LOUISIANA DEPARTMENT OF WILDLIFE & FISHERIES

OFFICE OF FISHERIES
INLAND FISHERIES SECTION

PART VI - B

WATERBODY MANAGEMENT PLAN SERIES

BLIND RIVER, LOUISIANA

WATERBODY EVALUATION &
RECOMMENDATIONS

CHRONOLOGY

DOCUMENT SCHEDULED TO BE UPDATED EVERY THREE YEARS

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WATERBODY EVALUATION

STRATEGY STATEMENT

Recreational

Recreational fish species are managed to maintain sustainable populations while providing anglers the opportunity to catch or harvest numbers of fish.

Commercial

Commercial fish species are managed to provide sustainable populations.

Species of Greatest Conservation Need

Species of special concern are managed toward viable, self-sustaining populations.

EXISTING HARVEST REGULATIONS

Recreational

All statewide regulations apply to game fish species, see link below:
http://www.wlf.louisiana.gov/regulations

Commercial

All statewide regulations apply to commercial fish species, see link below:
http://www.wlf.louisiana.gov/regulations

Species of Greatest Conservation Need

Paddlefish (*Polyodon spathula*) have a 30” max lower jaw fork length, 2 fish daily limit, fish cannot be retained alive; fish cannot be harvested by snagging methods. Pallid Sturgeon (*Scaphirhynchus albus*), Shovelnose Sturgeon (*Scaphirhynchus platorynchus*), and Gulf Sturgeon (*Acipenser oxyrinchus desotoi*): no legal harvest or possession.
http://www.wlf.louisiana.gov/regulations

SPECIES EVALUATION

Recreational

Largemouth Bass (*Micropterus nigricans*) are targeted for evaluation since they are a species indicative of the overall fish population due to their high position in the food chain and because they are highly sought after by anglers. Electrofishing is the best indicator of Largemouth Bass abundance and size distribution, with the exception of large fish.

Largemouth Bass Catch Per Unit Effort and Structural Indices

Spring electrofishing results indicate considerable variability of catch-per-unit-effort (CPUE) of Largemouth Bass following hurricanes Katrina, Gustav and Isaac, Ida, and Francine in 2005, 2008, 2012, 2021, and 2024 respectively (Figures 1 and 2). The storms created water quality conditions, such as low dissolved oxygen, that resulted in major fish kills. In the years following each of these named storms, the mean total CPUE for Largemouth Bass rebounded. It was most evident in the number of stock-size fish captured, as these new recruits were the most abundant. Successive years of stability with regard to water quality (e.g. no tropical storm influence) have allowed for several year classes of LMB to advance to larger size. The total CPUE for 2018-2020 and 2023-2024 exceeded the long-term averages for stock-, quality-, and preferred-size classes of Largemouth Bass as depicted in Figures 1 and 2, respectively.

