



Grenada Reservoir 2018

REEL FACTS

Keith Meals, Arthur Dunn, Stanley Turner – Fisheries Biologists

keithm@mdwfp.state.ms.us, ArthurD@mdwfp.state.ms.us,

StanleyT@mdwfp.state.ms.us

General Information: Grenada 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 Yalobusha River, it is the largest FCR and the state's largest lake with a summer pool of 35,820 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 (9,800 ac); flood pool is 64,600 ac. The state's largest lake is a popular destination for crappie and catfish anglers.

Location/Contact: 3 miles northeast of Grenada, MS. COE office (662) 226-5911.

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.
- Bait shops in Grenada.

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 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 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, points in summer, and tributaries in fall.

Bream

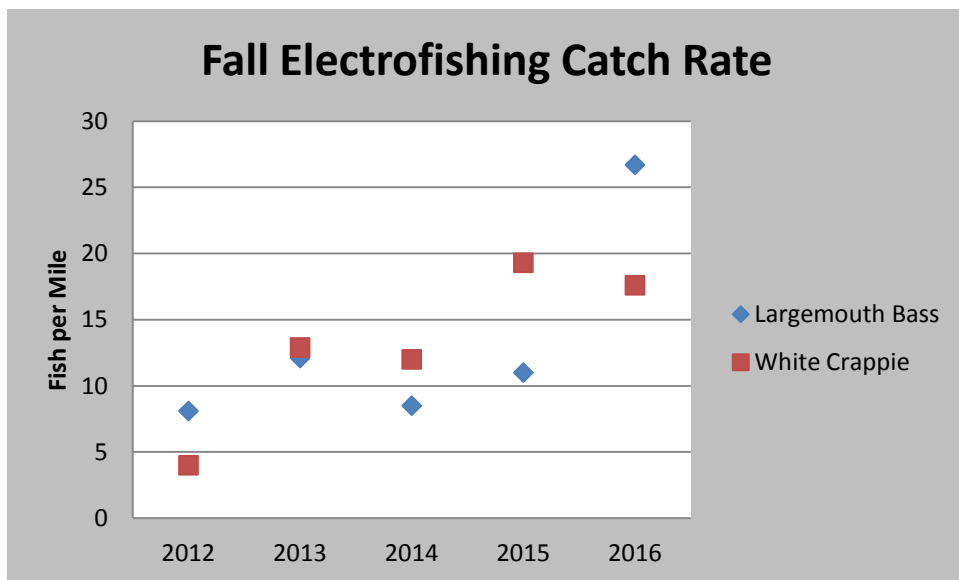
- Fish crickets or redworms near cover.

Catfish

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

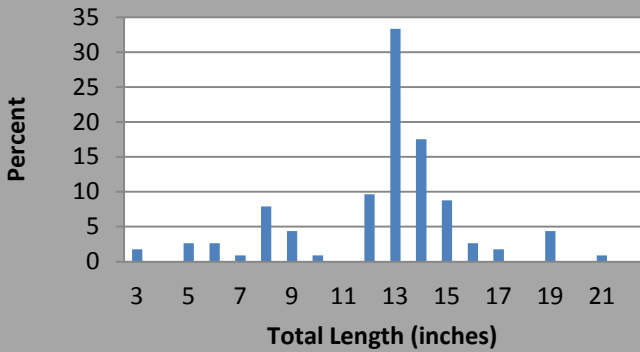
Species	# of fish collected	% of sample	Average Length (inches)	Maximum Length (inches)	Average Weight (pounds)	Catch Rate – Adult fish (fish/mile)
Gizzard Shad	489	46	9.5	11.3	0.3	6
Bluegill	190	18	4.4	6.6	0.0	17
Largemouth Bass	114	11	13.4	21.0	1.4	27
White Crappie	99	9	11.6	15.9	0.8	18
Black Crappie	64	6	10.3	14.1	0.6	12
Blue Catfish	54	5	18.5	35.9	3.1	11
White Bass	31	3	13.5	16.8	1.1	5
Flathead Catfish	16	2	12.3	19.7	0.8	<1
Channel Catfish	13	1	9.4	14.6	0.2	1

Above: Fall 2016 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, but mostly small. Grenada is a poor bream lake due to habitat (fluctuation and turbidity). Crappie numbers were high from good spawns from 2013 through 2106.

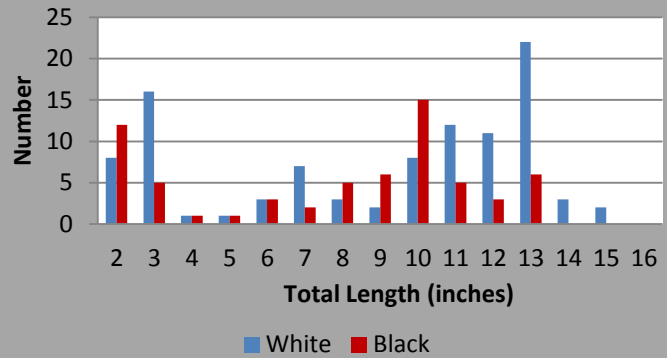


Above: Trend in fall electrofishing catch rates, adult fish. Bass and crappie abundance has been improving due to higher water levels from 2013 – 2016, especially bass. White Crappie numbers peaked in 2015; the big 2013 year class grew over 12 inches in 2016 and their numbers likely declined with harvest.

