense*), bluegill, and gizzard shad (*Dorosoma cepedianum*). Forage composition in total numbers by species collected in fall electrofishing samples in 2012 are presented in Figure 6.

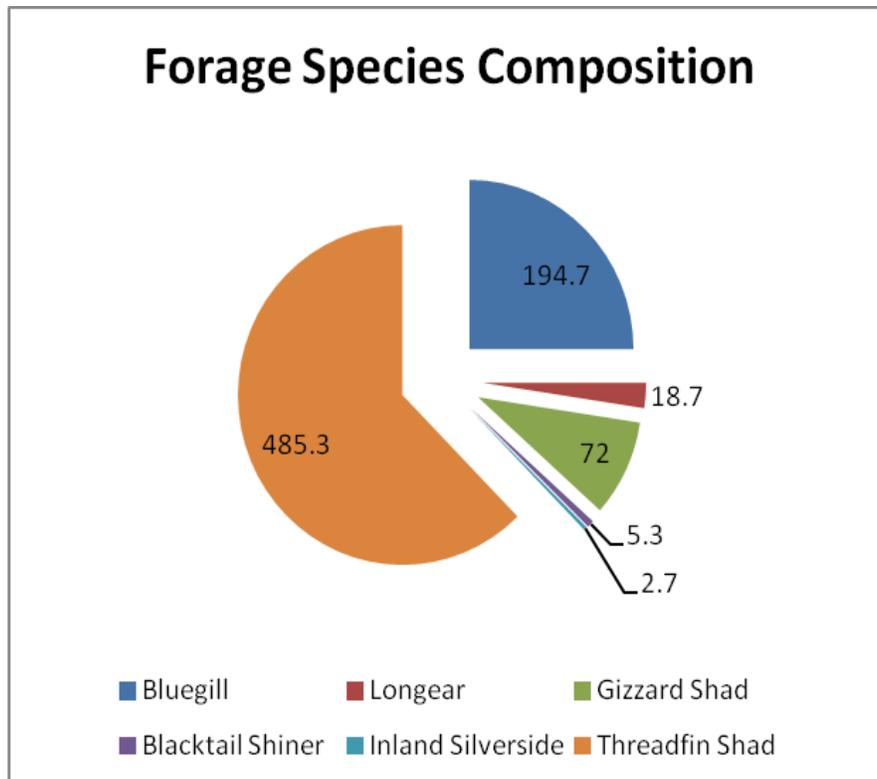


Figure 7. Forage composition in total numbers by species collected in fall electrofishing samples for 2012 from Raccourci Old River, LA.

Commercial

Currently, commercial fish species are sampled by the use of gill nets. Bowfin, carp species and smallmouth buffalo are the most represented species in terms of poundage captured in 2010 (Figure 8).

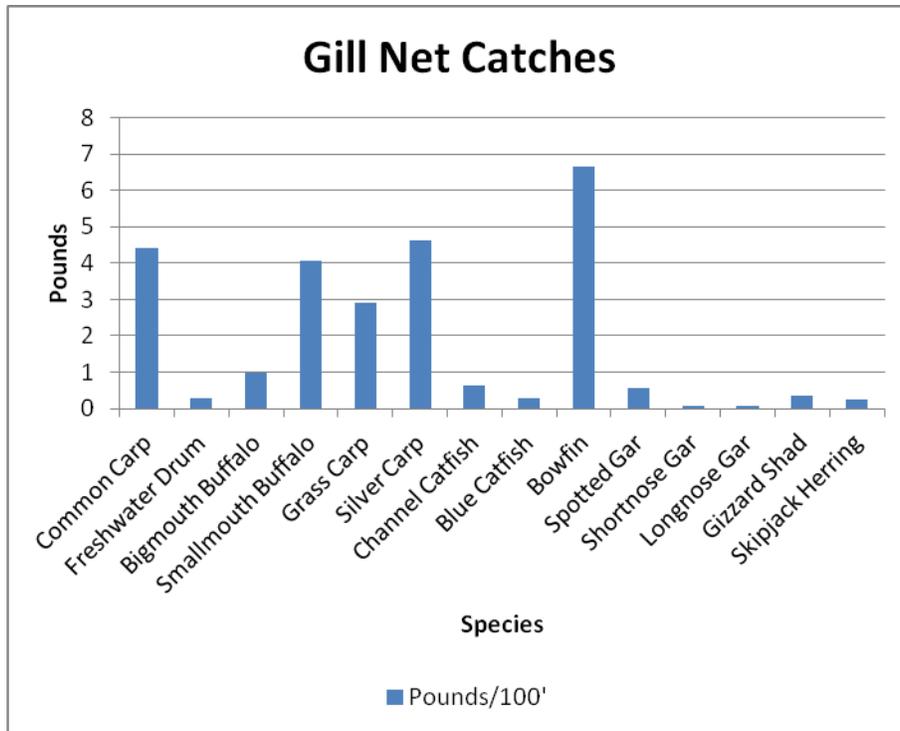


Figure 8. Gill net catch results per net night (100 feet of net fished for one night) in pounds for selected commercial fish species in 2010 from Raccourci Old River, LA.

Aquatic Invasive Species

Though their populations have not been monitored, common carp (*Cyprinus carpio*), and Asian carp species are commonly observed in the lake.

HABITAT EVALUATION

Aquatic Vegetation

Due to large seasonal water fluctuations, nuisance aquatic vegetation does not occur. There are no records of treatments or vegetation complaints.

Water Quality

The 2010 Water Quality Integrated Report from the Louisiana Department of Environmental Quality, Water Permits Division listed Old River having the presence of a non-native aquatic plant (water hyacinth – *Eichhornia crassipes*) as the lake's only impairment.

Substrate

Areas of the lake that are seasonally flooded are timbered and have tunica, Sharkey and Fausse clay soils (frequently flooded, very poorly drained) that are typical of the natural Mississippi River levee. This area contains low ridges and swampy treed sloughs formed by the frequent annual erosion pattern by the Mississippi River. The substrate of the permanently flooded portion of the lake is soft river sediment. Another significant component of the substrate is the numerous cypress trees adjacent to the tree line. This

combination of structure and substrate near the shore has contributed to the persistent existence of the sunfish and crappie populations that the lakes is known for producing.

CONDITION IMBALANCE / PROBLEM

Raccourci Old River is subject to infestations of nuisance aquatic organisms that are present in the Mississippi River, especially Asian carp and common carp. Because of the volume of river water that enters the lake annually, it is not feasible to exclude such infestations.

CORRECTIVE ACTION NEEDED

Control Asian carp and common carp populations.

RECOMMENDATIONS

1. Continue standardized sampling of fish populations to evaluate the condition of the stocks.
2. Continue to evaluate the presence and influence of invasive aquatic organisms.