



# Arkabutla Reservoir 2023

## REEL FACTS

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**General Information:** Arkabutla Reservoir is one of four flood control reservoirs (FCRs) in north Mississippi. Built by the US Army Corps of Engineers (COE) in 1943 on the Coldwater River, it is the smallest FCR with a summer pool of 11,870 ac. Water level follows an annual rule curve but deviates from it due to local precipitation and COE spillway gate operations. The reservoir is lowered in fall to winter pool (4,640 ac); flood pool is 33,400 ac. Arkabutla is a popular destination for crappie and catfish anglers.

**Location/Contact:** 8 miles northwest of Coldwater, MS. COE office (662)-562-6261.

**Fishery Management:** Crappie, catfish, Largemouth Bass, and White Bass.

**Purchase a Fishing License:** [https://www.ms.gov/mdwfp/hunting\\_fishing/](https://www.ms.gov/mdwfp/hunting_fishing/)

### Amenities

- 7 concrete fee ramps.
- Bait shop in Hernando.

### Creel and Size Limits

*The following apply to the reservoir, not the spillway.*

- Crappie: Must be over 12 inches. 15 crappie per day per angler; no more than 40 crappie per boat (3 or more anglers).
- Largemouth Bass: No length limit and 10 bass per day per angler.
- White and Yellow Bass: No limits.
- Bream: No length limit and 100 per day per angler.
- Catfish: No limits.

### Regulations

- No more than 25 jugs and no more than 25 yo-yos may be fished per person with no more than 2 hooks per device. Jugs and yo-yos must be tagged with name and address and must be attended (in sight) during daylight hours.
- Grabbling season May 1 – July 15; only wooden structures allowed.
- No more than 4 poles may be fished per person; no more than 2 hooks or lures per pole.
- Spillway: Consult Outdoor Digest

### Fishing Tips

#### General

- Best fishing is usually in the spring and fall.
- Fish near deeper water if the water is falling; fish shallower if it is rising.

#### Crappie

- Target shoreline cover in spring in creek arms and coves. In summer and fall, troll for suspended fish in creek mouths and the main reservoir.

#### Largemouth Bass

- Target cover in coves in spring, points in summer, and tributaries in fall.

#### Bream

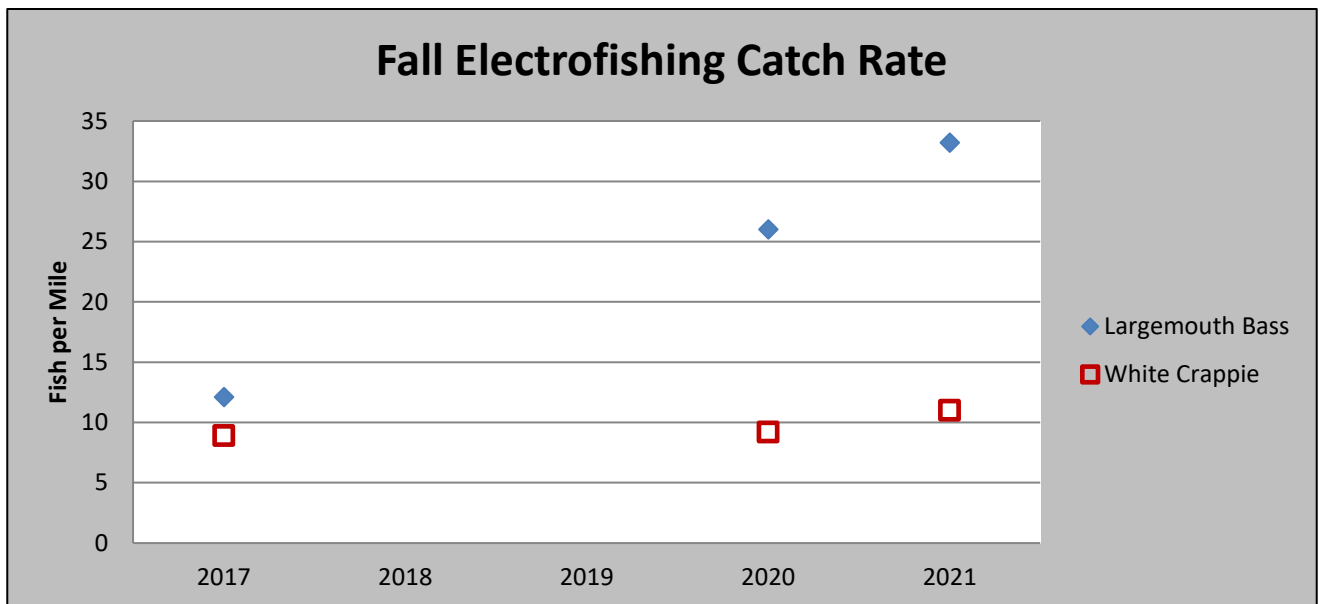
- Fish crickets or redworms near cover.