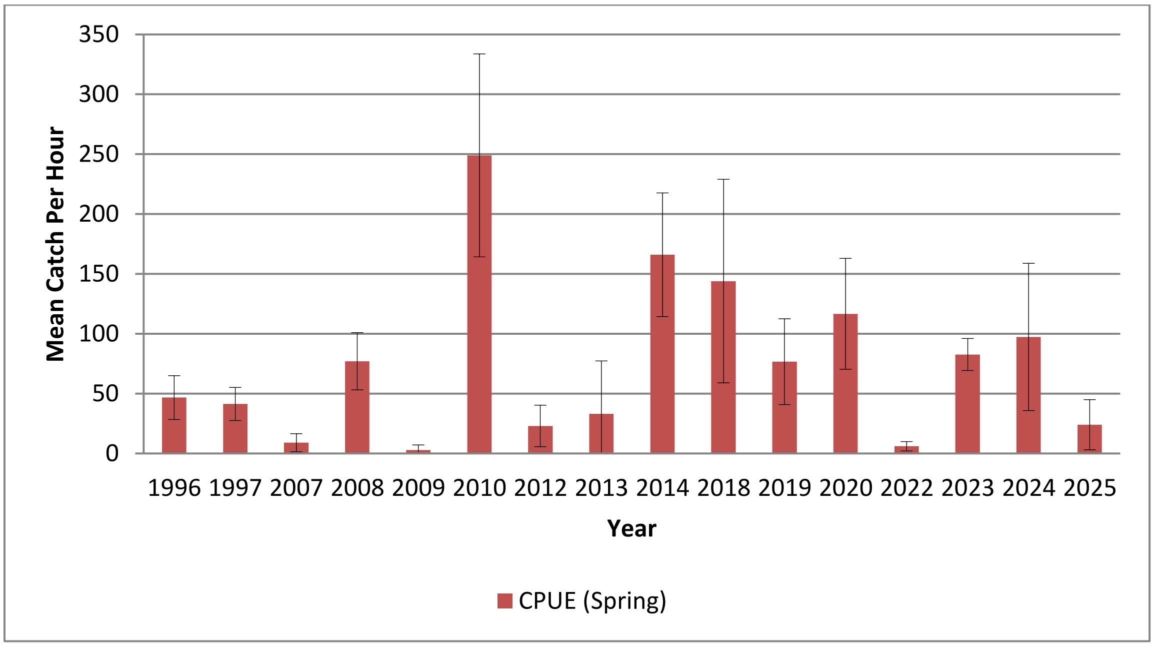

Figure 1. The mean CPUE number per hour for Largemouth Bass from Blind River in spring electrofishing results from 1996 to 2025. Error bars represent 95% confidence limits of the mean CPUE.

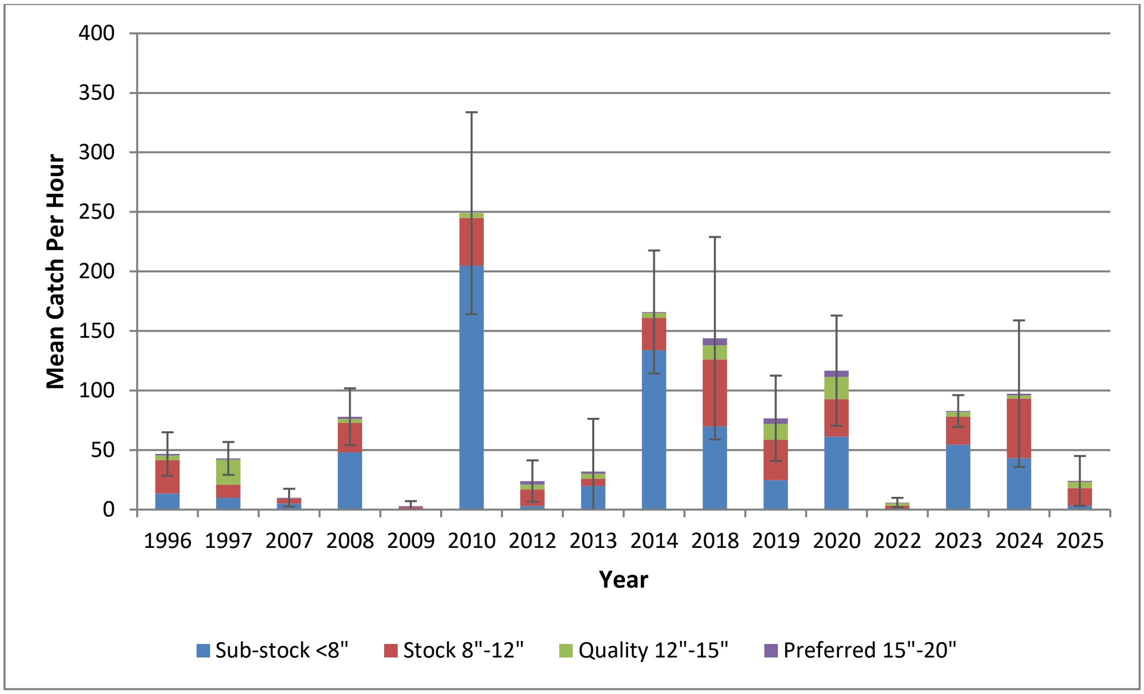

Figure 2. The mean CPUE for sub-stock- (<8”), stock- (8”-12”), quality- (12”-15”) and preferred-size (15”-20”) Largemouth Bass from Blind River for spring electrofishing results from 1996 to 2025. Error bars represent 95% confidence limits of the mean total CPUE.