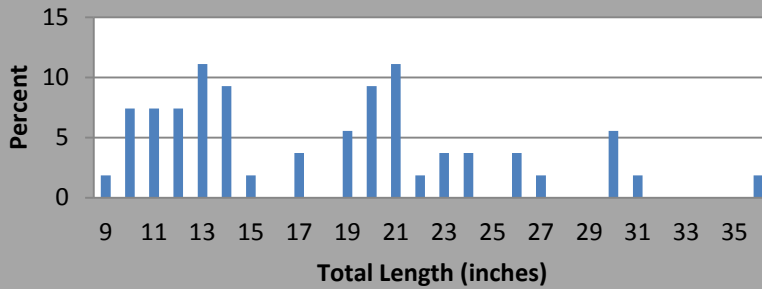
Largemouth Bass



White and Black Crappie



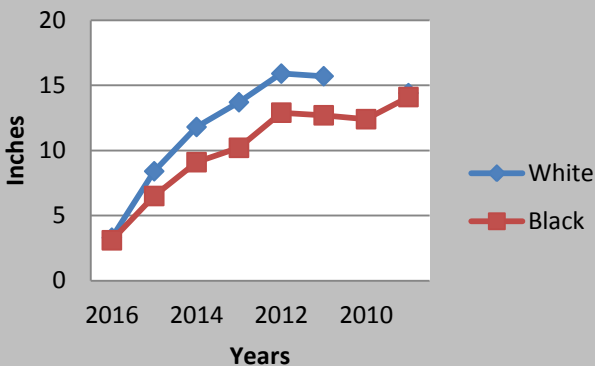
Blue Catfish



Above: Length distributions, fall electrofishing, 2016. Most bass were from the big 2013 year class. Studies have shown bass spawn well yearly here, but survival to their first year is poor if the water stays muddy. White Crappie near 13 inches were also from a strong 2013 year class. Blue Catfish (“white humpbacks” or “white river cats”) were fairly common.

Below: Growth rates for crappies, fall 2016. There have been good White Crappie spawns 2013 – 2016. Big Black Crappie spawn well when large areas of vegetation are flooded in spring. Lengths of older crappie were biased from very small sample sizes. Some crappie from the huge 2009 year class were present. Black Crappie grew slower than White Crappie, which is normal.

Crappies, Length at Age



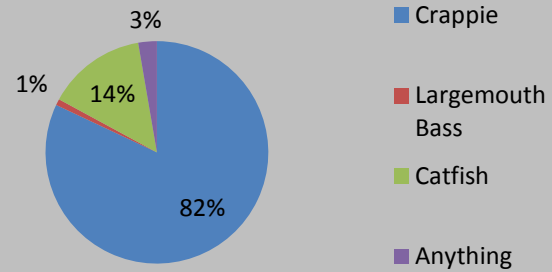
Year Class	Age	# White Crappie aged	Average Length (inches)	# Black Crappie aged	Average Length (inches)
2016	0	25	3.3	17	3.1
2015	1+	21	8.4	7	6.5
2014	2+	22	11.8	7	9.1
2013	3+	16	13.7	21	10.2
2012	4+	1	15.9	5	12.9
2011	5+	1	15.7	2	12.7
2010	6+	0	-	2	12.4
2009	7+	1	14.4	1	14.1

Fish Harvest and Fishing Effort: Most anglers fished for crappie in 2015 (right, top). Crappie and catfish were 99.6% of annual harvest (right, bottom). Grenada crappie average second largest of the FCRs. Although Black Crappie are usually common in other MDWFP sampling, White Crappie (below, right) were over 99% of crappie kept by Grenada anglers.

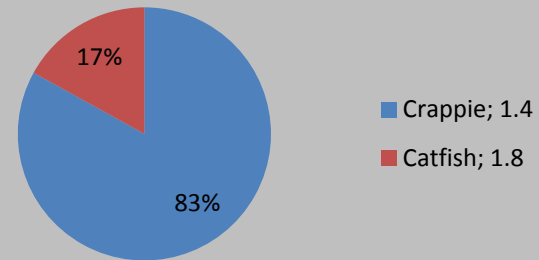
Harvest and effort varied monthly (middle). Effort and harvest followed each other closely all year, indicating consistent seasonal fishing. Peak harvest and effort were in April. Anglers fished about 408,000 hr and kept about 455,000 lb of fish in 2015.

Harvest rose 43% and effort rose 64% from 2007-2015 (bottom). Harvest was low in 2011 due to low water and poor spawns from 2005 – 2007, plus the big 2009 crappie year class was too small to keep. Grenada's reputation as the nation's top trophy crappie lake contributes to increased fishing effort.

