



Sardis Reservoir 2023

REEL FACTS

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General Information: Sardis Reservoir is one of four flood control reservoirs (FCRs) in north Mississippi. Built by the US Army Corps of Engineers (COE) in 1939 on the Little Tallahatchie River, it is the oldest FCR with a summer pool of 32,100 ac. Water levels follow an annual rule curve, but deviate from it due to local precipitation and COE spillway gate operations. The reservoir is lowered in fall to winter pool (10,700 ac); flood pool is 58,500 ac. Sardis is the state's most popular angling destination. Unique to Sardis is the 400 ac Lower Lake below the spillway.

Location/Contact: 12 miles northwest of Oxford, MS. COE office (662) 563-4531.

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

Purchase a Fishing License: https://www.ms.gov/mdwfp/hunting_fishing/

Amenities

- 12 concrete fee ramps.
- Bait shops in Oxford, Sardis, Holly Springs, Batesville, etc.

Creel and Size Limits

The following apply to the reservoir, but not the spillway or Lower Lake.

- 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 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 the license holder's MDWFP number or the angler's name and address. Gear 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 and Lower Lake: 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, main reservoir points in summer, and tributaries in fall.

Bream

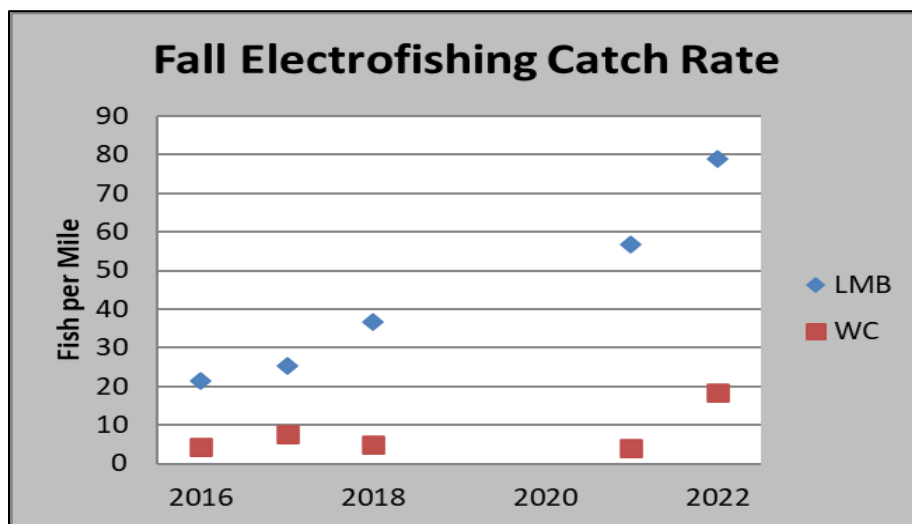
- Fish crickets or redworms near cover.