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 52 for 1997. The number indicates that 52% 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 there were increases in the overall mean CPUE's following 2007, 2009 and 2013, and 2023 the size-structure indices for Largemouth Bass decreased in the proportion of both quality-size and preferred-size fish. The increase in mean CPUE during these years is due to the abundance of sub-stock size fish, which are not included in stock density calculations. Thus, from 2018 to 2020, after several years without a significant mortality event, an increase in mean CPUE was observed as well as an increasing trend in the proportion of both quality- and preferred-size fish (Figure 3). The size distribution comparison (length frequencies) from 2018 to 2025 spring electrofishing results shows that in 2018 there were more substock-sized fish inch groups present than in all other years. The size distribution comparison from 2023-2024 indicates a larger abundance of fish greater than 8 inches than in previous years, indicating that successive year classes of Largemouth Bass have survived in the absence of significant mortality events (Figure 4).

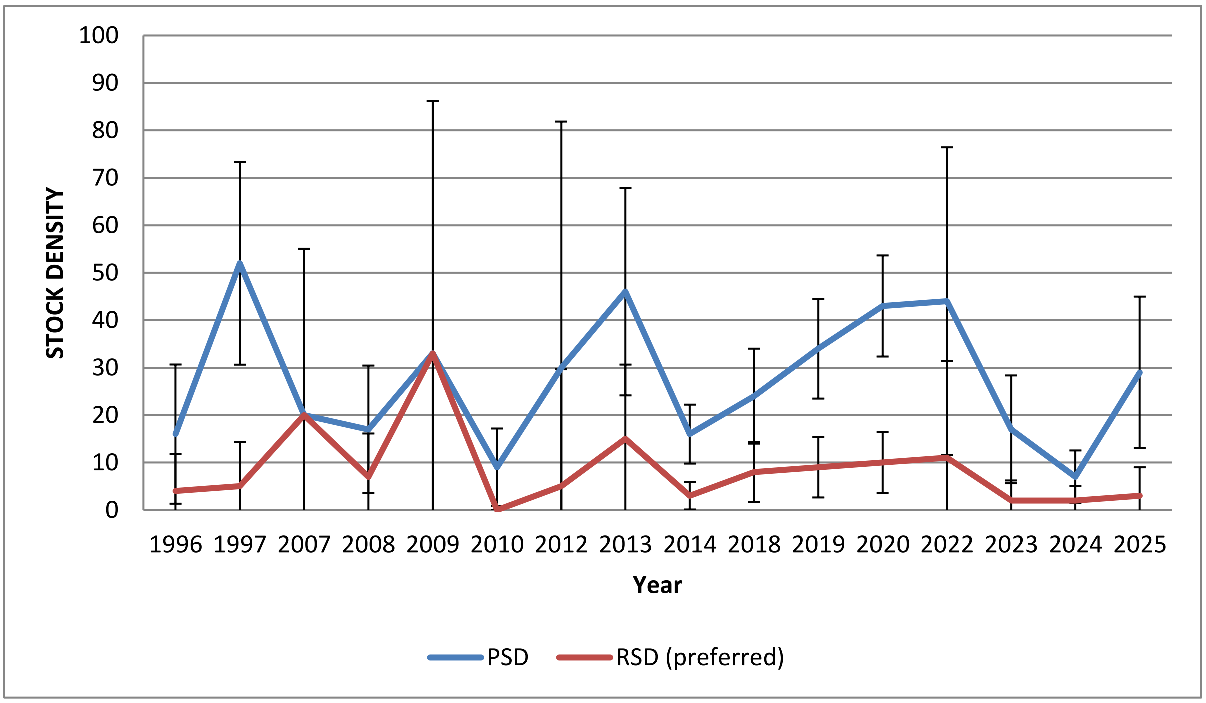

Figure 3. The mean size-structure indices (PSD and RSDp) for Largemouth Bass from spring electrofishing results on Blind River from 1996 to 2025. Error bars represent 95% confidence limits of the mean size-structure indices.

