LOUISIANA DEPARTMENT OF WILDLIFE and FISHERIES

OFFICE OF FISHERIES
INLAND FISHERIES SECTION

PART VI -B

WATERBODY MANAGEMENT PLAN SERIES

POVERTY POINT RESERVOIR

WATERBODY EVALUATION and
RECOMMENDATIONS 2019

CHRONOLOGY

April 2006 - Prepared by
Ryan Daniel, Biologist Supervisor, District 2

Updated February, 2009

Updated February, 2013
Ryan Daniel, Biologist Manager, District 2

Updated February, 2016
Ryan Daniel, Biologist Manager, District 2

Updated August, 2019
Ryan Daniel, Biologist Manager, District 2

Updated February, 2022
Ryan Daniel, Biologist Manager, District 2

TABLE OF CONTENTS

WATERBODY EVALUATION

STRATEGY STATEMENT

Recreational

Largemouth Bass (*Micropterus salmoides and Micropterus nigricans*) are currently managed with the goal of providing anglers with a greater opportunity to catch trophy-size fish. The potential should be high, as this is a relatively new, fertile reservoir with abundant forage and a high percentage of Florida-strain bass (*M. salmoides*) present. Recreational harvest restrictions for Largemouth Bass (LMB) include a 15" – 19" protective slot limit with an eight fish per day creel limit. Anglers are allowed to harvest only one bass larger than 19" in length. The intent of this regulation is to protect larger, faster growing fish so that they will have a better opportunity to reach a trophy size, while allowing moderate harvest of smaller fish for consumption. Conditions to enhance the production of larger size bass include:

1. Successful introduction of Florida Largemouth Bass (FLMB)
2. Habitat conducive to survival, growth, and reproduction of FLMB
3. No incompatible gear conflicts
4. Long term LDWF regulatory control
5. Angler understanding and support of associated regulations
6. Harvest of smaller bass to maximize available forage for remaining fish.

Sunfish (*Lepomis* spp.) and other species are managed under the maximum sustained yield scheme, which typically results in abundant fish for anglers and forage for bass. In Louisiana, because of habitat, environmental conditions, and angler characteristics, this can normally be achieved through proper bass management and usually doesn't require any other species-specific regulations.

Commercial

A limited commercial fishing season was established in 2017 in an effort to reduce an abundance of commercially important species. The season provides an additional opportunity to commercial fishermen, and has the potential to enhance sport fish populations by reducing competition with certain commercial species. Culling of commercial species should benefit growth rates of sport and forage fish by increasing available food sources. Commercial species are regulated by use of certain gear types and a limited season, though statewide creel and size limits apply.

Species of Special Concern

No threatened or endangered fish species are known to exist in the lake.

EXISTING HARVEST REGULATIONS

Recreational

Crappie

25 daily per person, no size restriction (lowered from statewide limit due to concerns of over-exploitation)

Sunfish (Bluegill (*L. macrochirus*), Redear (*L. microlophus*), etc.)
No daily limit or size restriction

Largemouth Bass
15" to 19" slot limit (all bass measuring 15.0" to 19.0" must be released immediately), 8 fish daily limit, and only one may exceed 19"

Yellow Bass (Morone mississippiensis) and *White Bass* (*M. chrysops*)
50 daily per person, no size restriction

Hybrid Striped Bass (*M. saxatilis x M. chrysops*)
5 daily per person, no size restriction

Channel Catfish (Ictalurus punctatus)
100 daily per person, 11" minimum length (25 fish below the minimum length may be harvested)

The current recreational fishing regulations may be viewed at the web address below:
http://www.wlf.louisiana.gov/regulations

Commercial
A recurring net season was established in January 2017. Only gill or trammel nets with a minimum 3.5 in. sq. mesh (7 in. stretched) are permitted. Fishing is allowed Oct. 1 through the last day of February and nets can only be run during daylight hours. A special permit is required and is available from LDWF licensing. Statewide creel and size limits are in effect.

The current commercial fishing regulations may be viewed at the web address below:
http://www.wlf.louisiana.gov/regulations

Species of Special Concern
None

SPECIES EVALUATION

Recreational

Largemouth Bass Catch per Unit Effort and Length Frequency

Electrofishing is the standard sampling method used to estimate various aspects of the Largemouth Bass population, including abundance and size distribution. Standardization of sampling and analysis of numerous samples performed over a long period of time are necessary for accurate estimates of fish populations. Largemouth Bass are targeted as a species indicative of the overall fish population due to their high position in the food chain; however, electrofishing is not an efficient sampling technique for large size bass. Gill nets are typically used to provide sampling data for large bass. In the chart below (Figure 1), bass abundance for different size classes are indicated by electrofishing catch rate. Catch per unit effort (CPUE), in this case, is defined as the number of bass collected during 1 hour of sample time, or catch per hour (CPH).

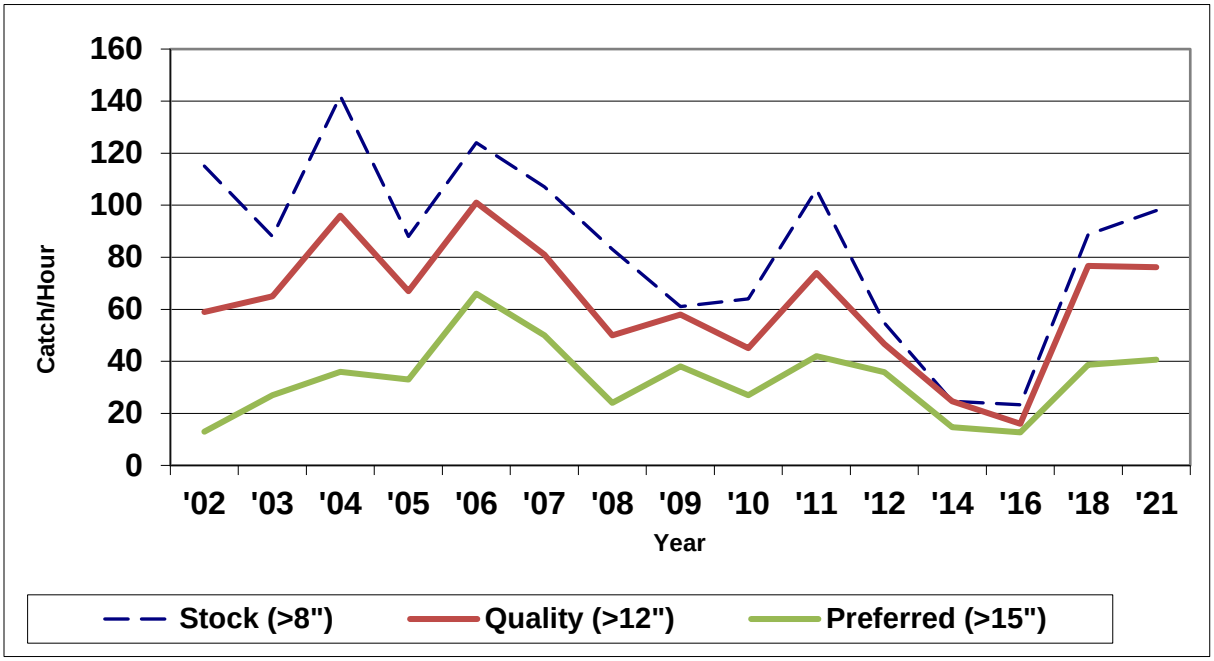


Figure 1. The catch per unit effort of Largemouth Bass by size class from spring electrofishing results on Poverty Point Reservoir, 2002 – 2021.

The above chart depicts what would normally be expected from a new reservoir with an expanding fish population characterized by abundant small fish, and increasing numbers of larger fish over subsequent years. Year-to-year differences have little significance, but the longer term trends show that the population has become well established and appears properly balanced. A declining trend in CPUE was observed from 2011 through 2016 (three samples) but the 2018 and 2021 samples showed CPUE values back near or slightly above the long term average.

The following size distribution charts (Figure 2) show how the bass population has become more stabilized since the opening of the lake. In 2002, small fish dominated the population. The 2003 sample shows a fairly well distributed population before angling had an effect. The number of large bass over 16 inches has steadily increased, while recruitment of smaller fish appears to be sufficient.

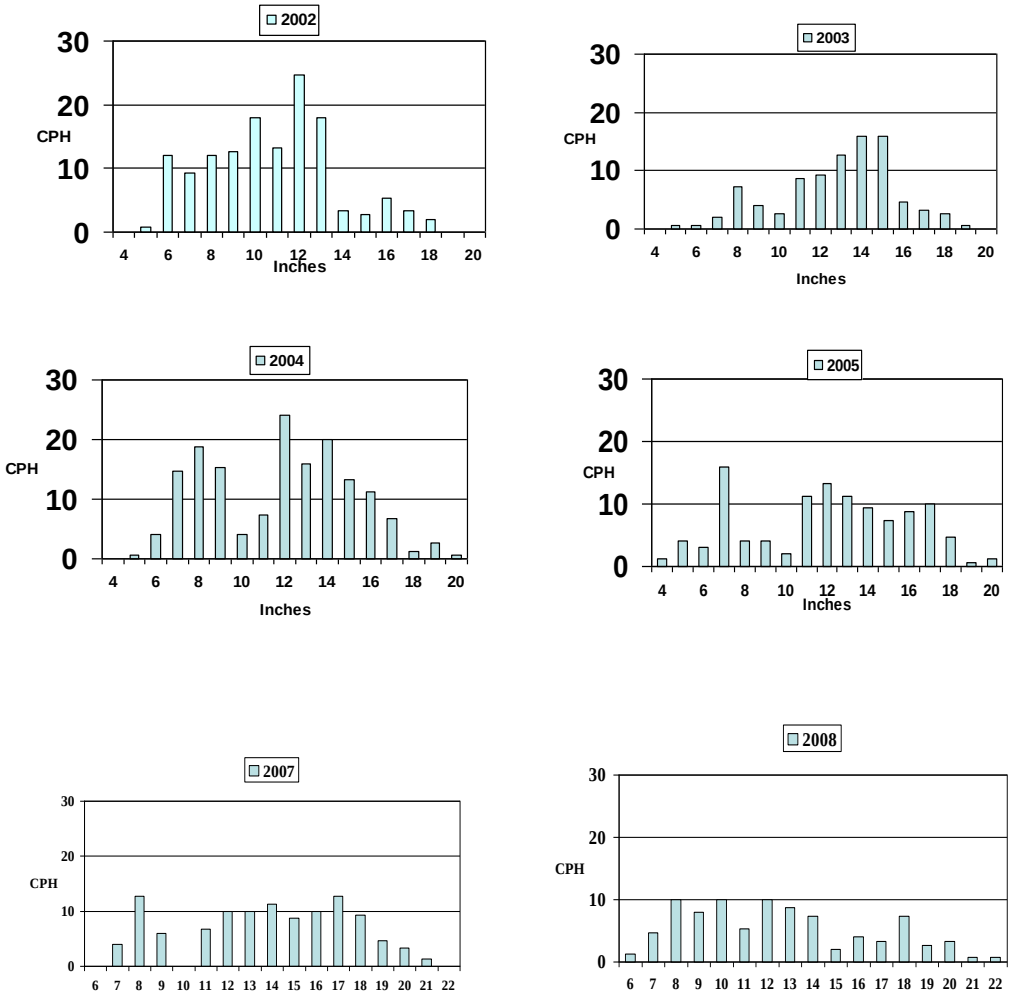


Figure 2. The Largemouth Bass size distributions (inch groups) from spring electrofishing samples on Poverty Point Reservoir, for years 2002, 2003, 2004, 2005, 2007, and 2008.

Largemouth Bass size distributions (inch groups) from electrofishing observations taken from the past five samples are shown below (Figures 3 - 7). The population appears to be normally distributed in all of these samples. Most inch groups are represented, with the exception of the 2014 sample where smaller size fish were mostly missing. This could be explained by the low sample size in that year (n = 55). This could also indicate poor recruitment of bass from 2012 – 2014. If these age classes are actually under-represented in the population, it is unclear whether this would be due to low spawning success or low survival of offspring. Sampling bias, especially with a low sample size, is also a possibility. The most recent samples taken in 2021 show a very well distributed population, with every inch group from 5 – 23 in. represented from spring samples. The 2021 spring sample also had the highest CPH rate (CPH=107) of all samples since 2011 (CPH=117).