Catfish

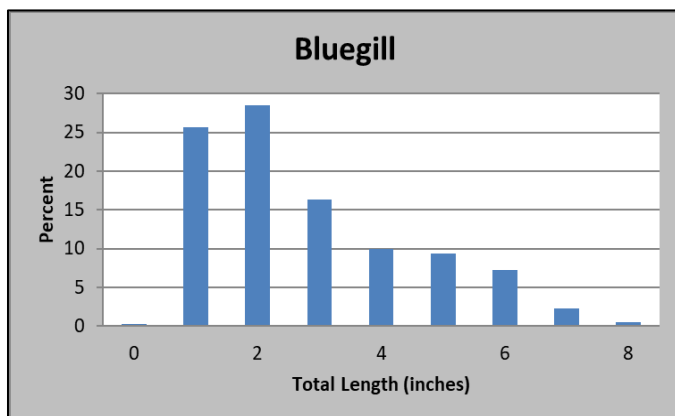
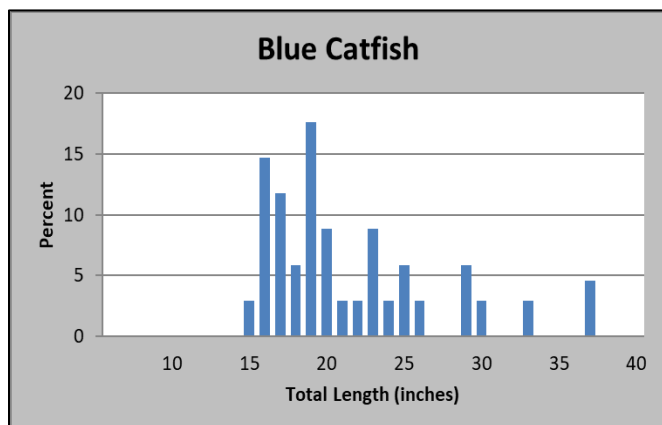
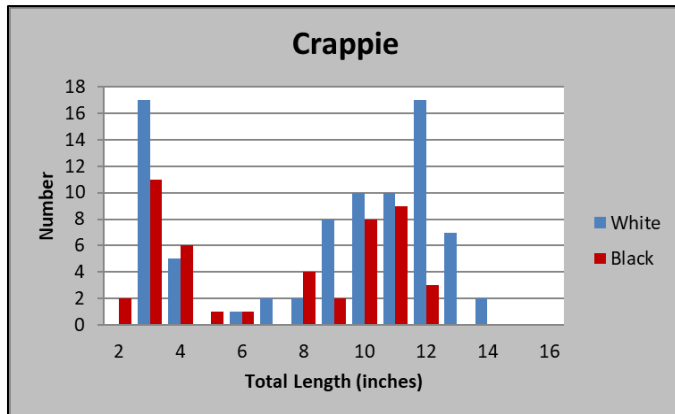
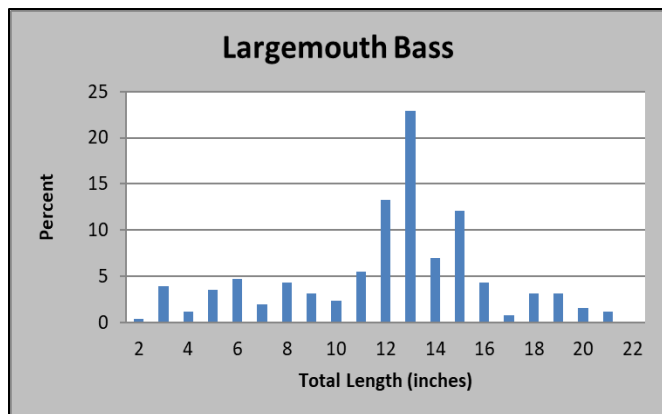
- Fish worms or cut bait in tributaries during runoff or over mudflats if no runoff.

Species	# of fish collected	% of sample	Average Length (inches)	Maximum Length (inches)	Average Weight (pounds)	Catch Rate – Adult fish (fish/mile)
Gizzard Shad	458	36	4.1	12.4	<0.1	7
Bluegill	362	28	3.4	8.3	0.1	60
Largemouth Bass	257	20	12.6	21.9	1.4	79
White Crappie	81	6	9.3	14.8	0.6	18
Black Crappie	47	4	7.7	13	0.4	9
Blue Catfish	34	3	21.2	33.1	3.7	9
White Bass	17	1	11.9	17.2	1	6
Spotted Bass	14	1	6.2	11.3	0.2	2
Channel Catfish	7	1	15.1	17.0	0.9	2
Flathead Catfish	7	1	8.1	11.9	0.3	0
Threadfin Shad	4	0	3.7	4.3	<0.1	0
Redear Sunfish	1	0	3.2	3.2	<0.1	0

Above: Fall 2022 electrofishing results. Abundant small fish measured in length groups are not included in average lengths and weights, only fish measured individually. Forage fish (Gizzard Shad, Bluegill) were numerous. Threadfin Shad were rare; until 2022, none had been seen since 2017. Most crappie were young-of-year (YOY, 2022 spawn). Largemouth Bass catch rate was high due to recent strong year classes plus catch-and- release fishing.