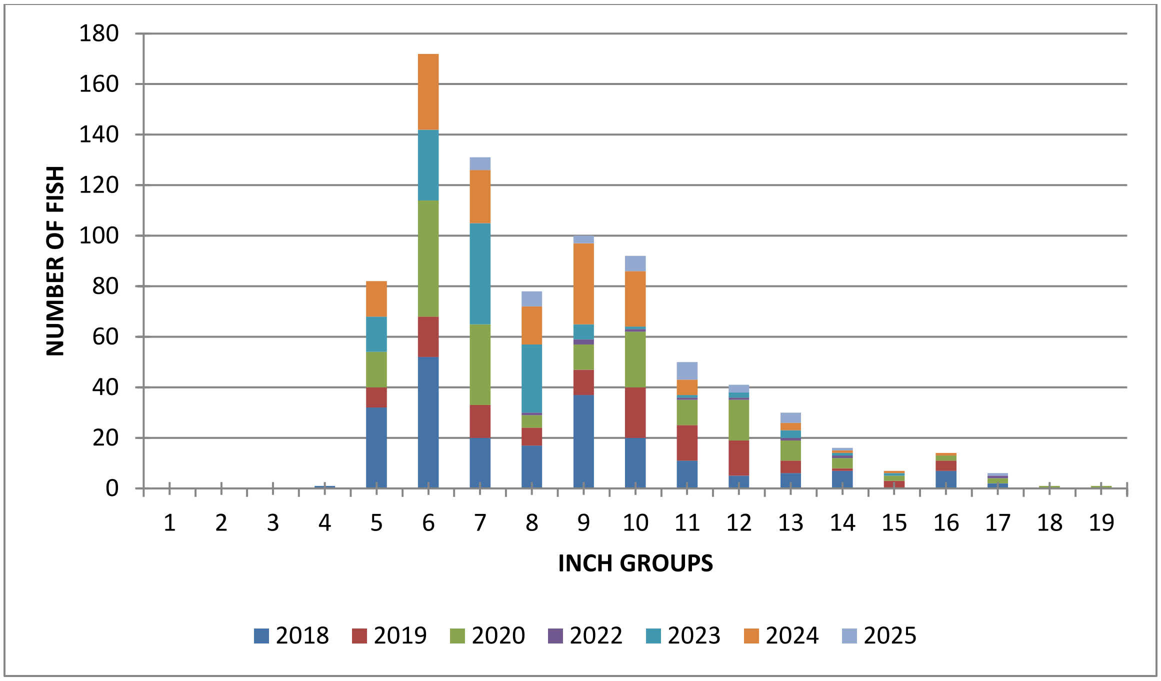

Figure 4. The size distribution (length frequencies) for Largemouth Bass from spring electrofishing results on Blind River from 2018 to 2025.

Largemouth Bass Stocking and Genetics

Over 439,000 Florida Bass (*M. salmoides*) fingerlings have been stocked into Blind River since 1995. 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 Bass should have become dominant in this coastal river system, when in fact this species did not even become established. Genetic testing conducted in 2010 indicated that less than 7% of the Black Bass (*Micropterus spp.*) sampled possessed Florida genetics (Table 1). Additionally, high CPUE's in 2010 (Figures 1 and 2), along with the genetic results, indicated that the remaining native Largemouth Bass population, although greatly reduced from pre-storm levels, recovered robustly and that any stocking efforts were unnecessary. The stocking of Florida Bass in the nearby Tangipahoa River showed a similar fate; the ineffectiveness to establish this genotype during post hurricane recovery. 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 CPUE's during the first two years of 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 1. Results of 2010 & 2018-2020 genetic testing for the Florida Bass gene on Blind River.

Year	Number of fish	% Northern	% Hybrid	% Florida
2010	206	93.7	5.8	0.5
2018	29	86.2	13.8	0
2019	27	88.9	11.1	0
2020	100	90	9	1

Table 2. Florida Bass stockings into Blind River from 1995 – 2011.

Florida Bass Stocking	
Year	Number of Fish
1995	27,000
1996	27,032
1997	9,800
1999	12,043
2000	14,244
2001	10,000
2002	10,546
2003	10,036
2004	10,013
2005	6,972
2006	75,248
2007	73,743
2008	76,901
2009	75,862
2011	3,350
TOTAL	442,790

Recreational / Other Species

Crappie, Catfish and Sunfish

Black and White Crappies (*Pomoxis nigromaculatus and P. annularis*) have both been observed but not monitored in the river, as well as Blue, Channel, and Flathead Catfishes (*Ictalurus furcatus*, *I. punctatus*, *Pylodictis olivaris*), Bluegill, Redear, Redspotted, Warmouth and Longear sunfishes (*Lepomis macrochirus*, *L. microlophus*, *L. miniatus*, *L. gulosus* and *L. megalotis* respectively).

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. 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 indicates a potential problem with forage availability. Relative weights of Largemouth Bass caught in the Blind River area ranged from 88 to 113 from 1997 to 2024 for all stock-size and larger fish, indicating an adequate forage base (Figure 5). The mean Wr of Largemouth Bass from 1997 to 2024 is approximately 97 (Figure 5). This high Wr suggests that there is ample forage available for bass production.

