Arkabutla Reservoir 2018

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/

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

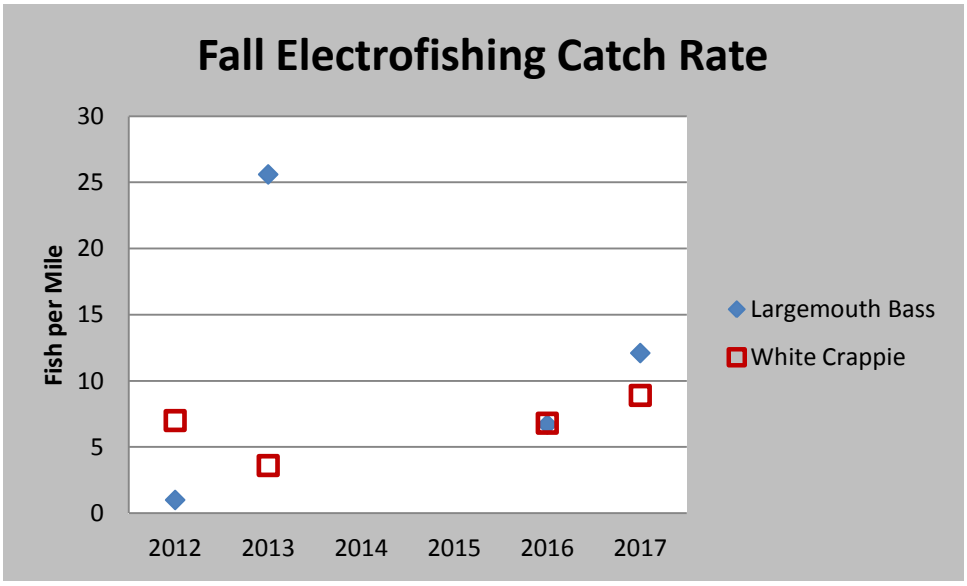
- Fish crickets or redworms near cover.

Catfish

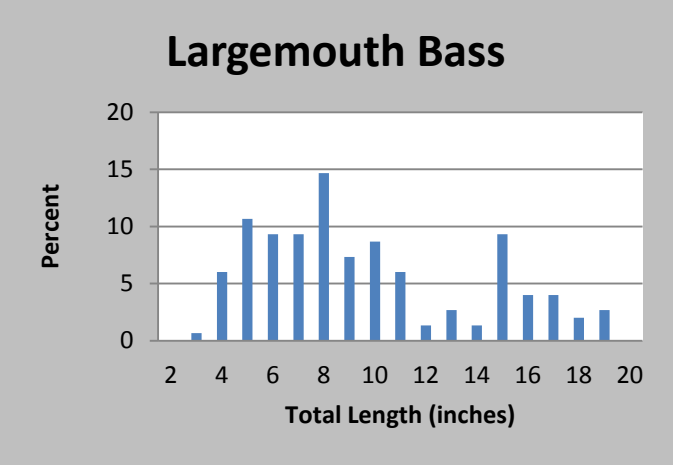
- Fish worms or cut bait in tributaries during runoff or over mudflats if no runoff.