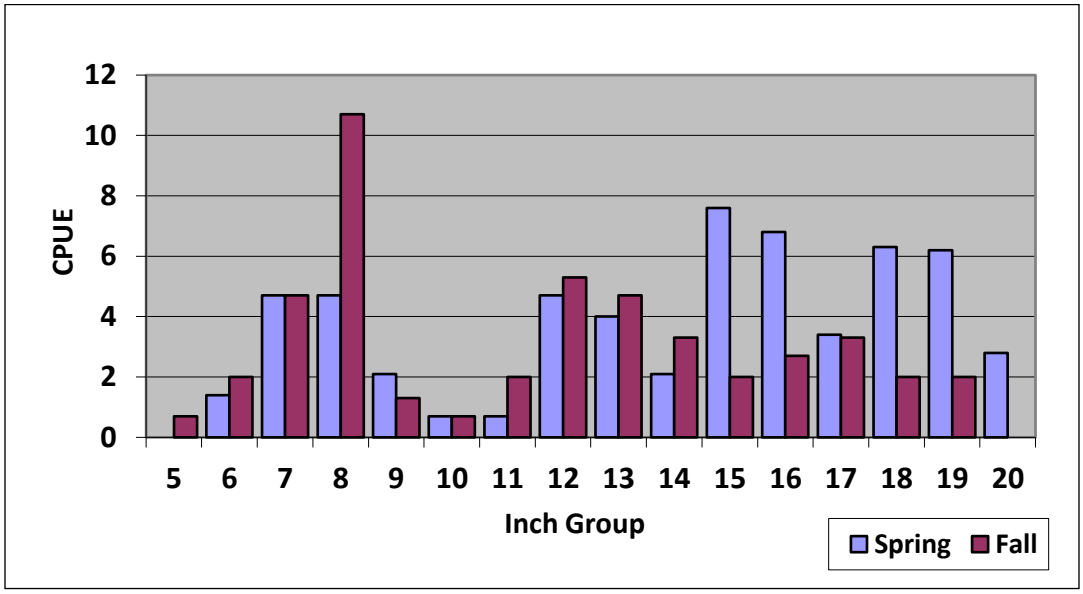


Figure 3. The size (length frequency) distribution for Largemouth Bass from Poverty Point Reservoir collected by electrofishing in spring (n=90) and fall (n=71) 2012.

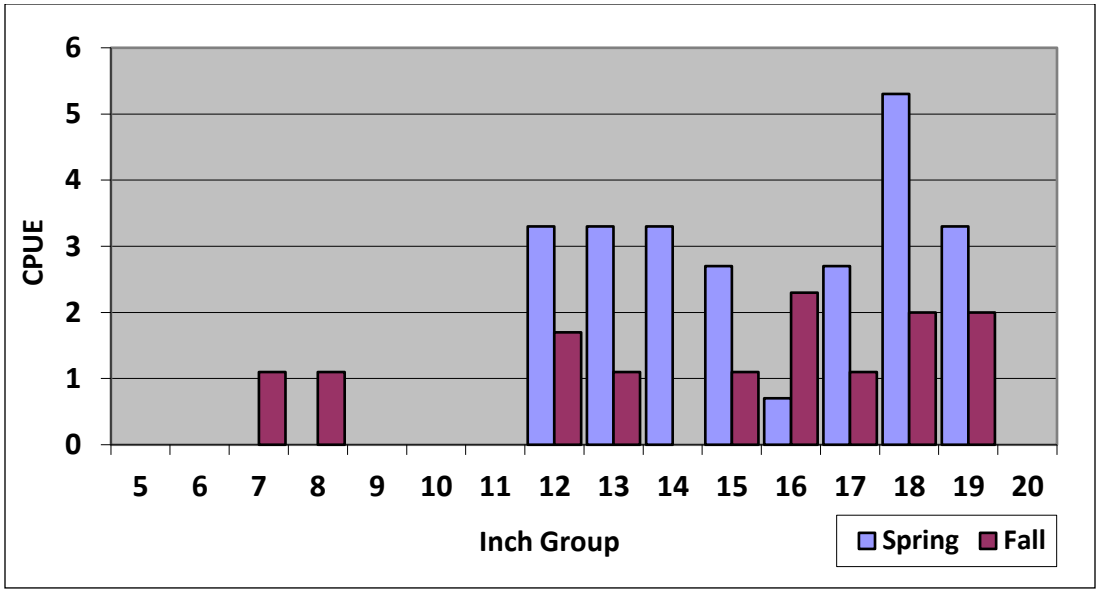


Figure 4. The size (length frequency) distribution for Largemouth Bass from Poverty Point Reservoir collected by electrofishing in spring (n=37) and fall (n=18) 2014.

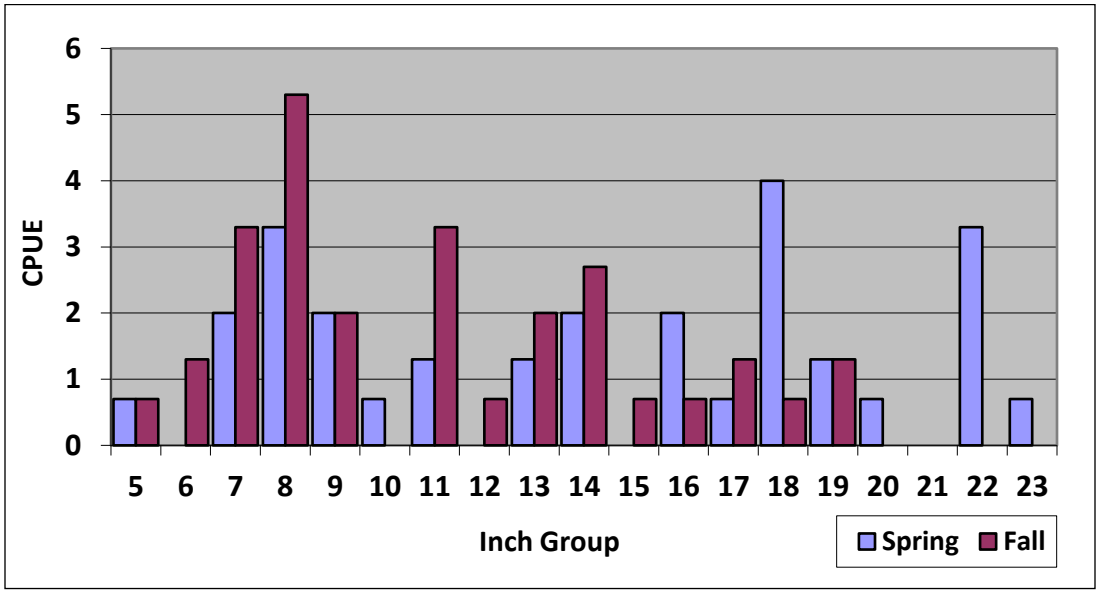


Figure 5. The size (length frequency) distribution for Largemouth Bass from Poverty Point Reservoir collected by electrofishing in spring (n=39) and fall (n=39) 2016.

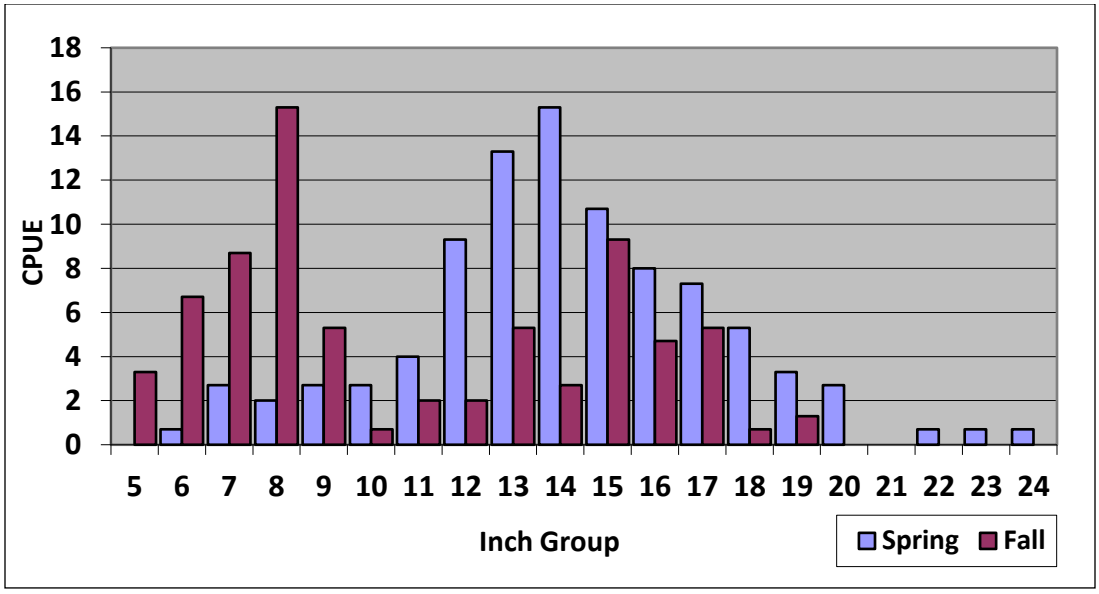


Figure 6. The size (length frequency) distribution for Largemouth Bass from Poverty Point Reservoir collected by electrofishing in spring (n=137) and fall (n=111) 2018.

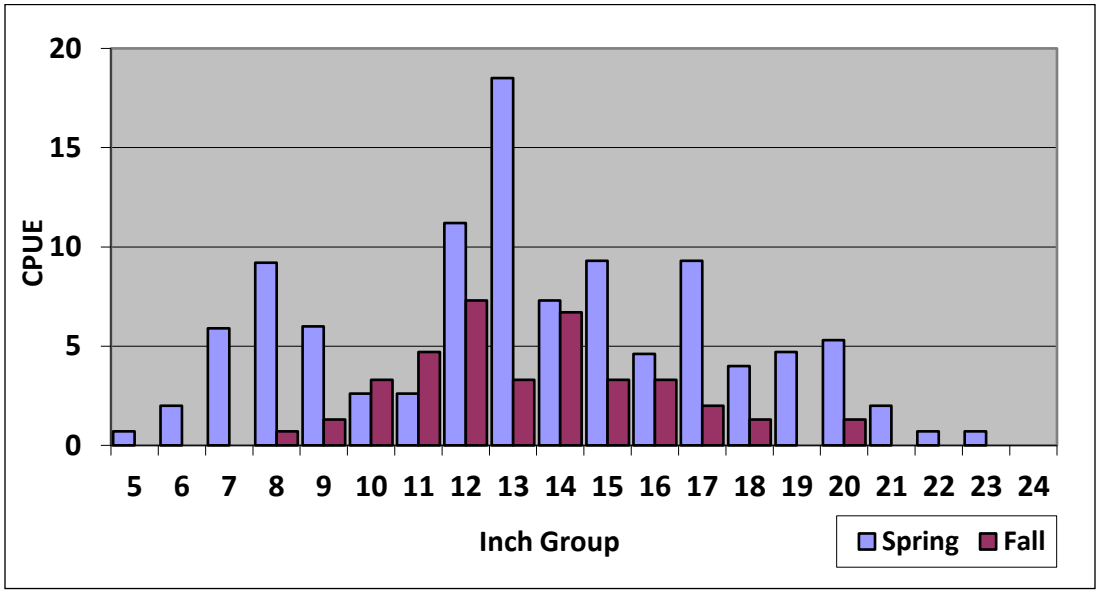


Figure 7. The size (length frequency) distribution for Largemouth Bass from Poverty Point Reservoir collected by electrofishing in spring (n=161) and fall (n=60) 2021.

Largemouth Bass Stock Density

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 LMB) to the number of bass of stock size (greater than 8 inches in length). The PSD is expressed as a percentage. A fish population with a high PSD consists mainly of larger individuals, whereas a population with a low PSD consists mainly of smaller fish. Values for PSD, $RSD_{preferred}$ (15" and greater), and $RSD_{memorable}$ (20" and greater) are shown in the table below (Table 1). Fish exceeding 20 inches in length were first caught in 2005 samples, and have appeared frequently since. Ideal PSD and $RSD_{preferred}$ values for LMB range from 40-70 and 10-40, respectively. The 2018 and 2021 samples showed a bass population slightly skewed towards larger size fish.

Table 1. Largemouth Bass stock density values from spring and fall electrofishing on Poverty Point Reservoir, 2002 – 2021.