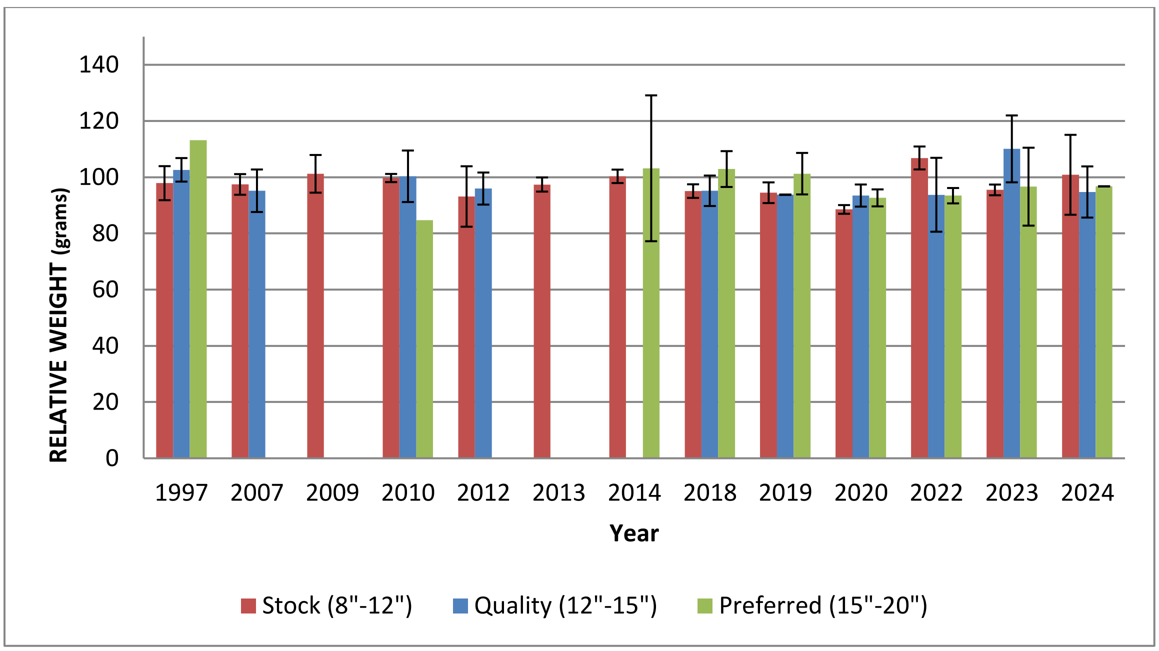

Figure 5. The mean relative weights for stock-, quality-, and preferred- size Largemouth Bass collected from Blind River in fall electrofishing samples from 1997 to 2024. Error bars represent 95% confidence limits of the mean relative weights.

Electrofishing samples from 2018-2023 showed that the bulk of available forage was Bluegill Sunfish. Other available forage species included Redear, Redspotted, Warmouth, and Longear sunfishes, along with Golden Shiner (*Notemigonus crysoleucas*), Gizzard Shad (*Dorosoma cepedianum*), Threadfin Shad (*Dorosoma petenense*), Striped Mullet (*Mugil cephalus*), Inland Silverside (*Menidia beryllina*), and Blackstripe Topminnow (*Fundulus notatus*) (Figure 6).