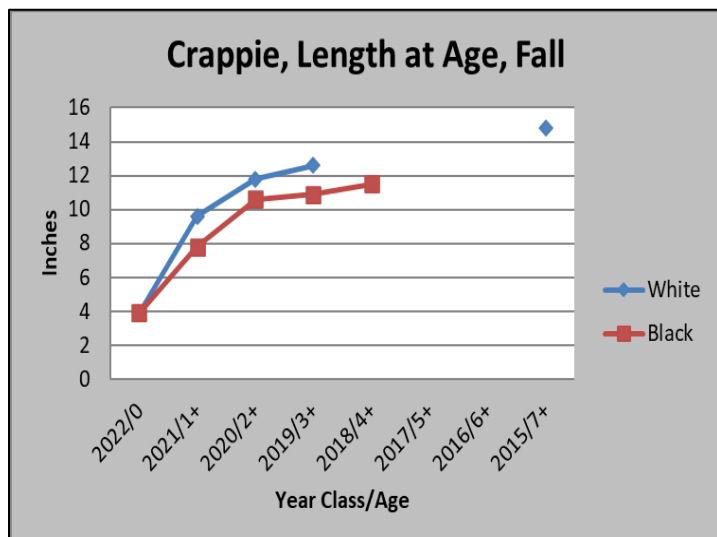


Above: Trend in fall electrofishing catch rates for adult Largemouth Bass and White Crappie. Bass catch rate in 2022 continued an upward trend and was the highest recorded for Sardis. Spring flooding since 2018 created improved shoreline habitat for spawning and rearing of both bass and their fish prey (shad, bream). White Crappie catch rates have remained more stable because crappie fingerlings move to open water shortly after spawning, so their rearing is much less dependent on shoreline habitat. Also, Sardis' anglers usually release bass, but keep legal-sized crappie. The higher White Crappie catch rate in 2022 was mostly due to a strong 2019 year class.



Above: Length distributions, fall electrofishing, 2022. Most bass were from recent high water years, plus some larger ones (top, left). Note fewer small bass from 2022's lower water level. Bass numbers fluctuate mostly from environmental factors (mainly water levels) since angler harvest is low. Crappie were mostly from 2022 (near 3 inches) or 2019 (near 12 inches). As usual, Black Crappie were overrepresented in fall (compared to spring electrofishing or angler harvest). Good-sized Blue Catfish were common (below, left). Bluegill (bottom, right) were mostly small.

