



Enid Reservoir 2023

REEL FACTS

Keith Meals – Fisheries Biologist

Keith.Meals@wfp.ms.gov

General Information: Enid Reservoir is one of four flood control reservoirs (FCRs) in north Mississippi. Built by the US Army Corps of Engineers (COE) in 1954 on the Yocona River, it has a summer pool of 16,130 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 (6,120 ac); flood pool is 27,950 ac. Enid contains 400 ac Wildcat Brake, a subimpoundment in the upper reservoir between the Yocona River and Otoucaloufa Creek.

Location/Contact: 10 miles south of Batesville, MS. COE office (662) 563-4571.

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

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

Amenities

- 10 concrete fee ramps, plus 3 gravel ramps at Wildcat Brake
- Bait shops in Batesville, Water Valley, etc.

Creel and Size Limits

The following apply to the reservoir, but 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 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: 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.

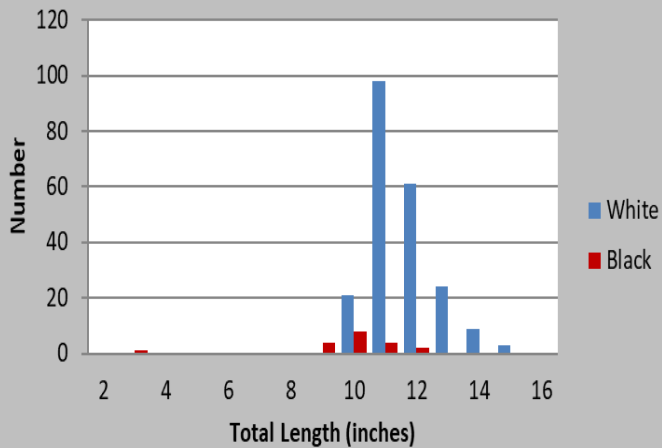
Bream

- Fish crickets or redworms near cover.

Catfish

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

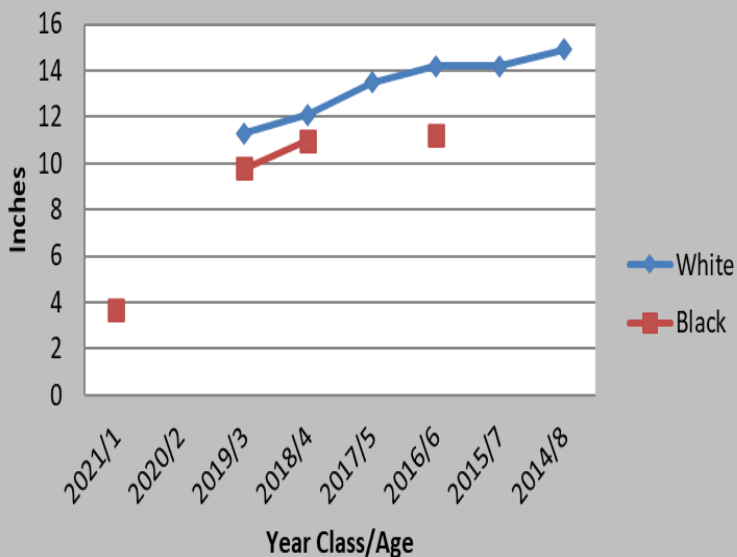
Crappie, Spring 2022



Above: Crappie length distributions from 2022 spring electrofishing. Sampling in March and April found abundant crappie; 92% were White Crappie, (angler harvest was 99% White Crappie). Normal for spring, nearly all crappie were spawning adults. Small, sexually immature fish usually stay offshore. Forty-five percent of White Crappie were over 12 inches long (legal size).

Below: Growth rates for crappie, spring 2021. Not all fish collected were aged (ex. 27% of White Crappie). Spring electrofishing usually produces larger, older crappie than in fall when those fish may be in deep water. Most White Crappie were from the big 2019 year class, but most Black Crappie were from 2018 when high water flooded shoreline vegetation colonized in the 2017 drought. Decent numbers of larger, older White Crappie were seen. As usual, White Crappie grew faster than Black Crappie. Only one 2021 fish of either species was seen. Their scarcity did not mean a spawning failure. They were likely avoiding the shallows where spawning crappie, bass, and other predators might consider them a tasty meal.