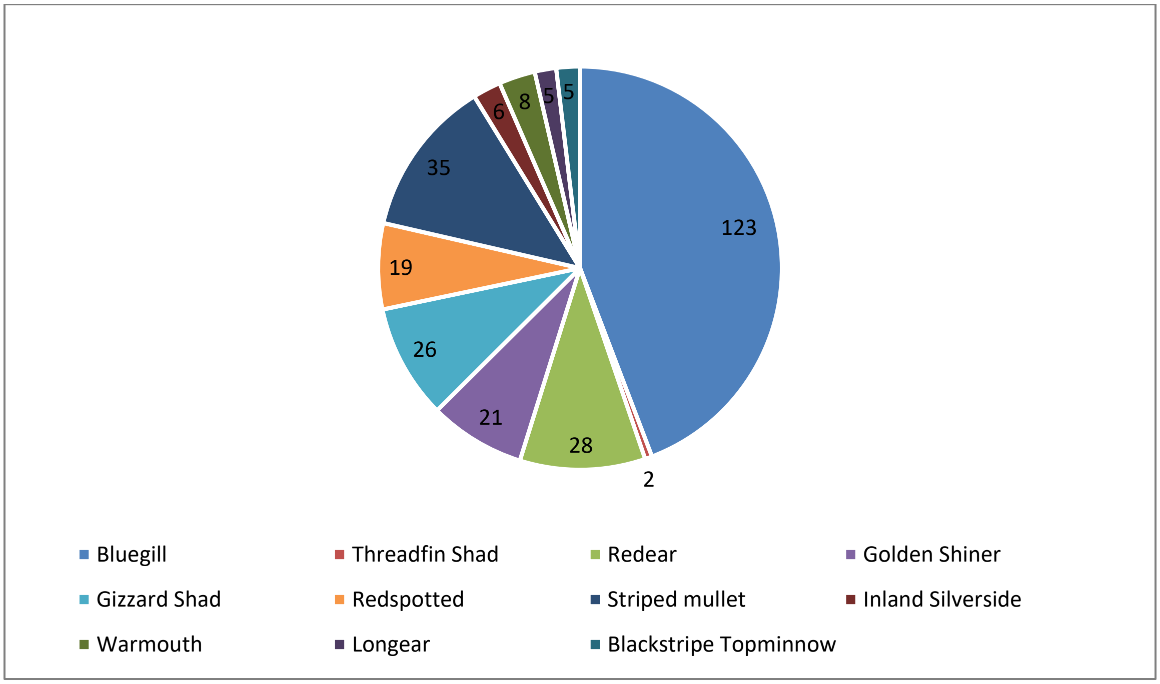

Figure 6. The mean CPUE for forage fish by species for Amite River from fall electrofishing results from 2018 to 2023.

Aquatic Invasive Species

Though their population has not been monitored, Common Carp (*Cyprinus carpio*) are commonly observed in the river.

Adult Silver Carp (*Hypophthalmichthys molitrix*) have been observed in the nearby Amite River. These fish may have been introduced via the Bonnet Carré Spillway operation by the US Army Corps of Engineers during the 2011, 2018, and 2019 flood events. To date, no juveniles have been observed.

The invasive apple snail (*Pomacea maculata*) has been documented in the New River Canal, a discharge canal that empties into the Petite Amite River, which empties into the Blind River. As of summer 2018, heavy infestations of the snail began to be reported throughout the Blind River area.

HABITAT EVALUATION

<u>Aquatic Vegetation</u>

Salvinia weevils were stocked in the Blind River area in 2008 and will continue to be stocked as they become available. Shortly after the initial stocking, Hurricane Gustav impacted the region and flooded the small slough where the weevil enclosure was being harbored. The flood waters widely dispersed the very small concentration of weevils, inhibiting the ability for them to colonize the area. A site visit was made in 2009, samples were taken, and weevils were not found in samples pulled from the immediate or surrounding area. In late 2013, salvinia weevils living on common salvinia were again introduced into the Blind River area. Follow-up site visits indicated that weevils established successfully and spread throughout the area. Weevils have been, and will continue to be, stocked as they become available.

The Blind River generates a large number of vegetation complaints each year, and they are addressed accordingly. Over the last decade, an average of 593 acres of vegetation were treated annually with herbicides. In an average year, the majority of treated vegetation is water hyacinth. The remaining acreage is typically composed of common salvinia, alligator weed, pennywort, primrose, water paspalum and duckweed.

Common salvinia and water hyacinth have been the main subjects of access and habitat complaints over the past several years. Floating nuisance vegetation is scattered throughout the basin and is constantly being restocked by the flushing and draining of adjacent swamps and bayous.

Estimates of vegetation coverage (as of January 15, 2025)

Problematic Species-

- Common Salvinia (*Salvinia minima)* – 15 acres
- Water Hyacinth (*Pontederia crassipes)* – 50 acres
- Duckweed (*Lemna* spp.*)* – 15 acres
- Duck Lettuce (*Ottelia alismoides*) – 50 acres
- White Egyptian Lotus (*Nymphaea lotus*) – <5 acres

Beneficial Species-

- Yellow Water Lily (*Nuphar lutea)* – 75 acres
- Coontail (*Ceratophyllum demersum)* – 45 acres

Common salvinia should be treated from April 1 – October 31 with a mixture of glyphosate (0.75 gal/acre) and diquat (0.25 gal/acre) with Turbulence surfactant (or approved equivalent, 0.25 gal/acre). From November 1 – March 31, common salvinia will be controlled with diquat (0.75 gal/acre) and a 90:10 non-ionic surfactant (0.25 gal/acre).