Sample Date	PSD	RSD_p	RSD_m
Spring 2002	51	12	0
Fall 2002	27	5	0
Spring 2003	74	18	1
Fall 2003	50	31	0
Spring 2004	68	25	0
Fall 2004	37	11	0
Spring 2005	76	37	2
Fall 2005	57	24	2
Spring 2006	82	53	3
Fall 2006	51	27	2
Spring 2007	76	47	4
Fall 2007	45	22	4
Spring 2008	60	29	6
Fall 2008	65	35	3
Spring 2009	96	63	-

Fall 2009	52	23	-
Spring 2010	70	42	-
Fall 2010	59	30	-
Spring 2011	70	40	-
Fall 2011	84	50	-
Spring 2012	85	65	-
Fall 2012	63	30	-
Spring 2014	100	59	-
Fall 2014	88	56	-
Spring 2016	69	54	20
Fall 2016	47	22	-
Spring 2018	86	44	5
Fall 2018	57	39	-
Spring 2021	79	41	9
Fall 2021	74	29	3

The following graph (Figure 8) tracks the PSD and $RSD_{preferred}$ values for Largemouth Bass sampled from spring electrofishing 2002 through 2021. As shown in the table above, 2014 values are exceptionally high. Recent values have been in the upper range or above what is considered desirable. There are several possible explanations for these high values: (1) low reproductive success or survival of small bass, (2) lack of shoreline cover at some sample locations in Poverty Point is not attractive to smaller bass, thus underestimating their abundance, (3) the slot limit, which protects bass between 15 and 19 inches, may also be affecting the size distribution of the population, and (4) extremely fast growth rates, which have been documented, may mean that very few small fish are present in the population during spring sampling.

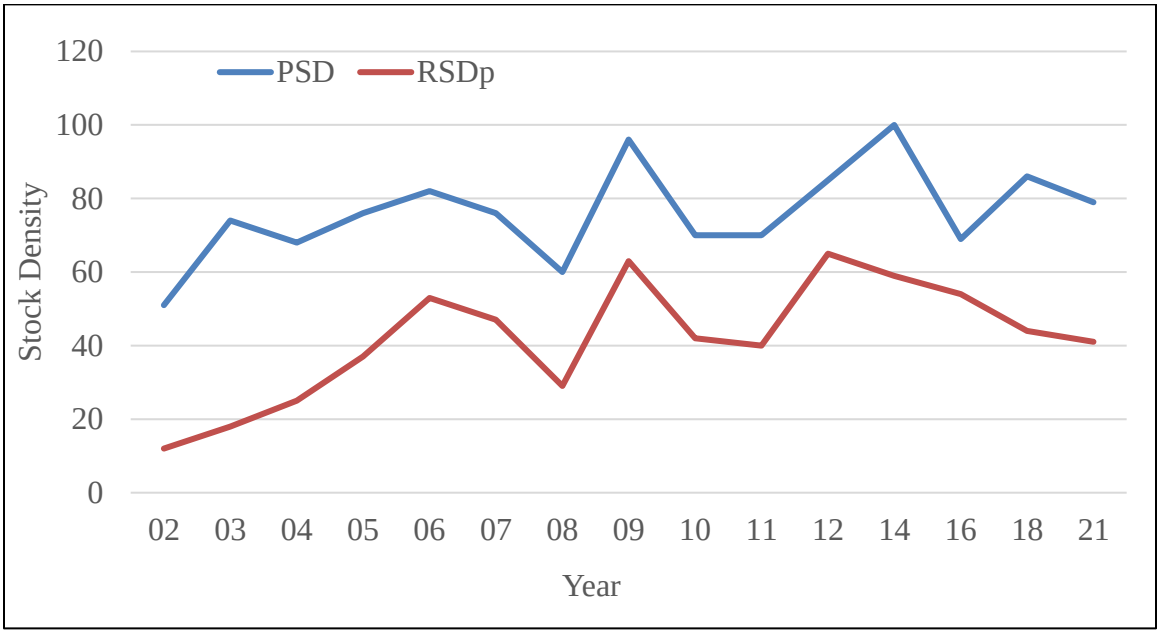


Figure 8. The size structure indices (Proportional Stock Density and Relative Stock Density-preferred) values for Largemouth Bass from Poverty Point Reservoir from spring electrofishing, 2002 –2021.

Age and Growth

The following graph (Figure 9) shows length at age of capture for Largemouth Bass from 2005 and 2008 fall samples. Largemouth Bass in Poverty Point have grown at a very rapid rate, which is to be expected in a new reservoir located in the fertile Mississippi Alluvial Valley. Age, growth, and mortality results collected during the 2010 – 2012 stock assessment study are shown in Appendix A. Growth rates were slightly less during the study, but still considered to be fast growing.

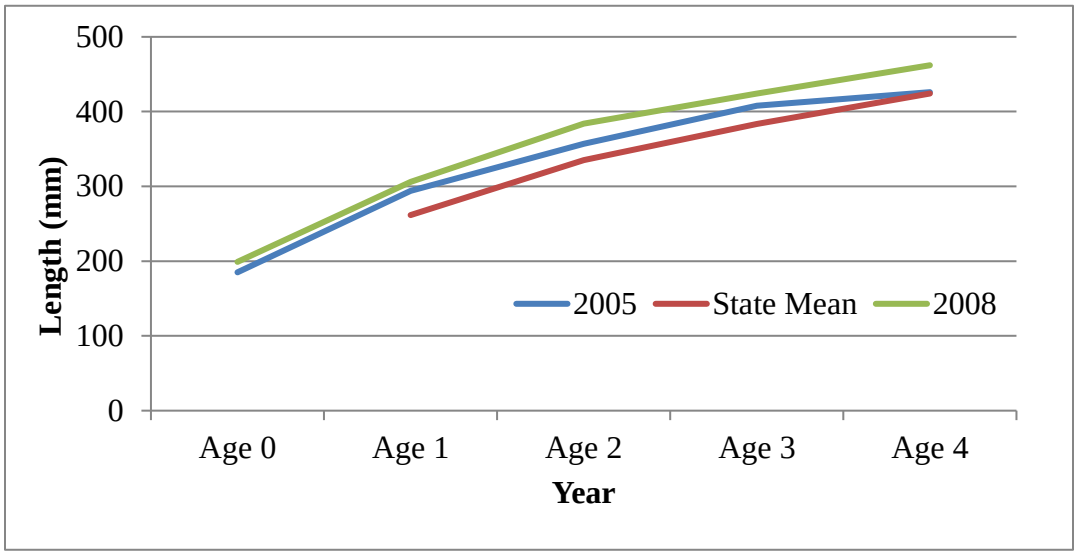


Figure 9. The length at age of capture for Largemouth Bass from fall electrofishing on Poverty Point Reservoir in 2005 (n=76) and 2008 (n=88).

Genetics

Genetic samples since 2005 have shown that the presence of the Florida bass genome has approached or exceeded 50% of the bass population (Table 2). Stocking programs are considered successful when over 30% of the bass population contains these genetics. LDWF sampling and stocking efforts will be conducted to monitor and maintain a target level of at least 30% Florida influence in Poverty Point bass. The highest percentage was obtained from the 2018 sample, which could be the result of stocking larger size FLMB fingerlings since 2014.

Table 2. Summary of genetic sampling conducted on Largemouth Bass from Poverty Point Reservoir from 2001 – 2018.

LARGEMOUTH BASS GENETICS					
Year	N	NLMB	FLMB	NLMB x FLMB	Total FLMB
2001	100	77%	22%	1%	23%
2003	161	73%	7%	20%	27%
2004	117	68%	10%	22%	32%
2005	76	52%	16%	32%	48%
2008	102	44%	25%	31%	56%
2009	74	42%	17.5%	40.5%	58%
2010	256	59%	15%	26%	41%
2011	268	43%	15%	42%	57%
2012	263	51%	7%	42%	49%
2018	62	35.5%	25.8%	38.7%	64.5%

Largemouth Bass Stock Assessment

A three-year stock assessment study on Largemouth Bass was initiated in 2010. A summary is provided in Appendix A. The study involved intensive sampling in spring and fall, and included genetics, age and growth, and mortality analyses. A recreational creel survey was completed in 2012 to assess angler harvest characteristics on the bass population. The primary purpose for this study was to provide information to assist in the management of Largemouth Bass in Poverty Point.

The following is a summary of the findings of the Largemouth Bass stock assessment study: Length distribution, age structure, growth rate, and mortality rate were found to be at levels that indicate a stable LMB population in Poverty Point Reservoir. The population is much more influenced by natural factors than by fishing related mortality. The current LMB regulation was implemented to use angler harvest as a management tool to increase the abundance of bass larger than 19 inches. Angler harvest is critical for effectiveness of the regulation, but the results of this project indicate that Poverty Point Reservoir LMB harvest is lacking. Anglers are not utilizing the current Poverty Point Reservoir LMB regulations as a management tool. Further, if Poverty Point Reservoir anglers remain hesitant to harvest LMB, the effectiveness of any size regulation as a management tool would be severely limited.

Forage

Forage availability is measured through shoreline haul seine sampling, electrofishing, and indirectly through measurement of LMB 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. Low LMB relative weights (<80) indicate a potential problem with forage availability.

In Poverty Point Reservoir, sunfish (*Lepomis* spp.) and shad (*Dorosoma* spp.)are the primary Largemouth Bass forage species. These fish are very abundant and benefit from the high natural fertility of the reservoir. Other abundant species that likely constitute forage for LMB and other predatory species include Yellow Bass, Freshwater Drum (*Aplodinotus grunniens*), catfish, and Brook Silversides (*Labidesthes sicculus*). These species were identified as abundant during recent fall electrofishing forage samples. Relative weights for various size groups of LMB are given below (Figure 10) for years 2002 – 2021. To avoid bias from variation as a result of spawning, samples were collected in the fall. The majority of the relative weights exceed 100%, indicating sufficient forage in Poverty Point Reservoir. Relative weights have been exceptional for the most part with nearly all size fish exceeding 100% Wr in the fall. The value of 86 for "quality" size bass in 2014 has been the lowest thus far, though this was estimated from a low sample size (*n*=5). There has been an increasing trend in relative weights since 2011.

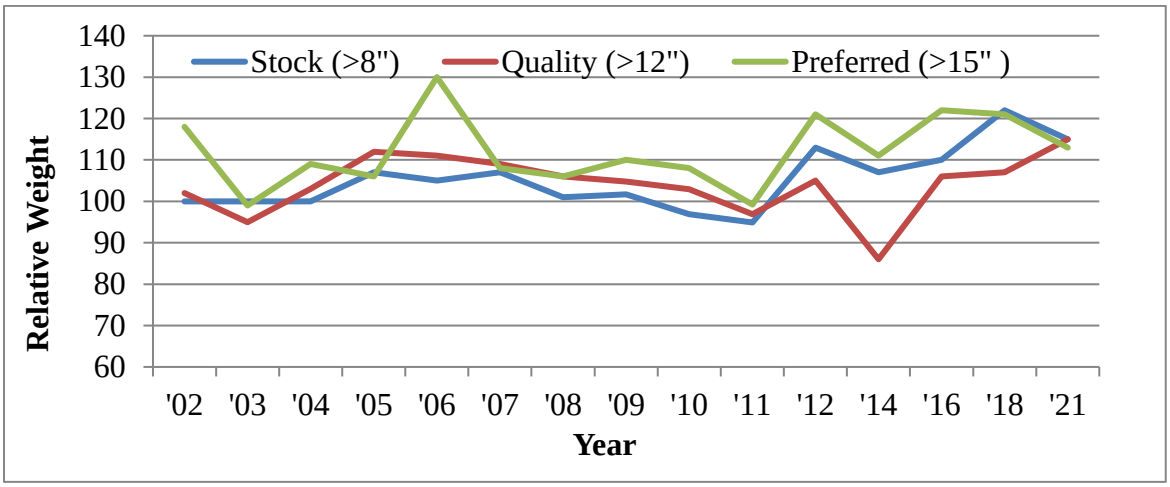


Figure 10. The relative weights for three size classes of Largemouth Bass from fall electrofishing on Poverty Point Reservoir, 2002 – 2021.

Crappie

Crappie have become extremely popular with anglers at Poverty Point Reservoir, with crappie angling constituting a very high percentage (51% determined during 2012 recreational angler creel survey) of overall angling. Crappie populations have been sampled in Poverty Point Reservoir primarily with the use of lead nets. Both Black and White Crappie are found in the reservoir. Black Crappie were the dominant species just after the reservoir was filled, but White Crappie have become more abundant since 2004, now comprising over 90% of the crappie population. The following chart (Figure 11) shows size distribution (length) of Black and White Crappie for all inch groups in 2004, when crappies were first sampled in Poverty Point Reservoir. The CPUE is the sum of 4 different mesh sized nets fished simultaneously, given in total catch per hour. The mesh sizes were 0.5", 1.0", 1.5", and 2.0" measured knot to knot.

