

Sunrise Reservoir Fishery Management Plan July 2021 – June 2024

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Overview

Sunrise Reservoir (also known as Cameron No. 2) is one of three water-supply reservoirs located on the northwest edge of the city of Cameron (City), DeKalb County, Missouri. The lake covers 35 acres, has a maximum depth of 25 feet, and good water clarity. There are three main accesses at the lake, one with a boat ramp near the north end of the dam, one with a double privy and accessible fishing platform south of the dam, and one serving as the main trailhead for

a hiking trail following the lakeshore (Figure1).

The reservoir was constructed in 1938 through the federal Works Projects Administration to augment the city water supply. A smaller (25 acres) and older reservoir (Century Reservoir or Cameron No. 1) is located just west of Sunrise Reservoir; both reservoirs drain into Eagle Reservoir (Cameron No. 3; 96 acres) where water is pumped directly to the water treatment plant in Cameron.

The City owns approximately 271 acres of mostly forested land around the three water-supply reservoirs. This area provides great opportunities for fishing, hiking, and nature viewing. The entire watershed for the three reservoirs includes more than 3,200 acres consisting of working grasslands (hay and pasture), cropland, and urban area (northwest portion of Cameron). The portion of the watershed which drains to Sunrise is about 1,120 acres, giving the lake a fairly high watershed-to-lake ratio of 32:1. Despite the relatively large watershed, water clarity is higher and aquatic plants are more abundant in Sunrise Reservoir than in any of the other city reservoirs; this may be attributed to a low percentage of cropland in its drainage basin.

The fishery in Sunrise Reservoir was first established through stocking in the early 1940s. Fisheries management by the Missouri Department of Conservation (MDC) began in 1983 through a Community Assistance Program (CAP) agreement with the City. The CAP agreement allowed MDC to manage the fishery and ensure free public access for fishing in all three of reservoirs. This included fish stocking and regular fish surveys by MDC. The agreement also provided funding, through a federal grant, for the City to construct boat ramps, privies, parking lots and road improvements. The City is responsible for area maintenance, which includes regular litter pickup, pumping of privies, grading and graveling roads and parking areas, and mowing to keep the accesses in a safe and clean condition. The CAP agreement between the City and MDC was renewed in 2008.

In 2020, MDC requested a new agreement to combine all four of Cameron's water supply reservoirs (Century, Eagle, Sunrise, and Grindstone). The new agreement also transferred ownership and all maintenance responsibilities to the City for facilities developed jointly through past CAP agreements (boat ramps, fishing dock, privies, parking lots, etc.) among the four reservoirs. MDC retained the responsibility for managing the fisheries through regular surveys, fish stocking, enforcement of the Wildlife Code, and pertinent informational/entrance signs. This new agreement was finalized in June 2021.

Fish Community

The current fish population in Sunrise Reservoir includes **largemouth bass, channel catfish, black crappie, white crappie and bluegill**. Natural reproduction sustains largemouth bass, the two crappie species, and bluegill. MDC stocks catchable-sized (8-12") channel catfish every two years at a rate of 15 catfish per acre. Catfish stocking is necessary to maintain a viable channel catfish population due to high predation rates by bass on juvenile catfish.

Non-game species in the reservoir have included black bullhead, gizzard shad, golden shiner, green sunfish, common carp, and yellow bullhead. Gizzard shad and common carp, both considered invasive species, remain abundant in the lake.

2021 Fishing Regulations

Largemouth bass – Minimum length 15”; daily limit 6 fish

Catfish (includes channel, flathead and blue catfish) - Daily limit of 4 with no length limit

Crappie (species combined) – Daily limit 30 fish with no length limit

All Other Fish Combined – Daily limit of 20 with no length limit

Methods: Pole and Line Fishing Only (Maximum of 3 poles/person)

Boats: Electric motors only

Recent Stocking History

Year	Fish Species	Number	Size
2021	Channel Catfish	525	8-12”
2019	Channel Catfish	525	8-12”
2017	Channel Catfish	525	8-12”
2015	Channel Catfish	525	8-12”
2013	Channel Catfish	525	8-12”

Fishery Management Goals and Objectives

The overall goal is to provide a free, close-to-home, and quality fishing opportunities compatible with the capabilities and primary use of the impoundment. Specific objectives are as follows:

- Maintain an abundant **largemouth bass** population with electrofishing catch rates over 40 bass per hour. In terms of sizes, for all largemouth bass sampled over 8 inches in length, we want to see at least 40 percent measure over 15 inches, and 10 percent or more over 18 inches.
- Maintain a good quality **crappie** population. For all crappie (black and white) sampled over 5 inches in length, our goal is to have at least 30 percent over 8 inches.
- Maintain a consistent and high-quality **channel catfish** population with regular stockings of 525 catfish (8-12”) every two years.