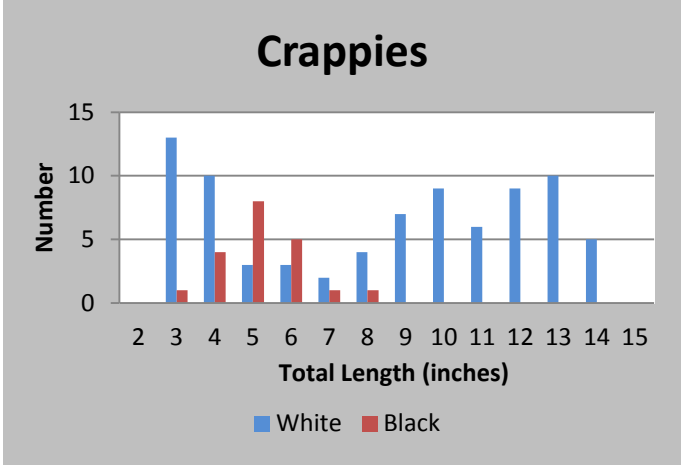
Species	# of fish collected	% of sample	Average Length (inches)	Maximum Length (inches)	Average Weight (pounds)	Catch Rate – Adult fish (fish/mile)
Threadfin Shad	629	35.4	1.3	4.0	<<0.1	89.4 all
Gizzard Shad	501	28.2	9.1	12.4	0.2	5.2
Bluegill	288	16.2	4.5	6.4	0.1	12.5
Largemouth Bass	150	8.5	11.1	19.3	1.0	12.1
White Crappie	81	4.6	10.9	14.8	0.7	8.9
Blue Catfish	35	2.0	23.7	35.9	5.6	4.8
White Bass	32	1.8	8.2	16.2	0.3	2.5
Flathead Catfish	20	1.1	13.5	31.5	1.4	1.2
Black Crappie	20	1.1	6.1	8.1	0.1	2.5
Channel Catfish	14	0.8	11.8	18.5	0.6	1.5
Yellow Bass	3	0.2	4.4	4.4	<0.1	0.3
Spotted Bass	2	0.1	6.6	6.9	0.1	0.0

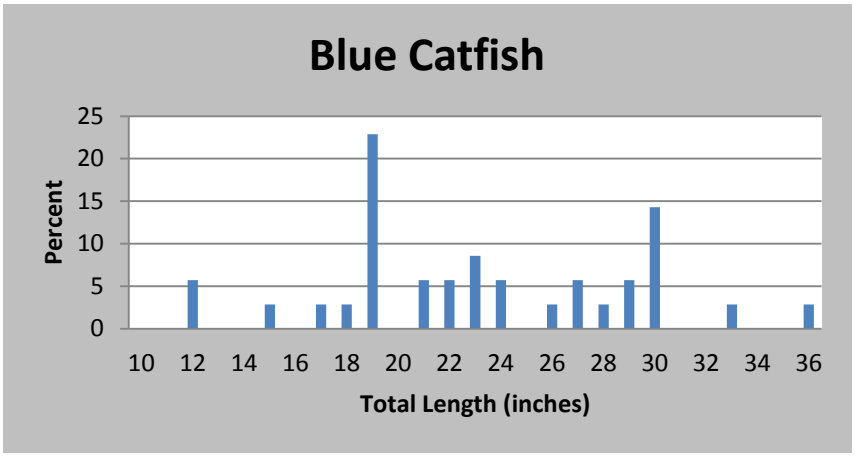
Above: Fall 2017 electrofishing results. Threadfin Shad were seen for the first time, likely from fish stocked in private waters escaping into the watershed. They were the most abundant fish seen, but were very small. Young-of-year (YOY) bass, crappie, and bream numbers rose from 2016; despite low water, YOY benefitted from flooded vegetation.



Above: Trends in fall electrofishing catch rates for adult fish. Largemouth Bass over 8 inches rose sharply from the 2012 drought to 2013 when thousands of acres of vegetation were flooded. White Crappie also spawned heavily in 2013, but did not grow to adult size that year. Bass and crappie catch rates rose from 2016 to 2017 as 2016 YOY grew to larger sizes.

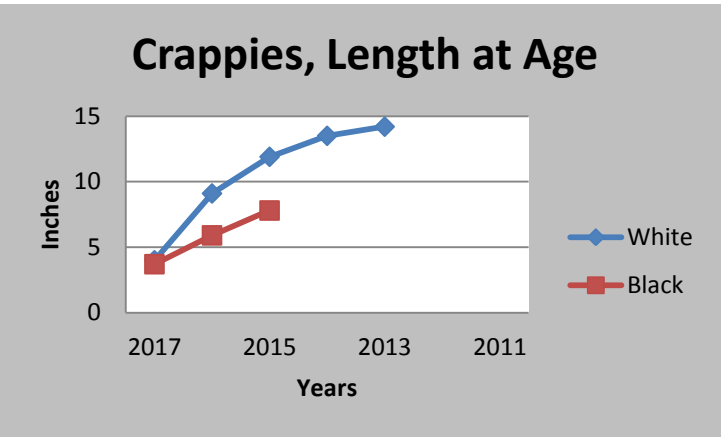






Above: Length distributions, fall electrofishing, 2017. Bass from the 2012 and 2013 year classes were 15 – 19 inches. There have been good spawns of bass, crappie, and other fish since 2013. Blue Catfish ("white humpbacks" or "white river cats") of good size were common.