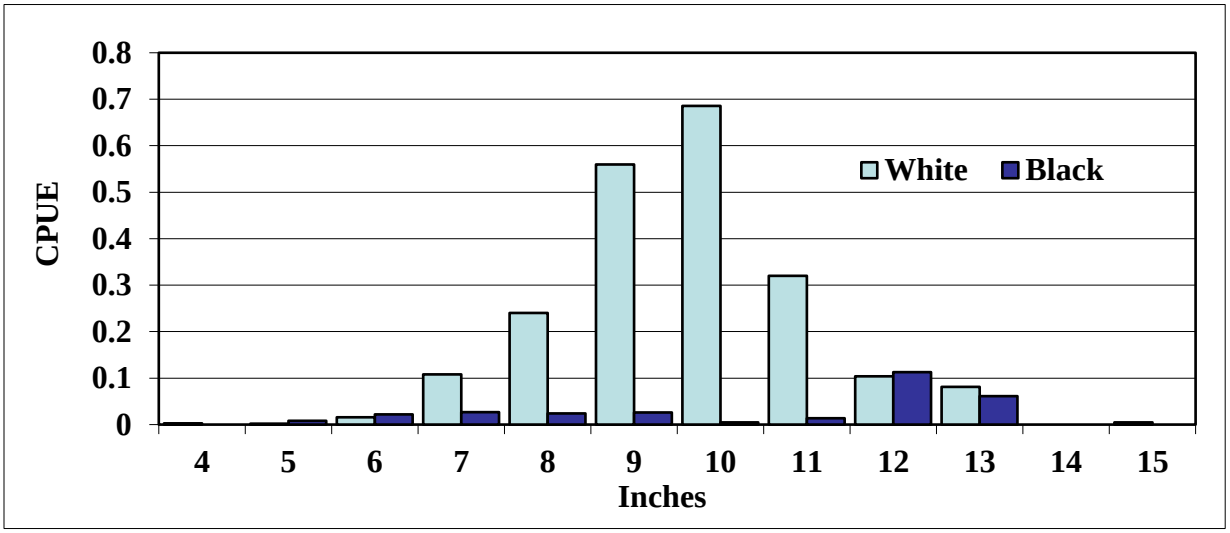


Figure 11. The size distribution in inch groups of crappie from Poverty Point Reservoir; results estimated from lead net sampling in fall 2004 (n=279).

The above chart shows a normally distributed population of White Crappie and a few mostly large Black Crappie. Reproduction and/or recruitment of Black Crappie seems to be impaired as very few small fish were captured. The few large fish probably represent the original population of Black Crappie that was introduced into the lake during impoundment. The physical characteristics of the lake are probably more suitable to White Crappie, as they can endure turbid conditions better than Black Crappie.

Charts depicting size distribution (inch groups) for both Black and White Crappie in 2006 (Figure 12) and 2008 (Figure 13) are shown below. These fish were collected in 1.0-inch lead nets only. The 1.0 inch nets have become the standardized crappie sampling gear of LDWF. The CPUE was lower in 2008 for all sizes of crappie, although the distribution of the population among size classes appears normal. Only a very small number of 8- and 9-inch Black Crappie showed up in both samples.

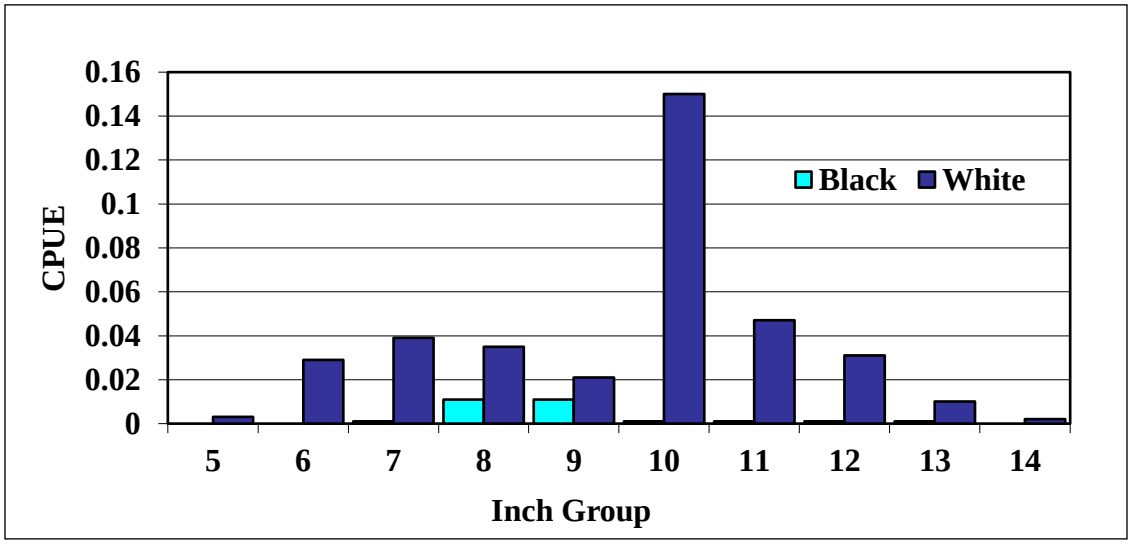


Figure 12. The size distribution in inch groups of crappie from Poverty Point Reservoir lead net sampling in fall 2006 (n=500).

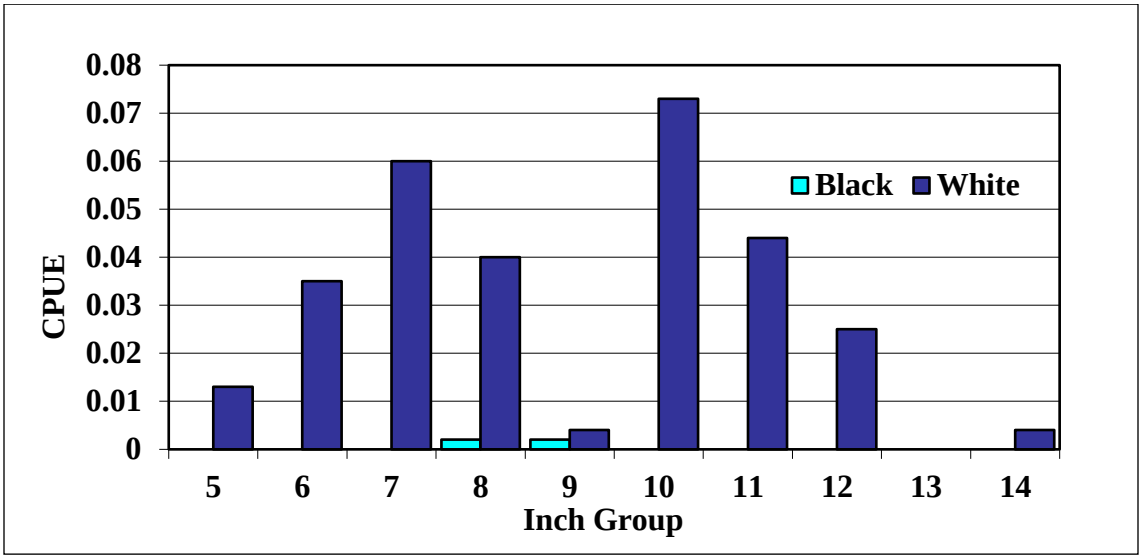


Figure 13. The size distribution in inch groups of crappie from Poverty Point Reservoir lead net sampling in fall 2008 (n=154).

Length distributions from samples conducted during the crappie stock assessment study in 2010, 2011, and 2012 are shown in the summary of this study in Appendix B. The most recent standardized samples were completed in 2016 (Figure 14) and 2019 (Figure 15). The population appeared normally distributed in 2016, though slightly skewed toward smaller fish in 2019. The low abundance of 10-inch White Crappie in 2016 and 9-inch fish in 2019 could be explained by the difference in avg. lengths for different age classes (ex. In 2016, Age-1 mean length = 9 inches. vs. age-2 mean length = 11 inches). Age and growth estimates for these samples were not determined, though this could be a plausible assumption, based on growth rates estimated during the crappie stock assessment study.

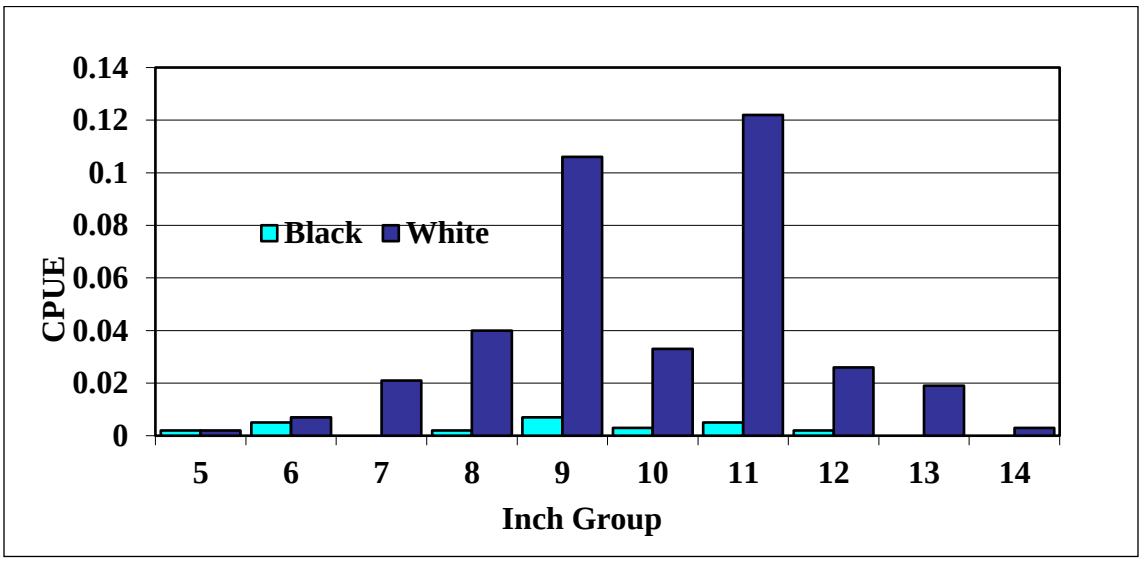


Figure 14. The size distribution in inch groups of White (n=218) and Black (n=15) Crappie from Poverty Point Reservoir lead net (1.0 in. mesh) sampling conducted in fall, 2016.

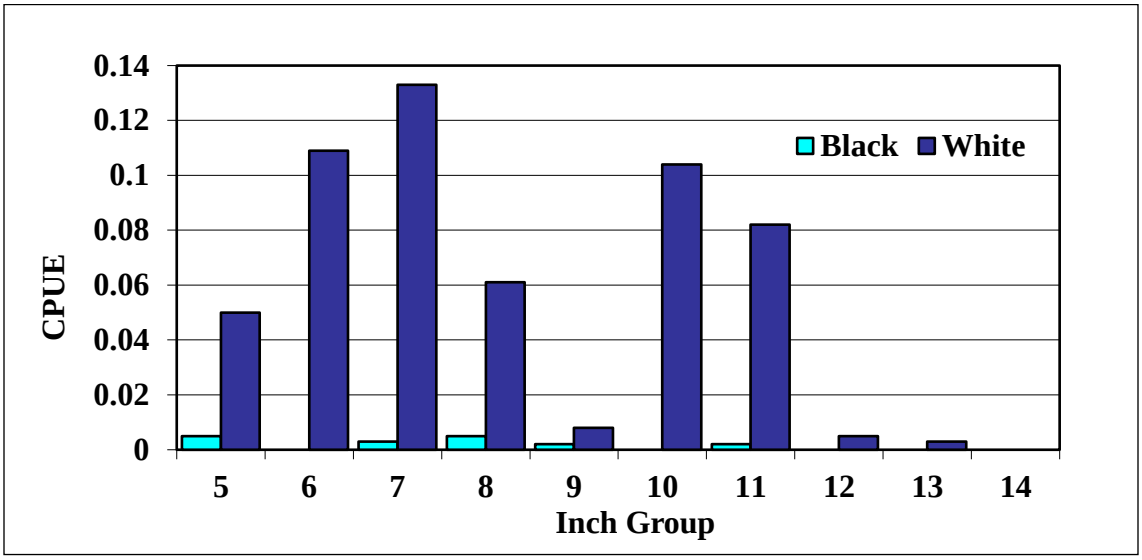


Figure 15. The size distribution in inch groups of White (n=348) and Black (n=10) Crappie from Poverty Point Reservoir lead net (1.0 in. mesh) sampling conducted in fall, 2019.