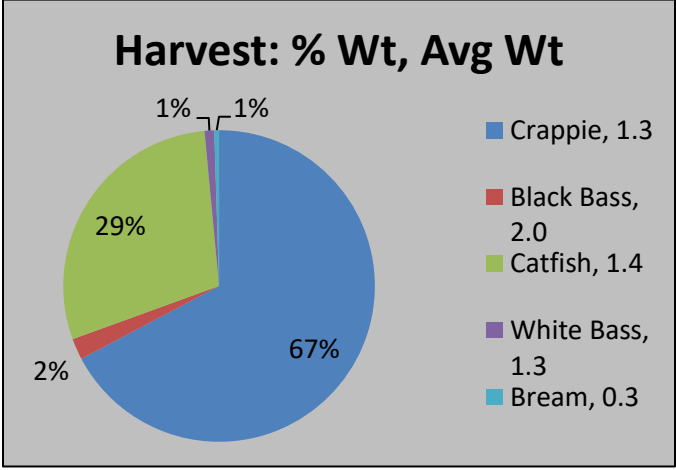
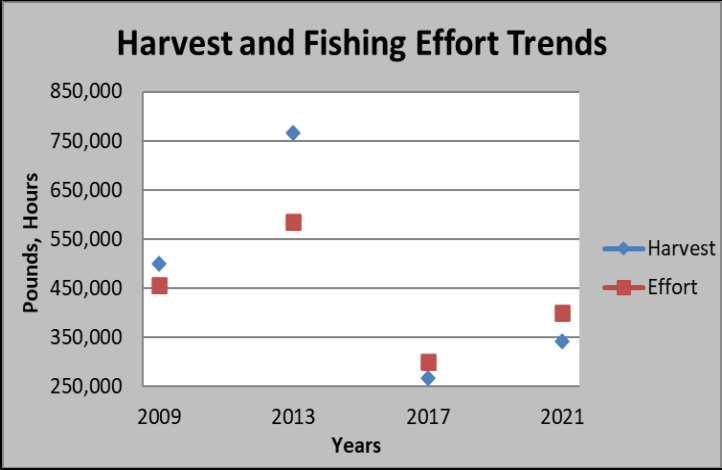
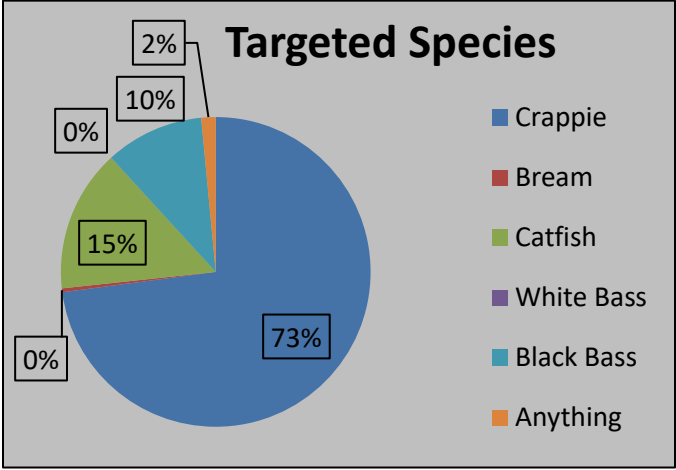
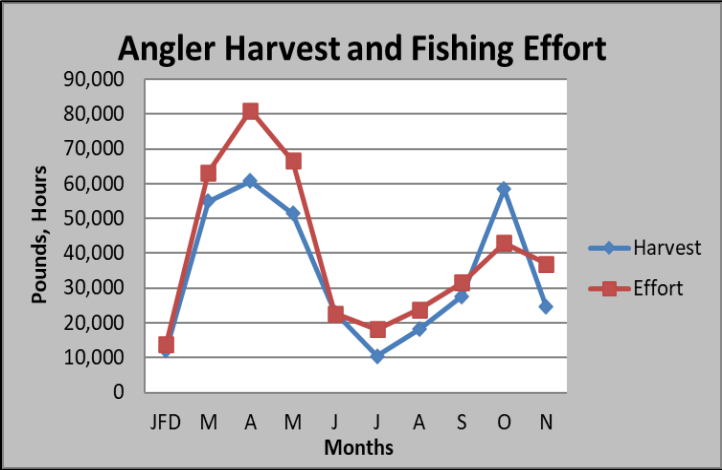
Below: Growth rates for crappie, fall 2022. Not all crappie collected were aged. Similar to deer, fall aged fish are aged as "year +" since their "birthdays" are in spring. Most White Crappie aged were spawned in 2021 or 2019. Although the 2022 year class was good even with lower water, the 2020 year class (both species) was weak for a flood year. As usual, Black Crappie took about a year longer to grow over 12 inches, which was why more of them survived past Age 3+. Few older crappie were collected (either species).



Year Class	Age	# White Crappie aged	Average Length (inches)	# Black Crappie aged	Average Length (inches)
2022	0	18	3.9	19	3.9
2021	1+	23	9.6	4	7.8
2020	2+	6	11.8	3	10.6
2019	3+	21	12.6	15	10.9
2018	4+	0		5	11.5
2017	5+	0			
2016	6+	0			
2015	7+	1	14.8		

Fish Harvest and Fishing Effort: Nearly three out of four anglers were fishing for crappie in 2021 (right, top). Crappie and catfish were 96% of annual harvest (right, middle), by weight. Ten percent of anglers fished for bass, but bass were only 2% of harvest because most bass fishing is catch-and-release. Few anglers fished for or kept White Bass or bream.