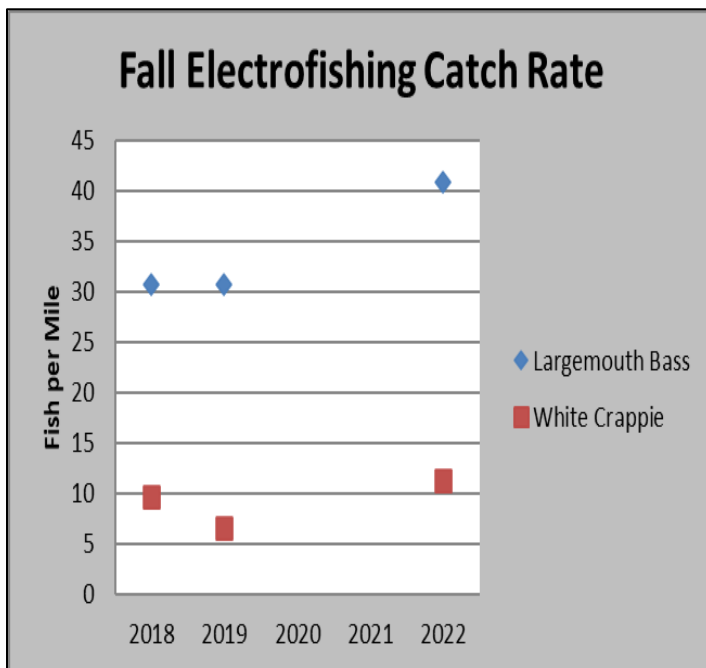
Crappie, Length at Age, Spring



Year Class	Age	# White Crappie aged	Average Length (inches)	# Black Crappie aged	Average Length (inches)
2021	1	0	-	1	3.7
2020	2	0	-	0	-
2019	3	20	11.3	5	9.8
2018	4	18	12.1	11	11.0
2017	5	8	13.5	0	-
2016	6	9	14.2	2	11.2
2015	7	3	14.2	0	
2014	8	2	14.9	0	

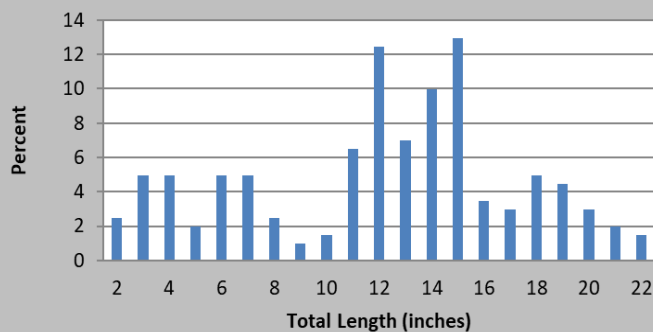
Species	# of fish collected	% of sample	Average Length (inches)	Maximum Length (inches)	Average Weight (pounds)	Catch Rate – Adult fish (fish/mile)
Gizzard Shad	429	29	5.0	13.2	0.1	22
Threadfin Shad	391	27	1.9	3.5	<0.1	<1
Bluegill	236	16	3.2	7.6	<0.1	23
Largemouth Bass	201	14	12.6	22.1	1.5	41
Black Crappie	104	7	3.7	12.3	0.1	6
White Crappie	65	5	9.0	15.2	0.6	11
Channel Catfish	12	1	16.6	19.7	1.4	3
Flathead Catfish	11	1	10.2	18.7	0.6	<1
Redear Sunfish	9	<1	5.4	8.2	<0.1	2
White Bass	1	<1	9.3	9.3	0.4	<1

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 (shad, Bluegill) were numerous, but mostly small. **Below (right):** Some larger Bluegill were present; Enid normally has the best bream fishing of the FCRs. Although Blue Catfish were common in the creel, none were collected during electrofishing. White Bass were scarce.

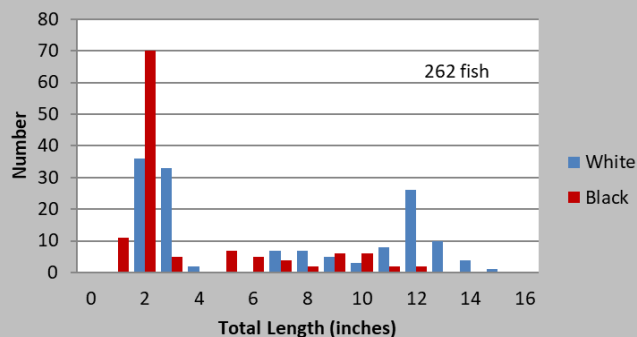


Above (left): Trend in fall electrofishing catch rates for adult Largemouth Bass and White Crappie. Bass numbers have risen because of several years of high water (except 2022) improving shoreline habitat plus catch-and-release fishing. Crappie numbers also rose due to several strong high water year classes.