Poverty Point Reservoir has become known as a lake that produces larger-than-average-size crappie, with many fish exceeding 12 inches. The $CPUE_{preferred}$ (10 inches or larger) values have been variable since 2010 (Figure 16), though they are considered to be above average. In spring 2021 electrofishing samples, where they are collected along with bass, over 90% of the White Crappie were greater than 10 inches (*n*=145). It should be noted that typically only breeding adults are collected during spring sampling, thus smaller crappie may have been under-represented. Nonetheless, an abundance of desirable size fish was documented. .

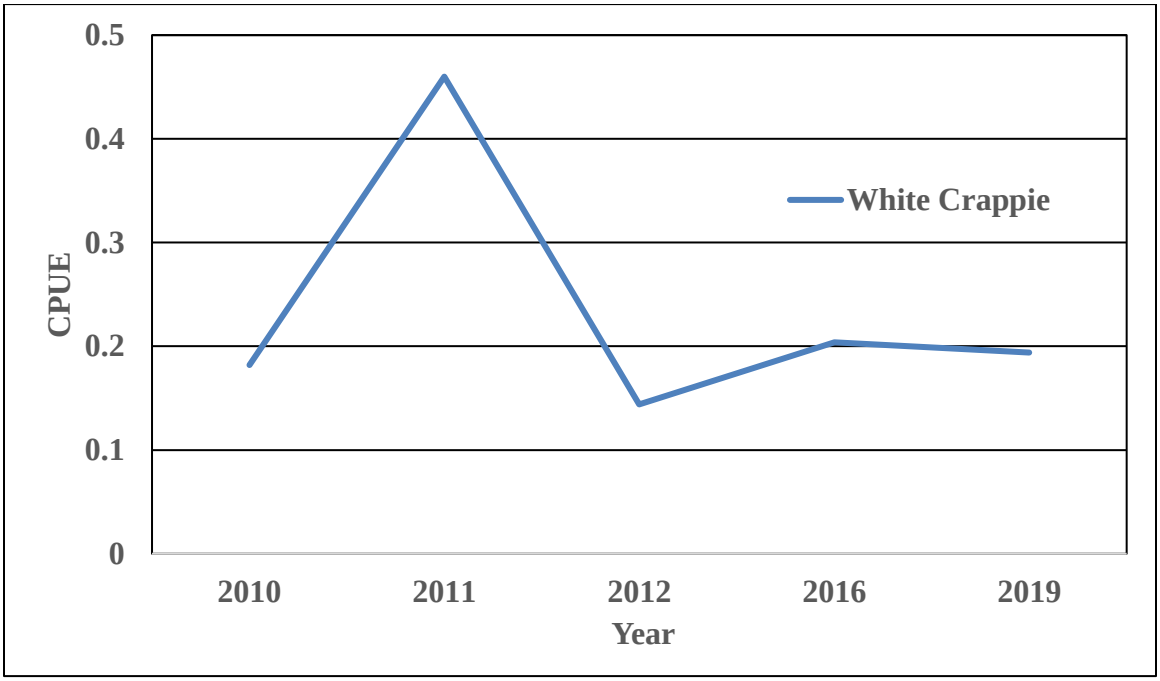


Figure 16. $CPUE_{preferred}$ (10 inches or larger) values of white crappie captured during lead net sampling on Poverty Point Reservoir from 2010 – 2019.

2009 Crappie Exploitation Study

In 2009, LDWF conducted a tag-return study to determine the rate of angler harvest on crappie in Poverty Point Reservoir. The study was initiated because of continued angler concern of excessive harvest, and to get an accurate estimate of angler-induced mortality on the crappie population. A total of 243 crappie were tagged in early 2009 and 135 tags were returned by anglers by May 31. Exploitation was estimated at 59.3%, assuming a 10% non-reporting rate and no mortality. The abstract of this study, which was published in the 2011 Proceedings of the Southeastern Association of Fish and Wildlife Agencies Conference, is attached in Appendix C.

Crappie Stock Assessment

An assessment of the crappie population in Poverty Point Reservoir was conducted from 2010 – 2012. A summary of this study is found in Appendix B and the results are summarized as follows: The Poverty Point crappie population is much more influenced by fishing related mortalities than by natural factors. If natural mortality remains constant, no increase in crappie yield should be expected from the protection of a 10 in. or 12 in. minimum length limit. Moreover, the required release rates associated with both minimum length limits (1% and 89% respectively) would be poorly received by anglers that pursue crappie for food. The reduction in daily creel necessary for any impact would also have poor angler acceptance. No change could be expected unless the creel limit is lowered closer to the average angler's catch of 2.8 fish per day. Size distribution, recruitment levels, and fish condition were found to be at levels that indicate a stable and healthy crappie population in Poverty Point Reservoir. The fishery is currently managed with no size restrictions and a 25 fish per day harvest limit. Given the dynamics of this crappie population and fishery, no change in regulation is recommended.

*Channel Catfis*h

Over 75,000 Channel Catfish were stocked into the lake on different occasions in 2003 and 2004. Many of these original fish quickly reached large sizes, and several exceeding 10 lbs. were captured during sampling. The catfish soon began reproducing, and have become very abundant in the lake. Lead nets have proven to be an efficient tool for capturing and assessing the Channel Catfish population. The following chart (Figure 17) shows a size distribution (max. 22 in., although a small number of larger fish were captured) of Channel Catfish captured during lead net (1.0 in.) sampling in 2012, 2016, and 2019 The CPUE values given are the total number of catfish caught per net hour of lead net sampling. There is a noticeable shift toward smaller size fish, with many fish in the 2019 sample less than optimal size for harvest. The mean length of fish from the 2019 sample was 9.4 inches. An overcrowding and stunting situation appears to be occurring. Increasing and excessive harvest of larger size classes would be the only other explanation for the decline in larger fish, but this is not believed to be happening. Stunted populations of Channel Catfish are common in reservoirs where reproductive success is high and harvest is low to moderate. Thus, an increase in harvest could potentially lead to an increased average length of fish.

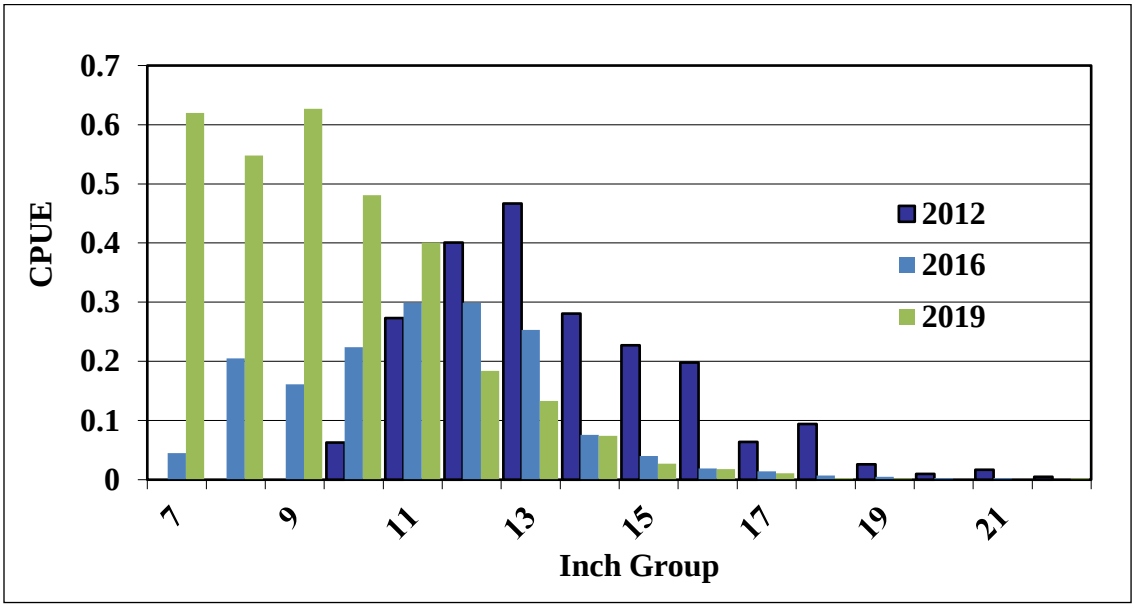


Figure 17. The size distribution (inch groups) of 7 – 22 in. Channel Catfish from Poverty Point Reservoir captured in lead nets during 2012 (n=1,069), 2016 (n=954), and 2019 (n=1,959).

Sunfish

Sunfish are an important component of the fisheries in Poverty Point Reservoir and constitute a significant percentage of overall angling activity. Bluegill are the most abundant species, and also the most targeted because of their abundance and size. Other common sunfish species in Poverty Point include Redear Sunfish, Green Sunfish (*L. cyanellus*), and Longear Sunfish (*L. megalotis*), although of these, only the redear typically reaches desirable size for anglers. All of these, though, provide suitable forage for larger predatory fish. Populations of these fish, especially Bluegill, are best evaluated by electrofishing forage samples conducted in the fall, when all species of fish are collected. A length distribution for Bluegill from the 2018 forage sample is shown below in Figure 18. An abundance of small to medium size fish was shown. Larger Bluegill may be underrepresented during fall electrofishing samples.

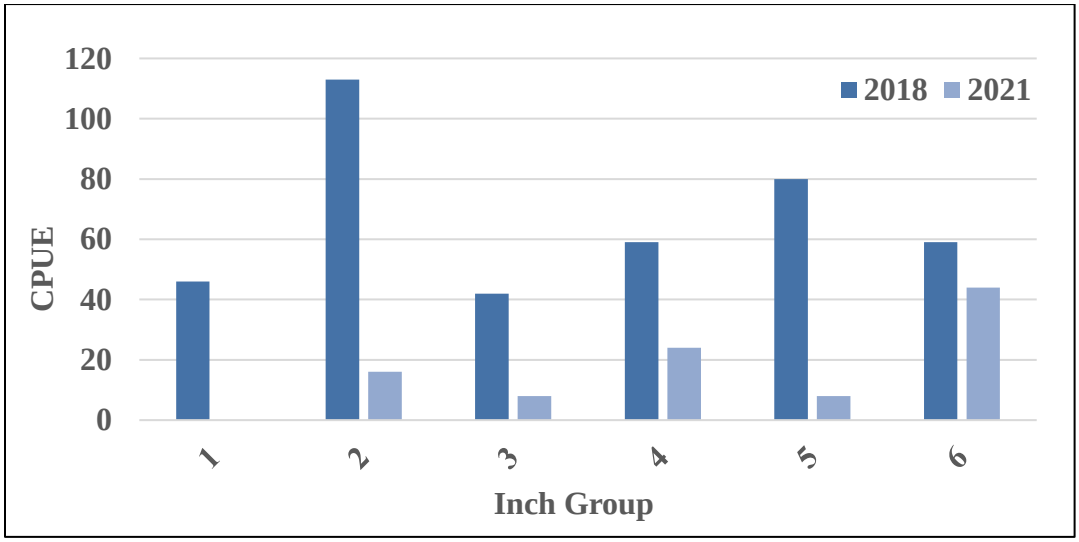


Figure 18. The CPUE (catch per hour) of Bluegill from fall electrofishing forage samples on Poverty Point Reservoir in 2018 and 2021.

Hybrid Striped Bass

Hybrid Striped Bass fingerlings were first stocked into Poverty Point Reservoir in 2016. The stocking was made due to angler request and to provide an additional angling opportunity. The habitat of Poverty Point was the leading factor that influenced this decision. Hybrid stripers thrive in warm, productive lakes with a high percentage of open water and abundant pelagic forage, such as shad. While the habitat of Poverty Point Reservoir may be a limiting factor for certain sport fish species, hybrid stripers are expected to thrive in this environment. The fish will not reproduce and thus must be periodically stocked to sustain the population. As expected, growth rates thus far appear to be very fast, with fish up to 22 inches collected during 2020 gill net sampling. Larger fish caught by anglers have been reported. The length distribution of hybrid stripers caught in the 2020 gill net sample is shown below (Figure 19). Annual stockings of Hybrid Striped Bass will occur as long as they are deemed appropriate.