Harvest and effort varied monthly (left, top). Rising water in April and June scattered fish into shoreline vegetation which reduced catch rate (harvest/effort) and harvest. During fall drawdown, effort and harvest rose. Anglers fished about 401,000 hr and kept about 342,000 lb of fish in 2021. Harvest and effort rose 27% and 33%, respectively, since the 2017 drought (middle, left). Harvest and effort were unsustainably high in 2013 due to a huge 2009 crappie year class. Studies on the FCRs have shown fishing effort declines at either very low or high water levels. At the same level of **fishing effort (hours)**, **fishing pressure (hours per acre)** rises when water levels are low (bottom, March 2021) and falls when water levels are high.



Demographics and Economics: About 30% of Sardis’ anglers in 2021 were from surrounding counties (below), with the others coming from all over the state and country. Residents were 66% of fishing parties. The average fishing party was 1.9 anglers that drove 98 miles, one way, and spent \$62.45 per person on out-of-pocket expenses (fuel, food, bait, lodging, etc.). Expenses usually rose with distance traveled. Based on annual fishing effort, trip length, and cost per person, Sardis’ anglers spent over \$5.6 million in 2021, not counting tackle, boats, licenses, etc.

Area	Parties	Percent	Miles/party	\$/person
Surrounding counties				
Lafayette	80	15	16.9	\$21.22
Marshall	28	5	28.0	22.11
Panola	47	9	13.9	32.63
MS counties				
Lee	22	4	70.0	41.31
Pontotoc	23	4	51.3	65.57
Tate	21	4	31.4	31.55
Union	24	5	55.6	34.41
Other MS (18 counties)	40	8	84.5	77.78
Memphis area (inc. Desoto, MS)	126	24	66.3	49.07
Other out of state (14 states)	125	24	268.6	124.85
Total/avg	523	100	98.0	\$62.45

Lake Characteristics: Sardis normally fluctuates 24 ft during the year 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/sardplot.png> for a graph or <http://www.mvk-wc.usace.army.mil/resrep.htm> for both. Due to its greater depth and storage volume, Sardis was the first FCR built. Still, water level fluctuations can make it challenging to find and pattern fish.

Drawdowns and droughts let vegetation colonize mudflats (below left) and provide fish habitat when water levels rise again. Flooding brings in nutrients and expands fish habitat. Aquatic vegetation is scarce due to fluctuating lake levels, but shoreline trees and shrubs are abundant at higher water levels. Woody vegetation colonized during droughts is often killed by prolonged flooding. The fluctuation zone (winter to summer pool, below right) has very little cover other than dead timber, some live trees and shrubs, and colonized annual vegetation.



Lake Characteristics: Sardis' rule curve and rainfall sometimes result in low water during spring spawning season and/or limited vegetation colonization. However, the Sardis Reservoir COE sponsors a Habitat Day in winter when the water is low. Materials are placed in the fluctuation zone with the assistance of 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 naturally colonized vegetation during low water periods and flooded during high water events.



Patches of American Lotus (right, bottom) that colonized in Hurricane Creek in recent years became a favorite target of bass anglers. These patches disappeared after high water in 2018, but the areas will be monitored to see if they rebound. Lotus seeds can sprout after lying dormant for hundreds of years.



Spillway: The Sardis Reservoir spillway and Lower Lake are also popular fishing destinations, mostly for catfish and crappie. 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 concrete ramp into the Lower Lake provides boat anglers access. A handicapped accessible pier (below, left) was opened in 2017 near the end of the spillway channel rip-rap.

The Little Tallahatchie River below the reservoir allows access into the spillway by many wide-ranging fishes, such as Asian carps (below, right; Silver Carp, top, Bighead Carp, bottom) from the Mississippi River. Regulations prohibit anglers from keeping alive bait fish captured in the spillway to prevent the spread of these nuisance, non-native fishes to other waters. Uncommon species in the spillway may include Paddlefish, American Eels, Striped Bass, and Hybrid Striped Bass.