Fish Population Assessments

MDC fisheries personnel sample Sunrise Reservoir by electrofishing each spring-early summer when water temperatures are favorable to monitor relative abundance and sizes of fish. Monitoring of the fishery focuses on valued game species (channel catfish, largemouth bass, and crappie species) but all fish species are sampled with data recorded on relative abundance and size structure. These data help us to understand trends in the whole fish community and are used to provide an updated fishing outlook for the public (see 2022 Fishing Prospects section). In addition, our monitoring data are used to evaluate current regulations, support proposals for new regulations when warranted, and to inform the City of any significant management changes or concerns.

The fish community in Sunrise Reservoir has remained somewhat consistent since 2010. Electrofishing catch rates for largemouth bass show a slight upward trend (Figure 3) with a higher percentage of the catch less than 12 inches long. About 10-15 percent of the bass (>8”) were 18 inches or larger. Crappie numbers fluctuated with black crappie consistently more abundant than white crappie (Figures 4 and 5). Recent annual surveys have shown a range from 20 to 80 percent of black crappie at or above sizes considered harvestable (8”) by most anglers. White crappie were less abundant but we found a higher percentage of fish larger than 8-10 inches when compared to black crappie. Bluegill are very abundant yet sizes remain small with almost all fish sampled less than 5-6 inches long. An abundance of smaller, slow-growing panfish (crappie and bluegill) may be attributed to competition for food with gizzard shad and to extensive aquatic vegetation which limits predation rates.

FY22- 24 Management Schedule (July 1, 2021 – June 30, 2024)

	FY22	FY23	FY24
Fish Sampling	X	X	X
Stock Channel Catfish	X		X
New Installations of Brush Piles and/or Fish Attractors	X		X
Promote Healthy Watershed Practices	X	X	X
Maintenance of Signs	X	X	X
Update Plan for FY25-27			X

2022 Fishing Prospects

Electrofishing surveys in 2021 showed high catch rates for **largemouth bass** over 8 inches in length, with 37 percent larger than 15 inches and 13 percent larger than 18 inches. This shows spawning and survival of juvenile bass was successful in recent years. Anglers should enjoy good catch rates for largemouth bass with the potential to keep a few legal-sized bass (≥ 15 ") if they wish.

The crappie population does not appear to be abundant, but 2021 surveys showed a fair number of desirable-sized (>8 ") **black crappie** and a few larger (>10 ") **white crappie** that should be attractive to anglers in 2022. Spring spawning periods for crappie generally occur in April and early May with water temperatures in the mid-50s to mid-60 degrees Fahrenheit. During this time, crappie in Sunrise Reservoir may be caught in shallow water along the dam and accessible shorelines.

Regular stocking by MDC should maintain consistent catch rates for **channel catfish**. The 2021 surveys showed catfish present in the 16-24-inch size range which is a nice size for eating. Remember the daily limit is four catfish with no size restrictions.

Opportunities and Challenges

- **Excessive Aquatic Vegetation** (challenge and opportunity)
Aquatic vegetation often becomes too abundant in Sunrise Reservoir to effectively fish many areas around the shoreline during late spring through early fall. This plant growth is fueled by a built-up of nutrients in the lake sediments as well as additional nutrient loading from runoff in the watershed. Use of most aquatic herbicides is not allowed due to water quality requirements in water-supply reservoirs. MDC will evaluate the effectiveness of stocking sterile grass carp to decrease the amount of submerged vegetation to more suitable levels for angling.
- **Conservation Practices in the Watershed** (opportunity)
Water clarity is generally good in Sunrise Reservoir but there may be opportunities to cooperate with private landowners in the watershed, through USDA and SWCD programs, to implement Best Management Practices (BMPs) that protect and enhance water quality and recreational uses in all of the Cameron reservoirs. The same BMPs can improve livestock health, crop production, and reduce soil erosion on production lands. Water quality also may be compromised by storm runoff from the urban portion of the watershed. It is important to regularly educate and remind residents about responsible use and disposal of common household chemicals (e.g., yard fertilizer, pesticides, cleaning agents) and other hazardous wastes.
- **Litter and Vandalism** (challenge)
Unfortunately, both litter and vandalism are chronic problems at many public reservoirs including Sunrise Reservoir. Regular cleanup efforts, timely repairs, and adequate presence and actions by law enforcement can minimize these issues and promote greater public use. Regular use of the hiking trail is probably helping to self-police some of the issues.