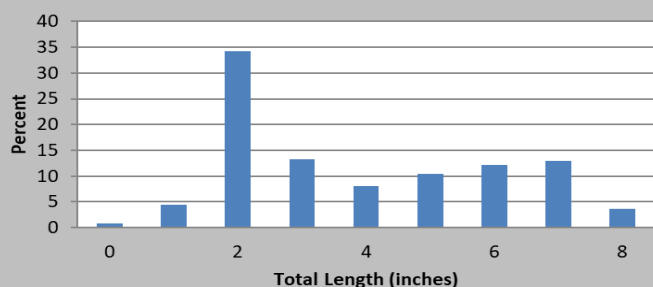
Largemouth Bass



Crappie, Efish + Net, Fall 2022



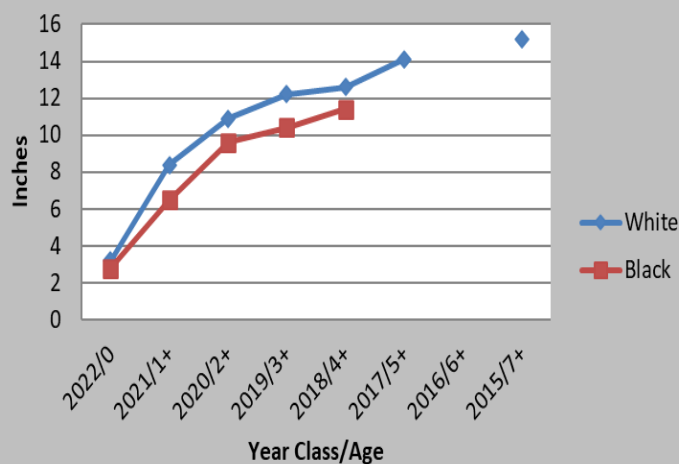
Bluegill



Above: Length distributions, fall, 2022. Most bass were from recent high water years, plus some larger ones (top, left). There were fewer small bass from 2022's lower water. Bass numbers fluctuate mostly from environmental factors (mainly water levels) since angler harvest is low. Electrofishing and trapnetting were used to sample crappie. 2019 White Crappie were near 12 inches. As usual, Black Crappie were overrepresented in fall (compared to spring sampling or angler harvest). Bluegill ("bream") had a good proportion of harvestable sized fish (6 inches or larger).

Below: Crappie growth rates, 2022. Not all fish captured were aged. Odd growth patterns were from low sample sizes of those year classes. Most crappie of both species were either young-of-year (2022) or from the 2021 year class. Like the other FCRs, the 2020 year class was weak for a high water spring. Black Crappie grew slower than White Crappie, which is normal for the FCRs. On average, White Crappie grow over 12 inches just after their third "birthday"; it takes about a year longer for Black Crappie.

Crappie, Length at Age, Fall

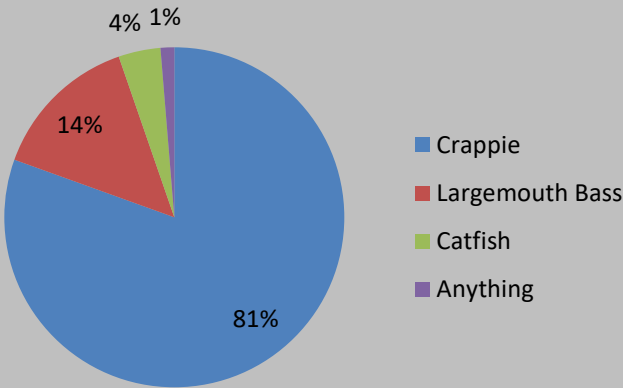


Year Class	Age	# White Crappie aged	Average Length (inches)	# Black Crappie aged	Average Length (inches)
2022	0	21	3.2	20	2.8
2021	1+	18	8.4	18	6.5
2020	2+	5	10.9	3	9.6
2019	3+	17	12.2	12	10.4
2018	4+	8	12.6	2	11.4
2017	5+	5	14.1	-	-
2016	6+	0	-	-	-
2015	7+	1	15.2	-	-

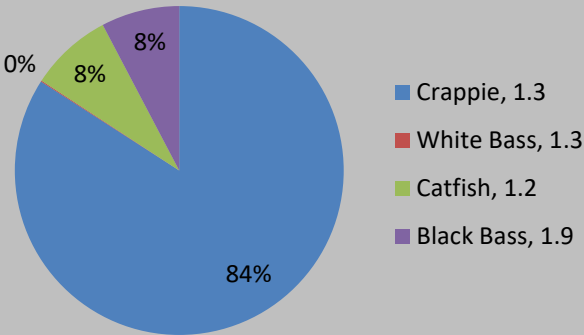
Fish Harvest and Fishing Effort: Over 80% of Enid anglers fished for crappie in 2022 (top, right). Crappie and catfish were 96% of annual harvest (middle, right), by weight. Over 94% of crappie anglers were trolling. Five percent of anglers targeted Largemouth Bass or anything; no anglers targeted White Bass or Bluegill.