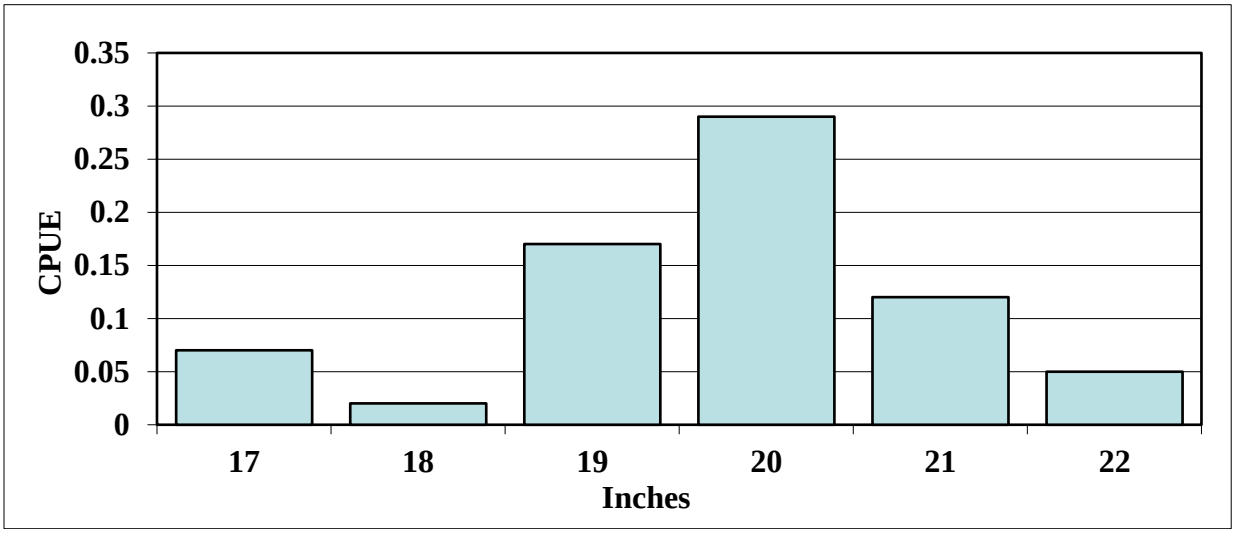


Figure 19. The size distribution in inch groups of Hybrid Striped Bass collected during gill net sampling on Poverty Point Reservoir in 2020.

Commercial

There is an abundance of commercial species in Poverty Point Reservoir, which was one reason for the creation of a commercial season in 2017. Species documented during sampling include Common Carp (*Cyprinus carpio*), Channel Catfish, Blue Catfish (*I. furcatus*), buffalo fish (*Ictiobus* spp.), and Freshwater Drum (*Aplodinotus grunniens*). Gill net sampling conducted in 2014, 2017, and 2020 revealed a significant population of several commercially important species. Table 3 shows the CPUE from these samples. The most abundant of these species were Common Carp, Smallmouth Buffalo (*I. bubalus*), both Channel and Blue Catfish , both Spotted (*Lepisosteus platostomus*) and Longnose (*L. osseus*) gar, and Freshwater Drum. The 2014 sample was the first sample of any gear type to show Blue Catfish to be of significant abundance in Poverty Point Reservoir. It is suspected that catfish, Common Carp, and buffalo fish could potentially comprise an important commercial fishery in Poverty Point Reservoir.

Table 3. Catch per unit effort (CPUE) of commercially important species from 2014, 2017, and 2020 gill net sampling in Poverty Point Reservoir. CPUE is number per 100 ft. net per net night.

Species	2014 CPUE	2017 CPUE	2020 CPUE
Common Carp	10.44	1.01	0.36
Buffalo species*	3.00	0.47	0.26
Blue Catfish	1.69	0.14	0.14
Channel Catfish	1.19	0.15	0.05
Spotted Gar	1.17	0.03	0
Longnose Gar	1.14	0.04	.02
Freshwater Drum	0.31	0.07	.02

*Smallmouth and Black Buffalo (*I. niger*)

Species of Special Concern
None

CREEL SURVEYS

Self-Clearing Creel Survey (Sept. '03 – March '04)
Each vehicle entering the Poverty Point State Park was given a questionnaire to be filled out upon completion of a fishing trip. *Details of this survey are given in Part A of the Poverty Point Reservoir Management Plan*. Information from 585 trips was obtained. The average number of anglers per trip was 1.7. The following table (Table 4) shows monthly summaries for number of trips and fish caught.

Table 4. The number of fishing trips and fish caught and harvested by month on Poverty Point Reservoir for 2003 – 2004.

Month	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	Total
Total Trips	87	29	26	73	220	104	46	585
Bass Trips	35	15	0	0	0	7	11	68
Bass Caught	141	60	3	16	1	24	75	320
Crappie Trips	32	14	24	71	217	97	35	490
Crappie Harvested	114	143	289	1,807	4,171	1,321	376	8,221

Nearly 50% of the bass caught were in the slot limit and released. In the months of September, October, February, and March, 21% to 38% of the Largemouth Bass caught were of legal harvest size and released. The bass angling effort was very low in the other months, whereas crappie angling was very popular. Crappie anglers averaged 9.6, 15.2, 11.1, and 8.7 crappie per trip respectively, from November to February.

2005 Recreational Angler Creel Survey
A non-uniform, random access-point creel survey was conducted throughout 2005 at the south and north boat ramps. The survey was designed to provide monthly estimates of catch, harvest, and release by species. Six surveys were conducted each month, with the length of the survey period being five hours. Surveys were done in both the morning and afternoon with morning surveys

beginning two hours after sunrise and afternoon surveys beginning four hours before sunset. Anglers were asked the following questions: duration of trip, species fished for, how many kept and released, how far they drove, and their opinion of the current fish regulations on Poverty Point. A minimum of 10 fish of each species kept were measured to total length (bass, crappie), or inch group (all others). A total of 423 interviews were completed throughout the creel period. There were an estimated 14,500 angler trips in 2005. The harvest data is available upon request from the LDWF District 2 office.

2008 Recreational Angler Creel Survey

The 2008 survey was done identically to the 2005 survey except that only three surveys per month were conducted in the months of August to December instead of six surveys. A total of 377 interviews were conducted on 53 survey days. There was an estimated 27,755 angler hours (10.2 hrs. /acre). Anglers fishing for bass caught 0.7 bass/hr. for an estimated total catch of 21,365 bass with 7,389 being released. Anglers fishing for crappie comprised 57% of the total interviews and spent 15,080 hours fishing for crappie. They harvested an estimated 14,779 crappies or 0.76/hr. Bluegill and Channel Catfish were also harvested frequently by anglers.

2009 Crappie Exploitation Study Creel Survey

A creel survey in conjunction with the crappie exploitation study was conducted in similar fashion to the standardized creel surveys previously conducted on Poverty Point, with the exception that no surveys were conducted June – September due to the low amount of crappie angling during this period. A total of 348 interviews of crappie angling parties were conducted in 48 surveys. Crappie anglers comprised 67% of all angling parties. There were an estimated 23,866 angler hours directed toward crappie (21.8 hrs./ha. or 9.1 hrs./ac.). Anglers harvested an average of 6.3 crappies per trip or 1.33 per hour which expanded to a total of 30,462 crappie during the creel period. Only 3% of anglers had harvested the legal limit of 25 crappie/day and the mean length of harvested crappie was 290 mm (11.4 in.). The survey also revealed that 89% of crappie anglers were satisfied with the current crappie regulations on Poverty Point.

2012 Stock Assessment Creel Survey

This creel survey was a necessary component of the 3-year stock assessment study for crappie and Largemouth Bass. The information collected was used to assess the angling mortality component of the fisheries. The survey was conducted in similar fashion to the 2005 survey described above. A total of 285 interviews were conducted during 52 survey days. Creel survey results indicate that 13% of interviewed anglers were primarily fishing for LMB and 54% were fishing for crappie. Bass anglers caught 0.97 bass per trip but harvested only .01 bass per trip. The results suggested that bass anglers voluntarily release a much larger percentage of LMB than they harvest (92% of legal size fish are released). Survey results indicated that 72% of crappie anglers harvested from 1 - 10 crappie per trip, while 25% of these anglers harvested no crappie at all. The average annual harvest rate for Poverty Point crappie was 2.8 fish per angler trip.

HABITAT EVALUATION

Aquatic Vegetation

Vegetation in Poverty Point is primarily limited to emergent species such as American pondweed (*Potamogeton nodosus*), water pennywort (*Hydrocotyle umbellata*), alligator weed (*Alternanthera philoxeroides*) and water primrose (*Ludwigia repens*) along the shoreline. Even though there is ample shallow water in the reservoir, the high turbidity (visibility less than 14 inches) prevents

excessive growth of submersed species. Water hyacinth (*Eichhornia crassipes*) has also appeared on the lake in small patches but has been controlled with herbicide applications. All aquatic vegetation in Poverty Point Reservoir is currently restricted to shallow shoreline areas in protected coves. The submersed (and invasive) species hydrilla (*Hydrilla verticillata*) was first observed in a cove near the northeast corner of the lake in 2006. It was successfully treated with granular endothall herbicide and has not been observed elsewhere in the lake. The lack of vegetation in Poverty Point could be a limiting factor of fisheries production, especially sport fish species.

Vegetation control historically (none recent) has involved herbicide application on nuisance floating and emergent species in a few shallow protected coves around the lake. The species targeted have little benefit to the fisheries and can be detrimental to the habitat and the recreational users of Poverty Point. In 2009, a total of 52 acres were treated (42 of water hyacinth and ten of alligator weed). No herbicide applications were necessary in 2010 and 2011. A total of 31 acres were treated (20 of alligator weed, six of primrose, and five of pennywort) in 2012. A total of 13 acres of emergent vegetation were treated in 2013, while no treatments have been necessary since. These species have typically been treated with 2,4-D (0.5 gal/acre) and/or glyphosate (0.75 gal/acre) when a waiver is required (March 15 – September 15). Imazapyr (0.5 gal/acre) has become the primary herbicide for alligator weed control in undeveloped areas. Near homes and developed shorelines, imazamox (0.5 gal/acre) is used because it is not harmful to non-target species.

Coverage and Status of Problem Plant Species in 2021
-Alligator weed– minimal amounts growing across the shallow ends of some coves, total coverage less than 5 acres
-Water primrose - minimal amounts growing across the shallow ends of some coves, total coverage less than 5 acres
-Water hyacinth – no significant coverage, small amounts present in various areas
-Water pennywort – no current problems, total coverage less than one acre

Coverage and Status of Beneficial Plant Species in 2021
-Coontail – found in small amounts in shallows of wind-protected coves, coverage is less than optimal for fisheries habitat
-American pondweed – small, scattered patches, provides some shoreline cover for fish

Aquatic Vegetation Prediction for 2022
Aquatic vegetation is expected to continue to be minimal in 2022.

Substrate
Prior to impoundment, the topsoil was removed from the lake bottom, leaving a soil high in clay content. Much of the lake bottom should be suitable for the spawning of nest building fish, including bass and sunfish. The substrate will become softer over time and less suitable for spawning. Prior to impoundment, nine sand beds were placed in protected locations to provide adequate spawning substrate in the future. The sand beds were recommended to be around 4,000 ft^2 in size.

Artificial Structure
Prior to impoundment, approximately 50 large piles of woody debris were constructed throughout the lake bottom. They were covered in dirt in such a way to prevent floating. These structures serve as the major offshore fish habitats, especially in the open main lake area. The tops of many

of the piles can be seen sticking up slightly above the surface, but the majority must be located with the use of sonar and/or a global positioning system. Many of the smaller piles likely no longer exist due to decomposition and wind action, and the condition of the larger piles has not been evaluated. Beginning in 2017, LDWF began placing artificial structure into the lake to enhance the existing habitat and to provide angling opportunities. The locations and descriptions of these structures are listed in Poverty Point Reservoir MP-A.

CONDITION IMBALANCE / PROBLEM

Common Carp, buffalo fish, and more recently Channel Catfish have become very abundant in the lake. The invasive carp and buffalo are known to lower water quality and destroy the spawning habitat of game species. The over-abundance of Channel Catfish is likely limiting their growth, allowing for fewer desirable size fish in the lake. The great numbers of these fish may also be impacting spawning success of nest building game fish species such as bass, crappie, and sunfish. The real impact of these species is not yet fully understood but could potentially be detrimental to the fishery.