#### Catfish

- Fish worms or cut bait in tributaries during runoff or over mudflats if no runoff.

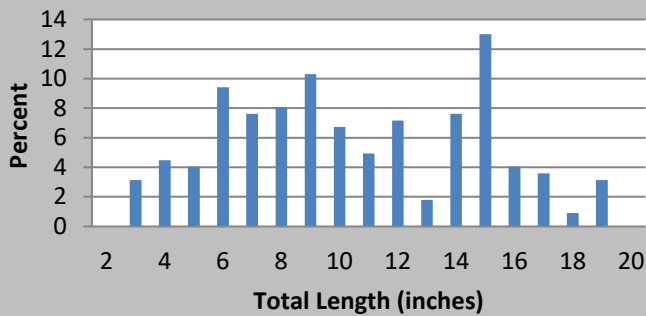
Species	# of fish collected	% of sample	Average Length (inches)	Maximum Length (inches)	Average Weight (pounds)	Catch Rate – Adult fish (fish/mile)
Gizzard Shad	455	33	5.5	11.4	0.1	23
Bluegill	393	28	4.5	8.1	0.1	48
Largemouth Bass	223	16	11.0	19.9	1.1	33
White Crappie	101	7	8.3	14.4	0.5	11
Black Crappie	75	5	6.5	13.4	0.2	8
Blue Catfish	52	4	23.4	36.4	5.7	6
Channel Catfish	32	2	15.6	24.3	1.4	6
White Bass	26	2	10.2	16.8	0.7	5
Flathead Catfish	11	1	9.3	14.1	0.4	<1
Redear Sunfish	7	1	5.5	8.0	0.1	1
Threadfin Shad	4	0	3.4	4.3	0.0	1 (all)
Yellow Bass	2	0	4.3	4.7	0.0	<1

**Above:** Fall 2021 electrofishing results. Although abundant since first seen in 2017, Threadfin Shad had a big die-off during the February 2021 cold snap. High water since 2018 has resulted in higher numbers of bluegill and bass as they benefitted most from flooded vegetation. Small Gizzard Shad and Bluegill provided abundant forage for predators like bass and crappie.

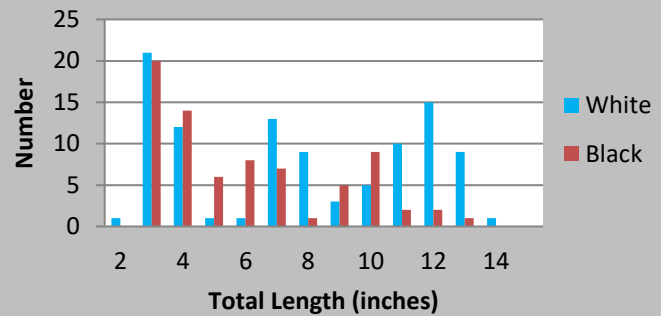


**Above:** Trends in fall electrofishing catch rates for adult fish. Largemouth Bass numbers have increased with spring flooding since 2018 and minimal angler harvest. Numbers of adult White Crappie have remained more stable, not because of poor reproduction during spring flooding, but due to reservoir releases and (mainly) angler harvest.