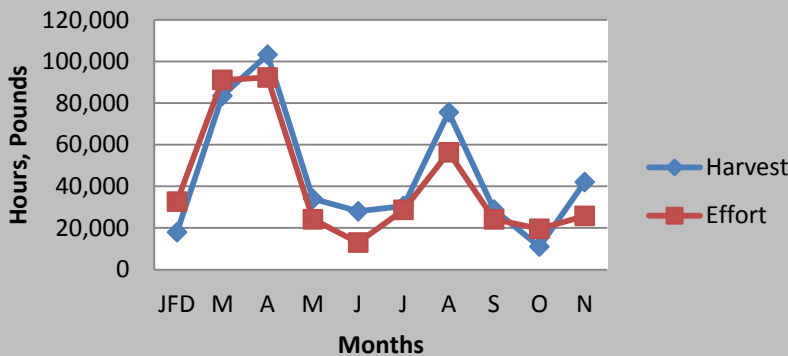
Targeted Species



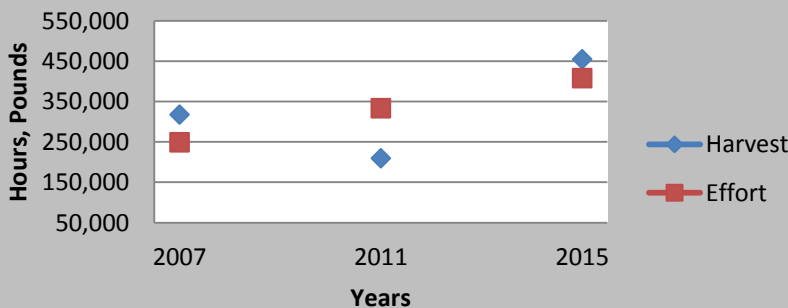
Harvest: % Wt, Avg Wt



Angler Harvest and Fishing Effort Grenada 2015



Harvest and Fishing Effort Trends Grenada



Fishery: Forty-two percent of Grenada anglers in 2015 were from surrounding counties, with the others coming from all over the state and country (below). Residents were 79% of fishing parties. The average fishing party was 1.9 anglers that drove 95.6 miles, one way, and spent \$40.74 per person on out-of-pocket expenses (fuel, food, ice, bait, etc.). Expenses usually rose with distance traveled (below). Based on annual fishing effort, trip length, and cost per person, Grenada anglers spent over \$3.7 million in 2015, not counting rods, reels, boats, licenses, etc..

Area	Parties	Percent	Miles/party	\$/person
Surrounding counties				
Grenada	88	22	19.6	\$20.18
Calhoun	61	15	34.4	28.83
Yalobusha	22	5	17.7	15.88
MS counties				
Montgomery	19	5	40.3	30.83
Pontotoc	17	4	59.7	22.90
Tallahatchie	14	3	37.2	24.78
Carroll	13	3	40.3	37.25
Webster	13	3	55.0	38.97
Others (20)	72	18	68.4	41.17
Memphis area (inc. Desoto, MS)	15	4	105.0	54.82
Other out of state	74	18	333.1	81.84
Total/avg	408	100	95.6	\$40.74

Lake Characteristics: Grenada normally fluctuates 12 ft yearly following a “rule curve” based on seasonal rainfall patterns. For water levels (rule curve vs actual water level), see <http://mvk-wc.usace.army.mil/docs/bullet.txt> for a table or <http://mvk-wc.usace.army.mil/plots/grenplot.png> for a graph or <http://www.mvk-wc.usace.army.mil/resrep.htm> for both. Due to its shallowness, Grenada exceeds its emergency spillway more than the deeper FCRs (Sardis, Enid). Rapid fluctuations can make it challenging to find and pattern fish.

Fall drawdowns and droughts let moist soil vegetation colonize mudflats (below left) for 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 there are abundant shoreline trees and shrubs at higher water levels. The fluctuation zone (winter to summer pool, below right) has very little cover other than dead timber, some live trees and shrubs, and colonized vegetation.



Lake Characteristics: Grenada's rule curve and rainfall sometimes result in low water during spring spawning season and/or limited vegetation colonization. However, the Grenada Reservoir COE sponsors a Habitat Day in winter when the water is low .

Materials are placed in the fluctuation zone with the assistance of MDWFP and volunteers (right, top and 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 Grenada Reservoir spillway 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 concrete ramp into the "old river run" below the dam provides anglers access. A new handicapped accessible pier (below, left) was opened in 2017 where the spillway channel and old river run meet.

The Yalobusha 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. Young Asian Carp resemble shad or minnows. Anglers collecting bait fish in the spillway must put them on ice or in a dry container to prevent the spread of these nuisance, non-native fishes to other waters. Uncommon species caught in the spillway may include Paddlefish, American Eel, Striped Bass, and Hybrid Striped Bass.