Harvest and effort varied monthly (below, left) with a spring peak in effort (hours). Peak harvest was in July as trollers were catching crappie at the same time bass and catfish harvest peaked. Anglers fished about 151,375 hr and kept about 162,374 lb of fish in 2022. Fishing pressure was about 12 hrs per acre, based on monthly average lake acreages. Crappie yield was about 10.3 pounds per acre; total yield was 12.3 pounds per acre. Effort has been trending downward more than harvest (below, bottom) as anglers are becoming more efficient in harvesting fish.

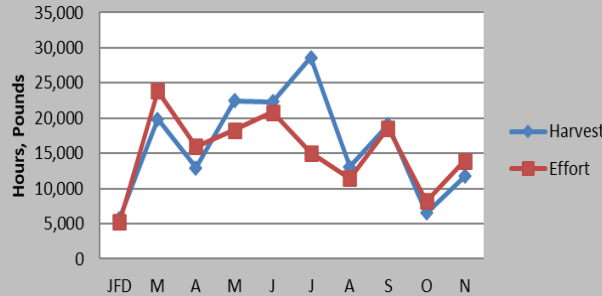
Targeted Species



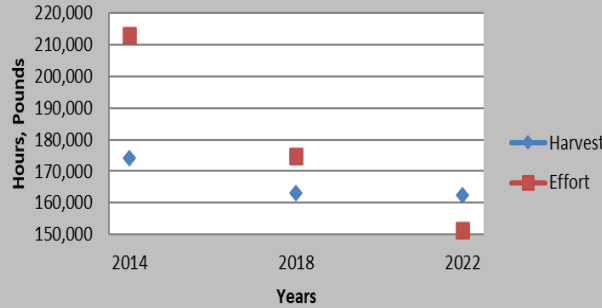
Harvest: % Wt, Avg Wt



Angler Harvest and Fishing Effort



Harvest and Fishing Effort Trends Enid



Fishery: A third of Enid anglers in 2022 were from surrounding counties, with 17% from the Memphis area (below). Residents were 65% of fishing parties. The average fishing trip had 1.9 anglers that drove 130 miles, one way, and spent \$86.19 per person on out-of-pocket expenses (fuel, food, ice, bait, lodging, etc.). Expenses usually rose with distance traveled. Based on annual fishing effort, trip length, and cost per person, the Enid fishery generated over \$2.9 million, not counting tackle, boats, licenses, etc.

Area	Parties	Percent	Miles/party	\$/person
Surrounding counties				
Lafayette	27	6	38.9	\$41.56
Panola	84	19	19.8	30.40
Yalobusha	38	8	19.6	16.59
MS counties				
Calhoun	10	2	60.5	44.77
Tallahatchie	16	4	35.1	35.63
Tate	14	3	52.5	44.66
Other MS (24 counties)	68	15	72.8	62.58
Memphis area (inc. Desoto, MS)	76	17	77.4	59.55
Other out-of-state (13 states)	120	27	355.0	177.82
Total/avg	453	100	129.8	\$86.19

Lake Characteristics: Enid normally fluctuates 20 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 <http://www.mvk-wc.usace.army.mil/plots/enidplot.png> for a graph or <http://www.mvk-wc.usace.army.mil/resrep.htm> for both. Water level fluctuations can make it challenging to find and pattern fish.

Fall drawdowns and droughts let moist soil vegetation colonize mudflats (below left) to provide fish habitat when water levels rise. Flooding brings in nutrients and expands fish habitat. Aquatic vegetation is scarce due to fluctuating water levels, but flooded trees and shrubs are abundant at high water levels (below, right). Unless the water is above summer pool, there is very little cover for fish or anglers other than dead, standing timber and flooded moist soil vegetation.



Enid's water level fluctuations sometimes result in low water during the spring spawning season and/or limited vegetation colonization during the fall drawdown. However, the Enid Reservoir COE sponsors a Habitat Day in winter when the water is low. Materials are strategically placed in the fluctuation zone by COE and MDWFP personnel with the assistance of many volunteers (below) to provide fish habitat when the water comes back up. Although beneficial, these artificial structures cannot replace the quantity or quality of habitat created by flooding natural vegetation.



Spillway: The Enid Reservoir spillway is also a popular fishing destination, 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 new COE handicapped accessible pier (below, left) was opened in 2017 to replace an old pier on the same site.

The Yocona River below the reservoir allows access into the spillway by many wide-ranging fishes, such as Asian carps (below, right, top - Silver Carp; below, left, bottom - Bighead Carp) 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 Eel, Striped Bass, and Hybrid Striped Bass.