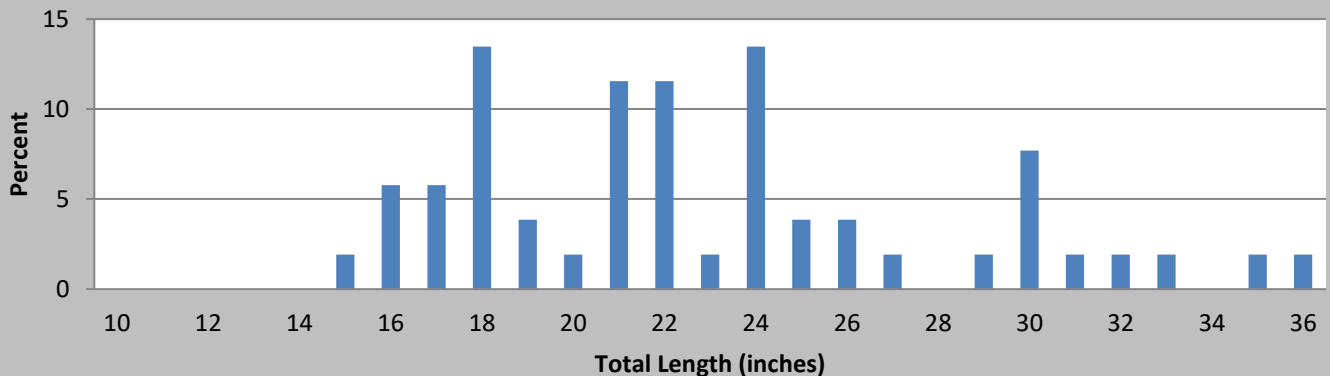
## Largemouth Bass



## Crappies



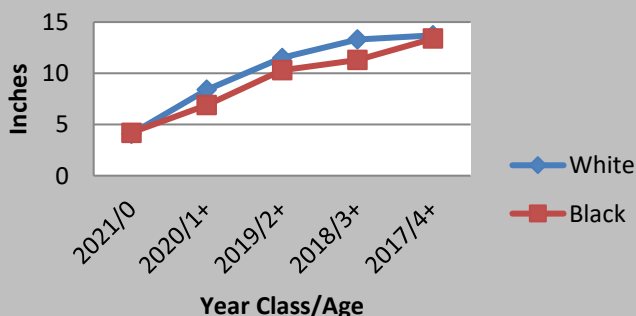
## Blue Catfish



**Above:** Length distributions, fall electrofishing, 2021. Most bass were from recent year classes. There have been good spawns of bass, crappie, and many other fish since 2018. FCR bass populations fluctuate mostly from environmental factors (mainly water levels) since angler harvest is low. Blue Catfish (“white humpbacks” or “white river cats”) of good size were common.

**Below:** Growth rates for crappie, fall 2021. Not all crappie were aged. Odd growth patterns (graph, left) were due to small sample sizes of older fish (table, right). Crappie spawning success is usually better during high water, which has occurred 2018 - 2020. Black Crappie grew slower than White Crappie, which is normal for the FCRs. Most White Crappie grow over 12 inches just after their third “birthday”; it takes about a year longer for Black Crappie.

## Crappies, Length at Age



Year Class	Age	# White Crappie aged	Average Length (inches)	# Black Crappie aged	Average Length (inches)
2021	0	20	4.1	31	4.2
2020	1+	26	8.4	18	6.9
2019	2+	20	11.5	15	10.3
2018	3+	11	13.3	2	11.3
2017	4+	3	13.7	1	13.4

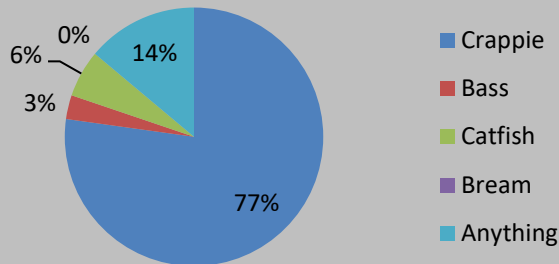
**Fish Harvest and Fishing Effort:** MDWFP's March – October 2020 angler creel survey was suspended in early April due to COVID19. Only March 2020 data were analyzed. Most anglers fished for crappie (1, right). Crappie and catfish were 100% of harvest (2, right). Arkabutla crappie usually average the largest of the FCRs (below, top), and it ranks in the top 5 trophy crappie lakes nationally.

March harvest and effort rose 177% and 80%, respectively, since the 2016 survey (3, right). However, the reservoir was smaller in March 2020, so fishing pressure (hours/acre) rose 407% (4, right). Due to COVID19, many people were staying at home and children were out of school, but the FCRs were open, so people went fishing (below, bottom). Many states have reported a “COVID bump” in fishing during the pandemic. March anglers fished about 88,700 hr and kept about 67,400 lb of fish.

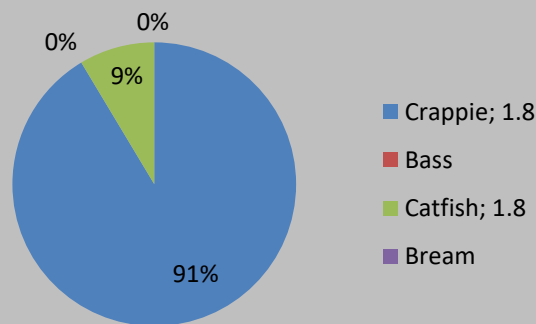
Although creel data were not collected past March, MDWFP site visits and reports from several sources indicated fishing effort and harvest fell during spring high water. After the water was drawn back down, effort and harvest rose and likely peaked in summer. This pattern has been typical of all the FCRs during flood years.