Reviewed by: _____
Tory Mason, CPLC Fisheries Biologist

Date: _____

Thomas Huffmon, CPLC Fisheries Biologist

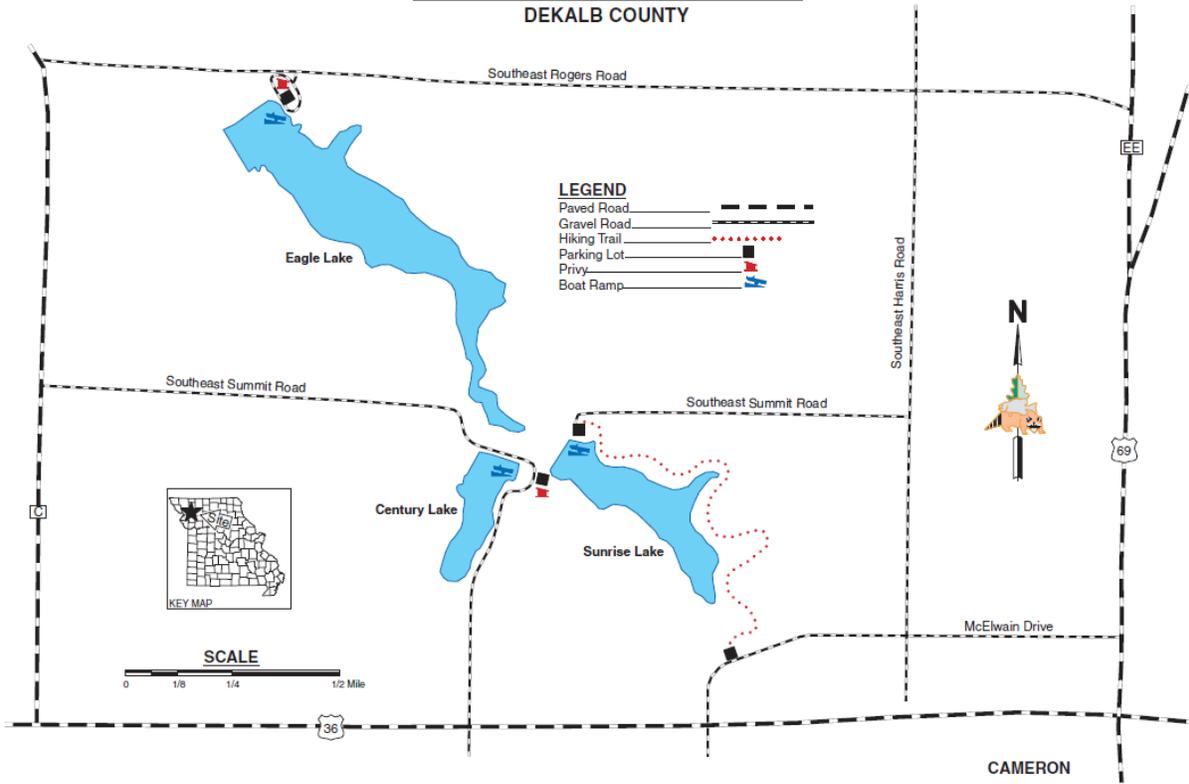
Date: _____

Approved by: _____
Kyle Reno, CPLC NW Regional Supervisor

Date: _____

CAMERON CITY LAKES

DEKALB COUNTY



Conservation Commission of the State of Missouri © 06/15

Figure 1. Map of three water-supply lakes for the city of Cameron. A fourth city reservoir, Grindstone, is located just west of the area shown in this map.