Below: Growth rates for White Crappie and Black Crappie, fall 2017. There have been good White Crappie spawns 2013 – 2017. Black Crappie spawn best when large areas of vegetation are flooded, which occurred in spring, 2016. No White Crappie from the big 2009 year class were seen; these fish would be over 8 years old. No fish from weak 2010 – 2011 year classes were seen either.

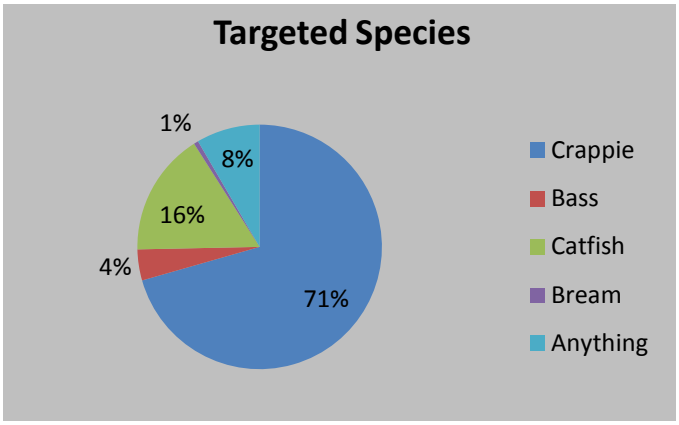


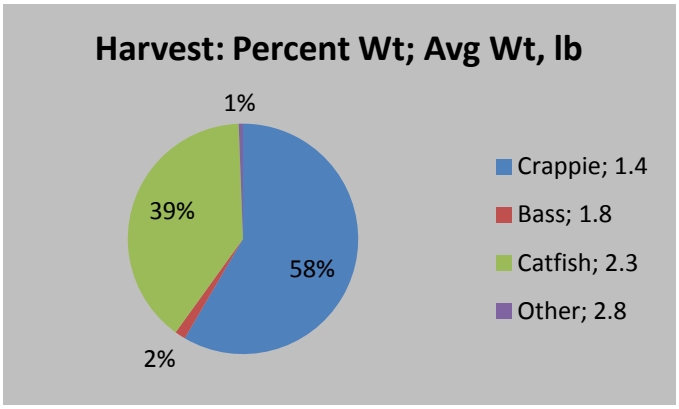
Year Class	Age	# White Crappie aged	Average Length (inches)	# Black Crappie aged	Average Length (inches)
2017	0	21	4.0	4	3.7
2016	1+	29	9.1	15	5.9
2015	2+	11	11.9	1	7.8
2014	3+	14	13.5	0	-
2013	4+	3	14.2	0	-

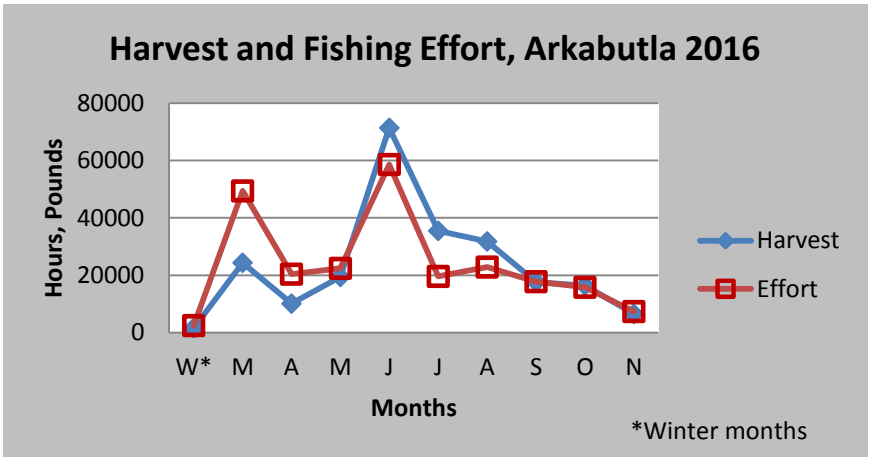
Fish Harvest and Fishing Effort: Most anglers fished for crappie in 2016 (right, top). Crappie and catfish were 97% of harvest (right, bottom). Arkabutla crappie usually average the largest of the FCRs, and it ranks in the top 5 trophy crappie lakes nationally.