CORRECTIVE ACTION NEEDED

There are no practical means of eradicating the above mentioned species from the lake. A proposal to establish a limited commercial fishing season in Poverty Point was sent to the LDWF Commission for review in 2016, and a limited recurring season was allowed beginning in January 2017. The season is open from October 1 through the last day of February. Only gill and trammel nets with 3.5-inch square mesh or larger are allowed. Participation thus far has been low and it is not yet known if this opportunity is providing any benefit in the removal of buffalo and carp. Allowing additional gears for the harvest of Channel Catfish could potentially lead to increased exploitation of smaller size fish, thus reducing the current overcrowded situation which may be limiting growth rates. Experimental sampling with wire net traps, a common recreational gear, was initiated in 2021 to determine their effectiveness at capturing the small Channel Catfish. This gear is not currently allowed in Poverty Point, but could be useful in removal of a significant number of fish if permitted.

RECOMMENDATIONS

1. Continue scheduled standardized sampling.

2. Continue stocking of Florida Largemouth Bass to maintain at least 30% Florida genetic influence as indicated by LDWF sampling.

3. Continue stocking of Hybrid Striped Bass and evaluate growth rates through standardized sampling and age and growth analysis.

4. Plan annual meetings with Poverty Point State Park staff and the Poverty Point Reservoir District to present sampling results and discuss management.

5. Re-evaluate the current regulations for Largemouth Bass whenever new data is obtained to ensure that the population is being managed optimally.

6. Continue efforts for creating artificial reefs. Cooperate with Reservoir District and request assistance with procurement of materials and construction when necessary.

7. Initiate experimental vegetation plantings. The plantings should be done in protected coves and should serve the dual purpose of enhancing fisheries habitat and shoreline erosion control, which is a problem throughout the lake. A good candidate species would be giant bulrush (*Schoenoplectus californicus*).

8. Continue to investigate removal of small Channel Catfish with various gears in an effort to evaluate the appropriateness of allowing certain gears for recreational or commercial fishing.

   Treat nuisance floating and emergent vegetation as needed according to the approved LDWF Aquatic Herbicide Application Procedures (Table 5).

Table 5. LDWF Aquatic Herbicide Application Procedure.

Plant Species	Herbicide	Surfactant
***Salvinia spp*. Alternative 1** Common/Giant Salvinia (April 1 to October 31)	Glyphosate (0.75 gal/acre) Diquat (0.25 gal/acre)	Turbulence (or approved equivalent, 0.25 gal/acre)
***Salvinia spp*. Alternative 2** Common/Giant Salvinia (April 1 to October 31)	Glyphosate (0.75 gal/acre) Flumioxazin (2 oz./acre)	Turbulence (or approved equivalent, 0.25 gal/acre)
***Salvinia spp*. Alternative 3** Common/Giant Salvinia (April 1 to October 31)	MSM (1 oz./acre) Flumioxazin (1 oz./acre)	Turbulence (or approved equivalent, 0.25 gal/acre)
***Salvinia spp*. Alternative 4** Common/Giant Salvinia (November 1 to March 31)	Diquat (0.75 gal/acre)	Nonionic surfactant (0.25 gal/acre)
***Salvinia spp*. Alternative 5** Common/Giant Salvinia (November 1 to March 31)	Flumioxazin (12 oz./acre)	Turbulence (or approved equivalent, 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/Giant Cut Grass (undeveloped areas)	Imazapyr (0.5 gal/acre)	Turbulence (or approved equivalent, 0.25 gal/acre)
Alligator Weed/Giant Cut Grass (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) or Flumioxazin (8 oz./acre)	Nonionic surfactant (0.25 gal/acre) or Turbulence (or approved equivalent, 0.25 gal/acre)
Cuban Bulrush (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	Diquat (1.0 gal/acre) or Flumioxazin (6 oz./acre)	Nonionic surfactant (0.25 gal/acre) or Turbulence (or approved equivalent, 0.25 gal/acre)

APPENDIX A: Summary of Largemouth Bass Population Assessment*

LOUISIANA LARGEMOUTH BASS PROJECT
Poverty Point Reservoir

Every fish population is the product of a unique set of influences, both natural and man-induced. A thorough understanding of those influences and the corresponding population response is essential to good fisheries management. As part of a statewide effort, the Louisiana Department of Wildlife and Fisheries (LDWF) recently completed a study to describe the Poverty Point Reservoir Largemouth Bass (LMB) population. The project included data collection over a three-year period from 2010 – 2012. Population dynamics including relative abundance, spawning success, growth, body condition, mortality, and longevity were measured. Poverty Point Reservoir anglers were also surveyed to determine their collective influence on the LMB population.

Electrofishing gear was used by fisheries biologists to collect LMB from Poverty Point Reservoir each spring of the study. Length and weight measurements were recorded for each fish and ear bones (called otoliths) were removed from approximately 84% of the sampled fish for age and growth analyses. Annual growth rings on the otoliths provide an accurate measurement of fish age. Size and age for all of the sample fish were combined to generate estimates of average growth rate and longevity. Angler surveys were conducted during the sample period to document fishing effort, angler catch rate and harvest rates.

Figure 1 illustrates that Poverty Point Reservoir supports a healthy bass population with some LMB reaching 23 inches. Good representation of fish in the 12 to 20-inch range was observed in all three years of the project. It is important to note that spring sampling typically does not include fingerling size bass. However, the recurring presence of small 4 to 9 inch (age-1) bass indicates successful reproduction.

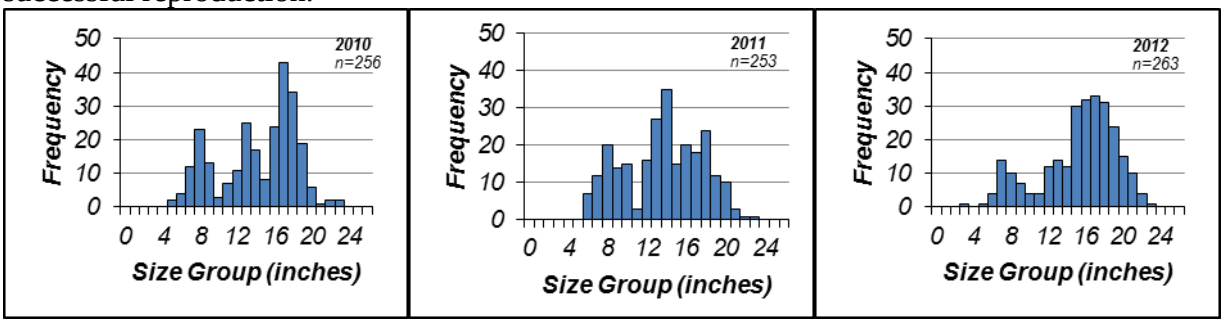


Figure 1. Annual length distributions of Largemouth Bass collected from Poverty Point Reservoir during spring electrofishing surveys in 2010-2012. Sample sizes (n) are presented in each graphic.

Age structure of the complete electrofishing sample (2010-2012) is shown in Figure 2. Age-1 and age-2 bass comprised 45% of the total sample. The majority of the age 9+ fish were males. While bass up to 11 years old were found, only a small percentage of Poverty Point Reservoir LMB were 8 years and older. Average length at age for Poverty Point Reservoir bass is provided in Table 1. Growth is rapid through age-5, and then slows to only a half inch or less in length per year.

Body condition for Poverty Point Reservoir bass can be described as very robust. Good physical condition of bass generally is the product of an adequate food supply that is readily available to predation.

Table 1. Length at age of Poverty Point Reservoir Largemouth Bass.

Age	Length in Inches
1.0	9.3
2.0	13.4
3.0	15.9
4.0	17.5
5.0	18.5
6.0	19.1
7.0	19.5
8.0	19.7
9.0	19.9
10.0	20.0

Recruitment of age-1 LMB in Poverty Point Reservoir is moderately stable. Contributing factors include quality spawning substrate and adequate cover for fingerlings.

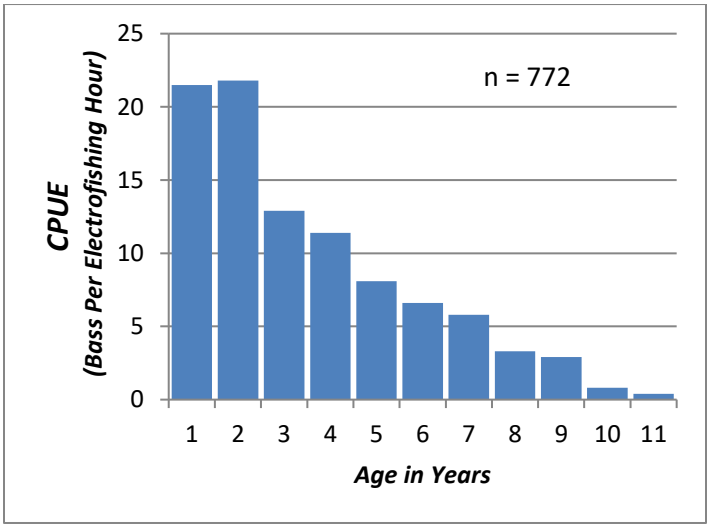


Figure 2. The age structure of Poverty Point Reservoir Bass.

The rate at which fish die each year is referred to as mortality. Mortality consists of two parts: natural mortality (predation, disease) and fishing mortality (angler harvest and discard mortality). Results of the study indicate that the total mortality rate for Poverty Point Reservoir LMB is lower than ten other recently sampled Louisiana lakes at 34% per year. The following example is provided to illustrate the effect: at 34% mortality, if you start with 100 age-1 Poverty Point Reservoir bass, 19 will remain alive by age 5.

The results of this study suggest that the Poverty Point Reservoir LMB population has a total mortality that is much more influenced by natural factors than by fishing related mortalities (31% natural and 3% fishing, respectively). The fishing mortality rate comes from two sources; 1) harvest and 2) discard (post release) mortality. Creel survey results indicate that 13% of interviewed anglers were primarily fishing for largemouth bass. The results also suggest that these same bass anglers voluntarily release a much larger percentage of LMB than they harvest (92% of legal size fish are released).

SUMMARY

It is important to note that LMB populations and their fisheries are not only influenced by fishing effort, but also by human and environmental factors. The type and degree of human activity within watersheds, riparian zones, and specific waterbodies can affect LMB populations by altering critical habitats. Additional factors influencing LMB populations include aquatic vegetation coverage, water level management, supplemental LMB stocking programs, and habitat improvements. The frequency of floods, drought, and storms can also influence LMB populations. While consideration of these factors are important in effective fisheries management, evaluating how these factors affect the Poverty Point Reservoir LMB population/fishery is beyond the scope of this report.

Length distribution, age structure, growth rate, and mortality rate were found to be at levels that provide a stable LMB population in Poverty Point Reservoir. The population is much more influenced by natural factors than by fishing related mortalities. The current LMB regulation was implemented to use angler harvest as a management tool to increase abundance of bass larger than 19". Angler harvest is critical for effectiveness of the regulation, but the results of this project indicate that Poverty Point Reservoir LMB harvest is lacking. Anglers are not utilizing the current Poverty Point Reservoir LMB regulations as a management tool. Further, if Poverty Point Reservoir anglers remain hesitant to harvest LMB, the effectiveness of any size regulation as a management tool would be severely limited.

* West, Joe, S. Beck, and D. Davis. 2013. Poverty Point Reservoir largemouth bass: population and fishery characteristics with size regulation simulations. Fisheries Research and Assessment Section. LDWF.

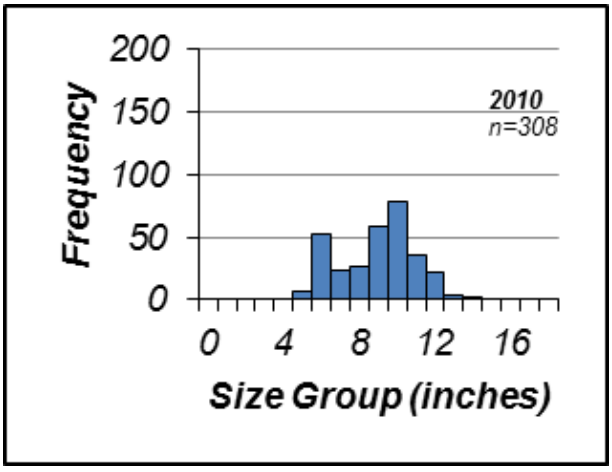
APPENDIX B: Summary of Crappie Population Assessment*

LOUISIANA CRAPPIE PROJECT
Poverty Point Reservoir

Every fish population is the product of a unique set of influences, both natural and man-induced. A thorough understanding of those influences and the corresponding population response is essential to good fisheries management. As part of a statewide effort, the Louisiana Department of Wildlife and Fisheries (LDWF) recently completed a study to describe the Poverty Point Black Crappie and White Crappie (crappie) populations. The project included data collection over a three-year period from 2010 – 2012. Population dynamics including relative abundance, spawning success, growth, body condition, mortality, and longevity were measured. Anglers were also surveyed to determine their collective influence on the crappie population.