Water hyacinth should be controlled with 2,4-D (0.5 gal/acre) and a 90:10 non-ionic surfactant (1 pint/acre) or glyphosate (0.75 gal/acre) and a 90:10 non-ionic surfactant (0.25 gal/acre).

Water lilies (*Nymphaea & Nuphar* spp.) grow along much of the shallow shoreline of the river. Although the water lilies generally do not impair boating access, aquatic herbicide applications are routinely administered for control.

Water Quality

In 2024, the Environmental Protection Agency listed Blind River waters as impaired due to organic enrichment/depletion of oxygen, mercury in fish tissue, turbidity, temperature, excess nitrogen/phosphorus, and the presence of non-native aquatic plants. The EPA listed atmospheric deposition as a potential source of mercury contamination.

https://mywaterway.epa.gov/community/Blind%20River,%20LA,%20USA/overview

Substrate

Sandy river bottoms, high in inorganic material.

CONDITION IMBALANCE / PROBLEM

1. Lack of riverine influence has resulted in poor water quality conditions including: high organic load, low dissolved oxygen, stagnant backwaters that frequently flow into the river and saltwater intrusion from Lake Maurepas.

2. Blind River is very susceptible to major fish kills, especially in the event of a tropical storm or hurricane.

CORRECTIVE ACTION NEEDED

1. Restoration of Maurepas Swamp through diversions to improve water quality of Blind River.

2. Restoration of river flow into the system.

RECOMMENDATIONS

1. Seek opportunities for diversion of Mississippi River water into the Maurepas Swamp and Blind River system to restore historic natural seasonal water fluctuations.

2. Continue to monitor fish populations, particularly the recovery of fish stocks in the wake of frequent tropical system induced fish kills.

3. Continue to work with the Coastal Protection and Restoration Authority and USACE on proposed diversion projects.

4. Blind River should be assessed regularly during the growing season to assess aquatic nuisance vegetation infestations. Continue to control aquatic vegetation as needed through biological (weevil introductions) and chemical applications. Aquatic vegetation should be treated according to the Aquatic Herbicide Application Procedures as adopted by the LDWF Inland Fisheries Section (Table 3).

Table 3. LDWF Aquatic Herbicide Application Procedures.

Plant Species	**Herbicide**	**Surfactant**
Common/Giant Salvinia (April 1 to October 31)	Glyphosate (0.75 gal/acre) + Diquat (0.25 gal/acre) or Clipper (2 oz./acre)	Turbulence (or approved equivalent, 0.25 gal/acre)
Common/Giant Salvinia (November 1 to March 31)	Diquat (0.75 gal/acre)	Nonionic surfactant (0.25 gal/acre)
Water Hyacinth	2, 4-D (0.5 gal/acre)	Nonionic surfactant (1 pint/acre)
Water Hyacinth in waiver areas (March 15 to September 15)	Glyphosate (0.75 gal/acre)	Nonionic surfactant (0.25 gal/acre)
Alligator Weed (undeveloped areas)	Imazapyr (0.5 gal/acre)	Turbulence (or approved equivalent, 0.25 gal/acre)
Alligator Weed (developed areas)	Imazamox (0.5 gal/acre)	Turbulence (or approved equivalent, 0.25 gal/acre)
American Lotus	2, 4-D (0.5 gal/acre)	Nonionic surfactant (1 pint/acre)
American Lotus in waiver areas (March 15 to September 15)	Glyphosate (0.5 gal/acre)	Nonionic surfactant (0.25 gal/acre)
American Lotus in waiver areas with potable water intakes (March 15 to September 15)	Triclopyr (0.5gal/acre)	Turbulence (or approved equivalent, 0.25 gal/acre)
Duckweed	Diquat (1.0 gal/acre)	Nonionic surfactant (0.25 gal/acre)
Cuban Bulrush (*Oxycaryum cubense*)(sedge)	2, 4-D (0.5 gal/acre)	Nonionic surfactant (1 pint/acre)
Cuban Bulrush (sedge) in waiver areas (March 15 to September 15)	Glyphosate (0.75 gal/acre)	Nonionic surfactant (0.25 gal/acre)
Water Lettuce (*Pistia stratiotes*)	Diquat (1.0 gal/acre)	Nonionic surfactant (0.25 gal/acre)