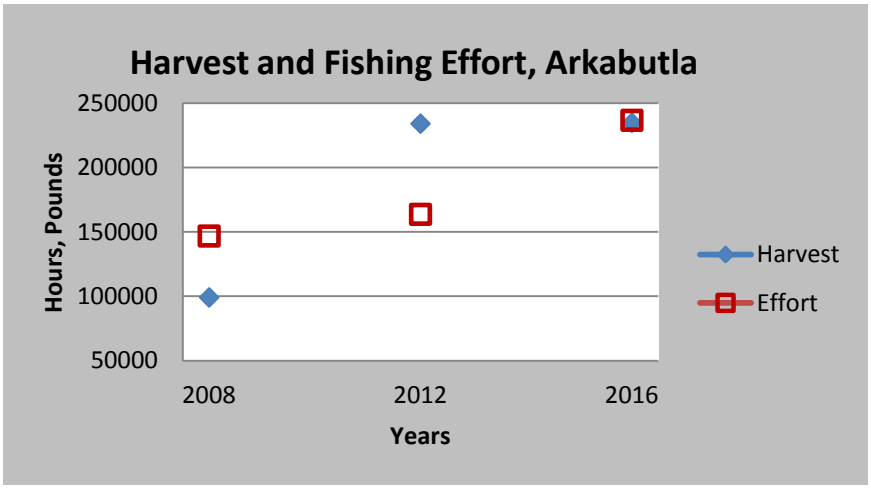
Harvest and effort varied monthly (middle). Effort exceeded harvest in spring during flooding, but harvest exceeded effort as the water fell; peak harvest and effort were in June. Anglers fished about 237,000 hr and kept about 235,000 lb of fish.

Harvest rose 137% and effort rose 61% from 2008 to 2016 (bottom). Effort exceeded harvest in 2008 after several years of low water and poor spawning success. Extreme low water in 2012 concentrated fish for angler harvest from big year classes in 2008 and 2009. Good crappie spawns since 2012 sustained fishing success in 2016; harvest and effort were so close that graph markers overlapped.









Fishery: Two-thirds of Arkabutla anglers in 2016 were from surrounding counties, with most of the other third from the Greater Memphis area (below). The average fishing party was 1.8 anglers that drove 33.6 miles, one way, and spent $22.88 per person on out-of-pocket expenses (fuel, food, ice, bait, etc.). Costs usually rose with distance traveled (below). Based on annual fishing effort, trip length, and cost per person, Arkabutla anglers spent over $1.2 million in 2016, not counting rods, reels, boats, licenses, etc.

Area	Parties	Percent	Miles/party	$/person
Surrounding counties				
Desoto	164	42.5	23.2	$17.78
Tate	91	23.6	13.5	14.21
Other MS counties				
Marshall	10	2.6	47.5	25.00
Panola	6	1.6	37.7	25.91
Tunica	5	1.3	34.2	30.00
Others (5)	7	1.8	64.3	32.14
Memphis area (exc. Desoto)	81	21.0	45.9	29.86
Other out of state	22	5.7	131.1	54.59
Total/avg	386		33.6	$22.88

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. 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 after water levels rise. Flooding (below right) expands fish habitat. 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 spring spawning season and/or limiting vegetation colonization on mudflats before frost. However, the Arkabutla Reservoir COE collects materials (right, top) 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, bottom) 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 naturally colonized vegetation during low water periods or flooded during high water events.

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.