Leadnet fishing gear was used to collect crappie each fall. Length and weight measurements were recorded for each fish and ear bones (called otoliths) were removed from approximately 31% of the sampled fish for age and growth analyses. Annual growth rings on the otoliths provide an accurate measurement of fish age. Since both species of crappie are managed under the same harvest regulations, size and age for all of the sample fish were combined to generate estimates of average growth rate and longevity. Angler surveys were conducted during 2012 to document fishing effort, angler catch rate and harvest rates.

Figure 1 illustrates that Poverty Point supports a healthy crappie population with some individual crappie reaching at least 15 inches. Six to 12-inch fish were observed in all three years of the project. It is important to note that fall leadnet sampling typically does not include young-of-the-year size crappie. However, the recurring presence of small 5 to 10 inch (age-1) crappie indicates successful reproduction from the previous year.



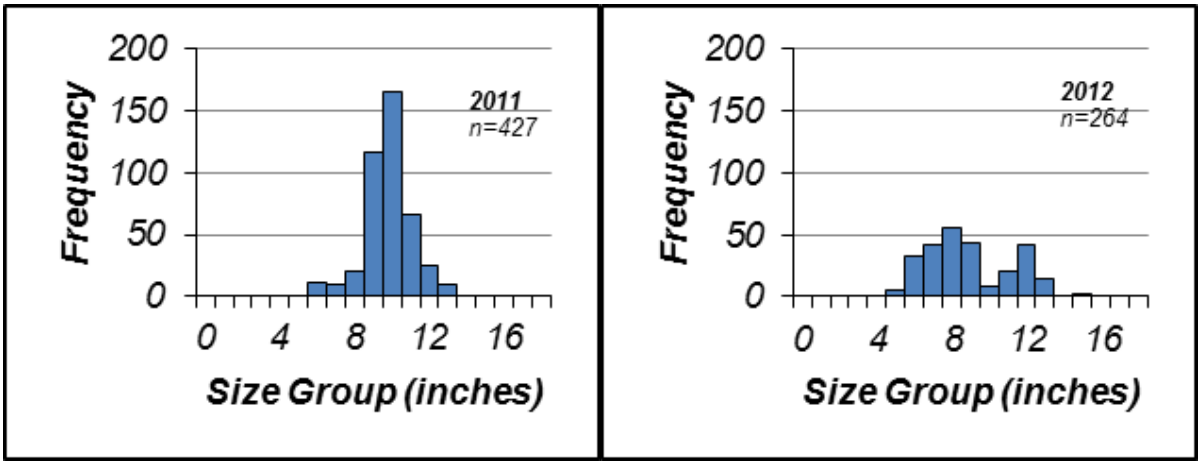


Figure 1. Length distributions of crappie collected from Poverty Point Reservoir during fall leadnet surveys in 2010-2012. Sample sizes (*n*) are presented in each graphic.

Age structure of the complete leadnet sample (2010-2012) is shown in Figure 2. Ninety-three percent of the total sample was comprised of age-0 and age-1 crappie. While crappie up to 4 years of age were found, only a small percentage of crappie were 2 years and older. Average age at length is provided in Table 1. Growth is extremely rapid through age-2, but then slows to only two inches or less in length per year.

Body condition for Poverty Point crappie can be described as robust. Good physical condition of crappie generally is the product of an adequate food supply that is readily available to predation.

Poverty Point crappie exhibited moderately stable recruitment to age-1 during the three-year study. Consistently favorable spawning conditions for crappie are attributed.

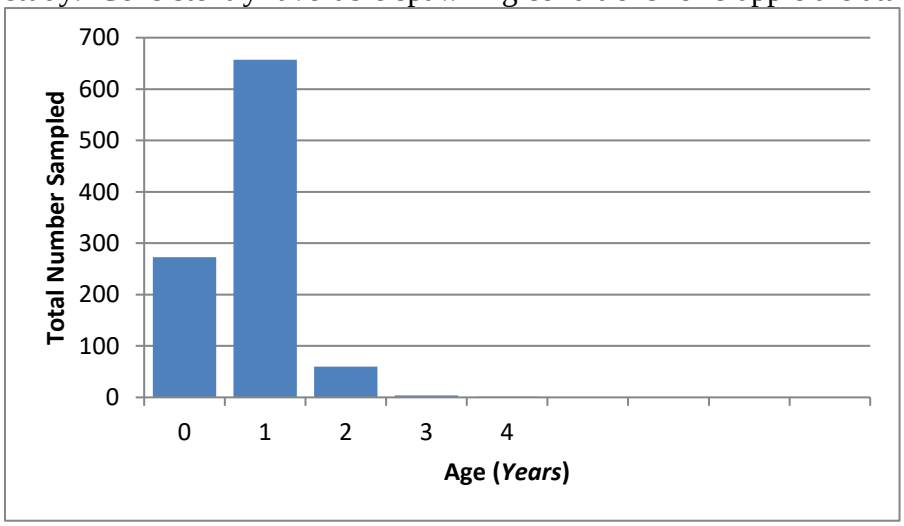


Figure 2. The age structure of Poverty Point Reservoir crappie 2010 - 2012.

Age in Years	Length in Inches
0.82	8.0
1.26	10.0

2.19	12.0

Table 1. Average age at length for Poverty Point Reservoir crappie.

The rate at which fish die each year is referred to as mortality. Mortality consists of two parts: natural mortality (predation, disease) and fishing mortality (angler harvest and post-release mortality). Results of the study indicate that the total mortality rate for crappie is high (93%) when compared to other recently sampled Louisiana waterbodies. The following example is provided to illustrate the effect. At 93% mortality, if you start with 100 age-1 fish, 7 will remain alive by age-2, and less than one fish will remain alive by age-3.

The results of this study suggest that the Poverty Point Reservoir crappie population has a total mortality that is much more influenced by fishing mortality than by natural factors (63% and 30%, respectively). The fishing mortality rate was determined to be 63% per year. This rate comes from two sources; 1) harvest and 2) post release mortality.

Louisiana crappie fisheries are described as harvest oriented. According to the 2000 Louisiana Crappie Fishing Survey, 74% of crappie anglers reported that they harvested crappie for food. The size distribution of angler harvested crappie from Poverty Point during 2012 is shown in Figure 3. While some small crappie were observed in the surveys, most were 8 inches and larger in length with 9 to 12 inch crappie dominating the catch. Survey results also indicated that 72% of crappie anglers harvested from 1 - 10 crappie per trip, while 25% of the anglers harvested no crappie at all (Figure 3). The average annual harvest rate for Poverty Point Reservoir crappie was 2.8 fish per crappie angler per trip.

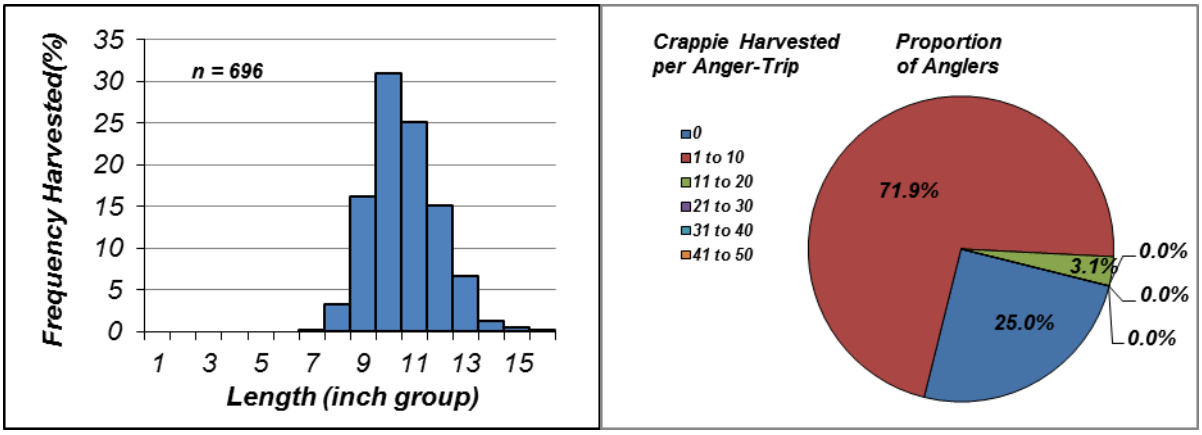


Figure 3. Size frequency of crappie harvested and catch per angler-trip for Poverty Point Reservoir crappie anglers derived from the creel survey conducted in 2012. Twenty-five percent of anglers interviewed harvested no crappie.

Population simulations illustrating the effects of two theoretical size regulations were calculated using the 93% mortality rate determined for Poverty Point crappie. Estimated effects from a 10“minimum length limit (MLL) are negligible. Due to the rapid growth rate of Poverty Point Reservoir crappie, angler catch is already mostly comprised of crappie larger than 10”. Anglers

would be required to release 89% of fish caught under a 12" MLL and harvest per trip would be reduced by 63%.

SUMMARY

It is important to note that crappie populations and their fisheries are not only influenced by fishing effort, but also by anthropogenic and environmental factors. The type and degree of human activity within watersheds, riparian zones, and specific waterbodies can affect crappie populations by altering critical habitats. Additional factors influencing crappie populations include aquatic vegetation coverage, water level management, and habitat improvements. The frequency of floods, drought, and hurricanes can also influence crappie populations. While consideration of these factors is important in effective fisheries management, evaluating how these factors affect the Poverty Point Reservoir crappie population and fishery is beyond the scope of this report.

This population is much more influenced by fishing related mortalities than by natural factors. If natural mortality remains constant, no increase in crappie yield should be expected from the protection of a 10" or 12" minimum length limit. Moreover, the required release rates associated with both minimum length limits (1% and 89% respectively) would be poorly received by anglers that pursue crappie for food. The reduction in daily creel necessary for any impact would also have poor angler acceptance. No change could be expected unless the creel limit is lower than the average angler's catch of 2.8 fish per day.

Size distribution, recruitment levels, and fish condition were found to be at levels that indicate a stable and healthy crappie population in Poverty Point Reservoir. The fishery is currently managed with no size restrictions and a 25 fish per day harvest limit. Given the dynamics of this crappie population and fishery, no change in angler harvest regulation is recommended.

* West, Joe, S. Beck, and D. Davis. 2013. Poverty Point Reservoir crappie: population and fishery characteristics with size regulation simulations. Fisheries Research and Assessment Section. LDWF.

APPENDIX C: Abstract of Crappie Exploitation Study

An Analysis of Exploitation and Harvest of White Crappie in Poverty Point Reservoir, Louisiana
Ryan S. Daniel, Louisiana Department of Wildlife and Fisheries, Inland Fisheries Division, 368 CenturyLink Dr., Monroe, LA 71203.

Abstract
Because of growing angler concern regarding excessive crappie (*Pomoxis* spp.) harvest in Poverty Point Reservoir, Louisiana, we estimated exploitation rate of White Crappie (*P.* annularis) from 1 January – 31 May, 2009, and gathered data on angler characteristics throughout the year at this relatively new reservoir. A reward-tag approach was utilized to assess exploitation, while angler characteristics were determined through a stratified, random, access-point creel survey. White crappie (N=243) were tagged from January – March 2009 with Floy T-bar anchor tags labeled with REWARD and a sequential tag number. A total of 135 tagged crappie were harvested and reported by anglers by May 31, 2009. Exploitation was estimated at 59.3% based on the assumption of a 10% non-reporting rate and no mortality, but could have exceeded 70% if tagging mortality or non-reporting were higher than estimated. The creel survey revealed that crappie anglers harvested 1.33 crappie per hour, with an average total length of 290 mm. Angler effort for crappie was estimated at 21.8 hrs./ha within the eight-month creel period. Fishing mortality and harvest data obtained from this study will supplement future age and growth data to obtain an accurate assessment of total annual mortality, and be utilized in simulations to model the effects of various harvest regulations on the crappie population in Poverty Point Reservoir. This study will also be used as a model in the investigation of specialized crappie management in Louisiana.

Daniel, R.S., 2011. An Analysis of Exploitation and Harvest of White Crappie in Poverty Point Reservoir, Louisiana. Proc. Annu. Conf. Southeast. Fish and Wildl. Agencies 65:136 – 142.