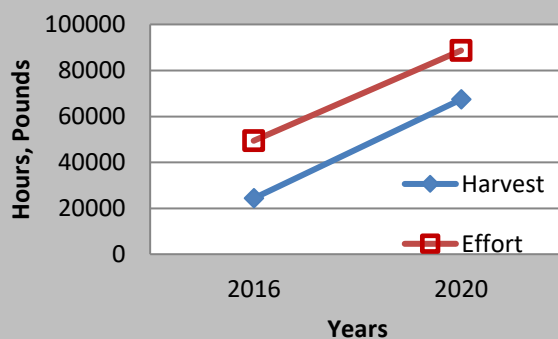
## 1 Targeted Species



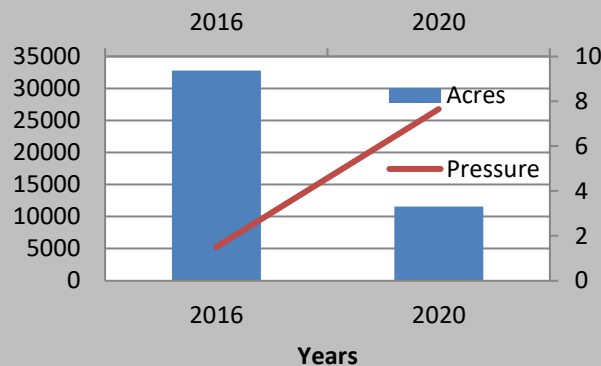
## 2 Harvest: % Wt; Avg Wt, lb



## 3 March Harvest and Fishing Effort, Arkabutla



## 4 March Acres and Fishing Pressure, Arkabutla



**Fishery:** Nearly two-thirds of anglers in March 2020 were from surrounding counties, with most of the rest from the Greater Memphis area or out-of-state (below). The average fishing party was 1.9 anglers that drove 61.4 miles, one way, and spent \$37.38 per person on out-of-pocket expenses (fuel, food, ice, bait, etc.). Costs rose with distance traveled. Based on fishing effort, trip length, and cost per person, total angler out-of-pocket expenditures were about \$737,000 just in March.

March angler origin percentages were near prior annual figures, except yearly data includes more MS counties, and the percentage of out-of-state anglers usually declines after spring.

Area	Parties	Percent	Miles/party	\$/person
Surrounding counties				
Desoto	22	40.7	17.9	\$17.78
Tate	12	22.2	12.5	15.68
Other MS counties				
Marshall	1	1.9	40.0	25.00
Panola	1	1.9	35.0	30.00
Memphis area (exc. Desoto)	9	16.7	50.0	46.79
Other out of state	9	16.7	249.4	95.58
Total/avg	54		61.4	\$37.38

**Lake Characteristics:** Arkabutla normally fluctuates 10 ft yearly following a “rule curve” based on seasonal rainfall patterns. For water levels (rule curve vs actual water level), see <http://www.mvk-wc.usace.army.mil/docs/bullet.txt> for a table or <http://www.mvk-wc.usace.army.mil/plots/arkaplot.png> for a graph. Due to its shallowness and large watershed, Arkabutla exceeds its emergency spillway more often than the other FCRs. Most recently, it has overflowed in 2016, 2018, and 2019. Rapid fluctuations can make it challenging to find and pattern fish.

Drawdowns and droughts let moist soil vegetation colonize mudflats (below left) for fish habitat when water levels rise again. Flooding (below right) expands fish habitat but reduces angler access. Aquatic vegetation is scarce; non-native water hyacinth was illegally introduced but has not yet become problematic. It is being monitored and controlled by MDWFP and COE. The fluctuation zone (winter to summer pool) has very little cover other than dead timber, some live trees and shrubs, and colonized vegetation.





**Lake Characteristics:** Arkabutla's rule curve both rises and falls a month later than the other FCRs due to its shallowness and tendency to flood, often making for low water during the spring spawning season and/or limiting vegetation colonization on mudflats before frost during the fall drawdown. However, the Arkabutla Reservoir COE collects materials for a Habitat Day in winter when the water is low. These materials are placed in the fluctuation zone with the assistance of MDWFP and volunteers (right, top) to provide fish habitat when the water comes back up. Although beneficial, these artificial structures do not begin to replace the quantity or quality of habitat created by natural vegetation colonized during low water periods or flooded during high water events.



A rare event, Arkabutla froze over in February 2021 (right, bottom). Threadfin Shad suffered a significant winterkill (page 2), but more cold-tolerant Gizzard Shad were unaffected.

**Spillway:** The reservoir spillway (below, left) is also a popular fishing destination, mostly for catfish and crappie by bank anglers. Crappie in the spillway are dependent on reservoir releases and are caught mostly in winter and early spring; catfish are more common in summer. A pier by Elbow Creek and a concrete ramp into the Coldwater River below the dam provide anglers access.

The Coldwater River allows entry into the spillway by many wide-ranging fishes, such as Asian carps (below, right; Silver Carp, top, Bighead Carp, bottom) from the Mississippi River. New regulations prohibit anglers from keeping alive bait fish captured in the spillway that could be moved to other waters to prevent the spread of these nuisance, non-native fishes. Uncommon species in the spillway may include Paddlefish, Striped Bass, and Hybrid Striped Bass.