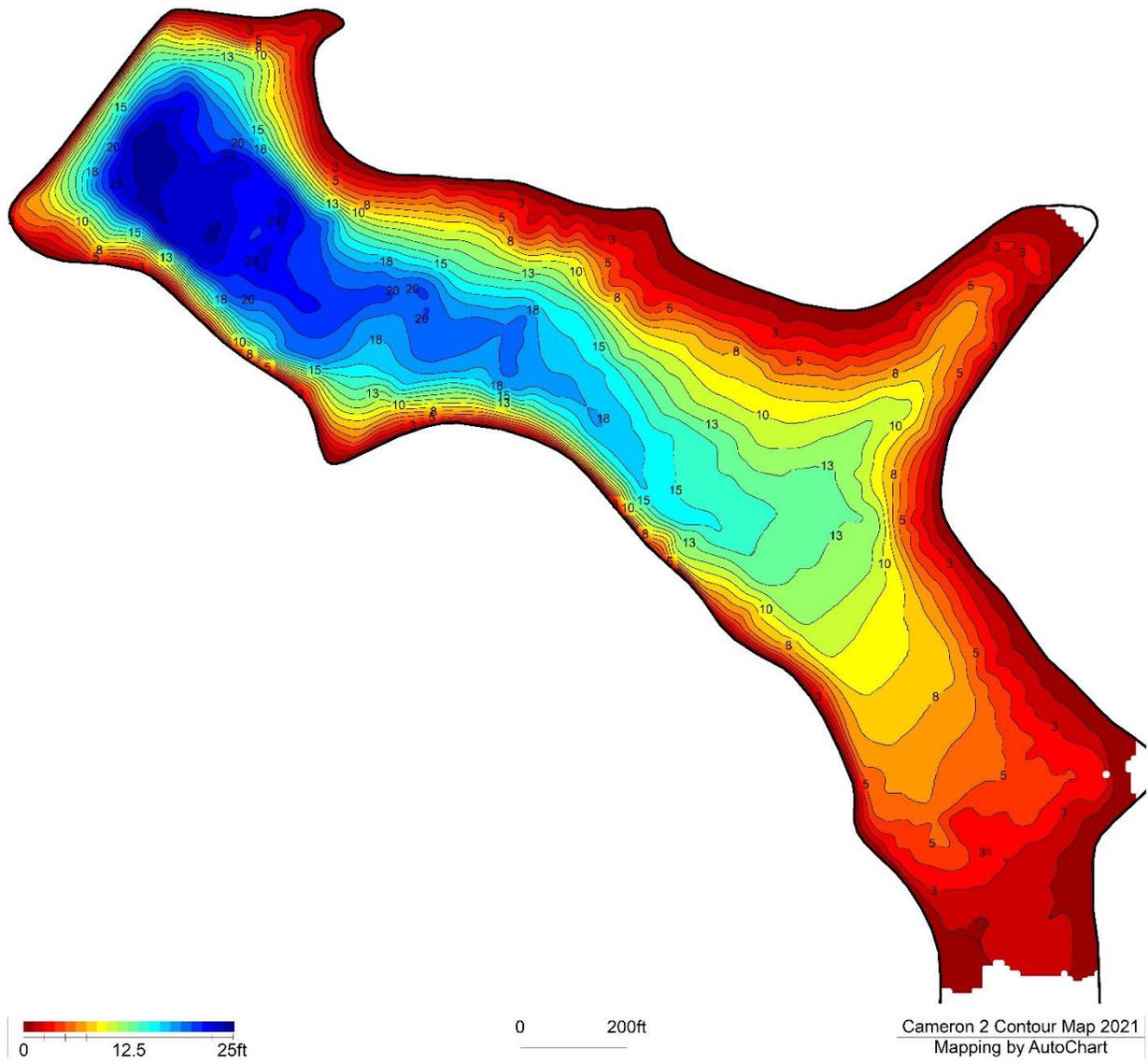


Figure 2. Estimated depth contours for Sunrise Reservoir.

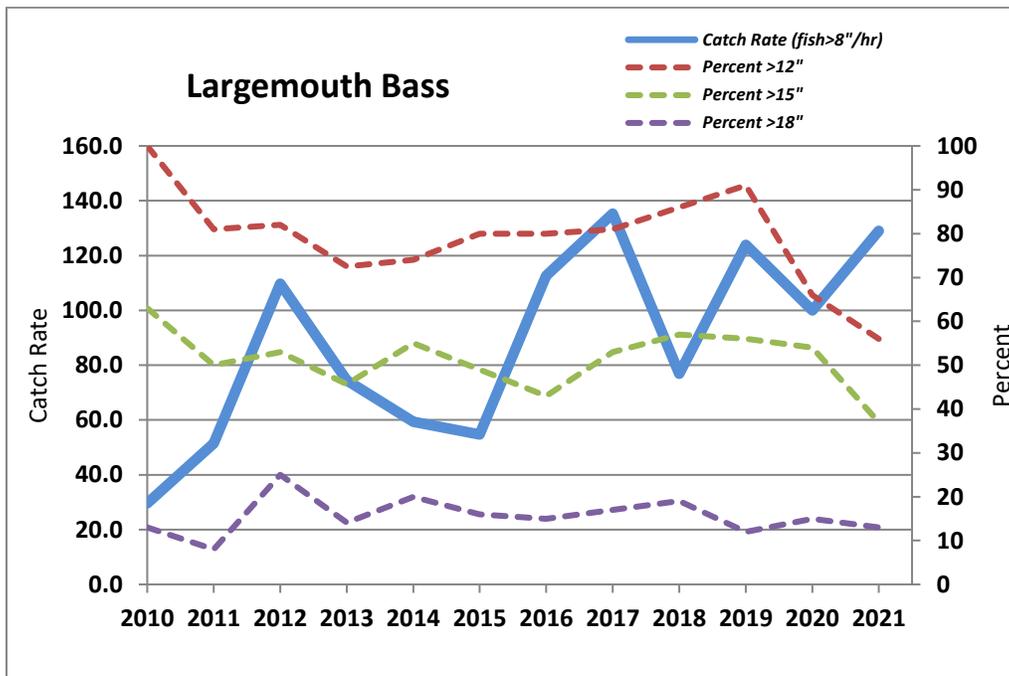


Figure 3. Catch rates and size statistics for largemouth bass (> 8") in electrofishing samples on Sunrise Reservoir, 2010-2021.

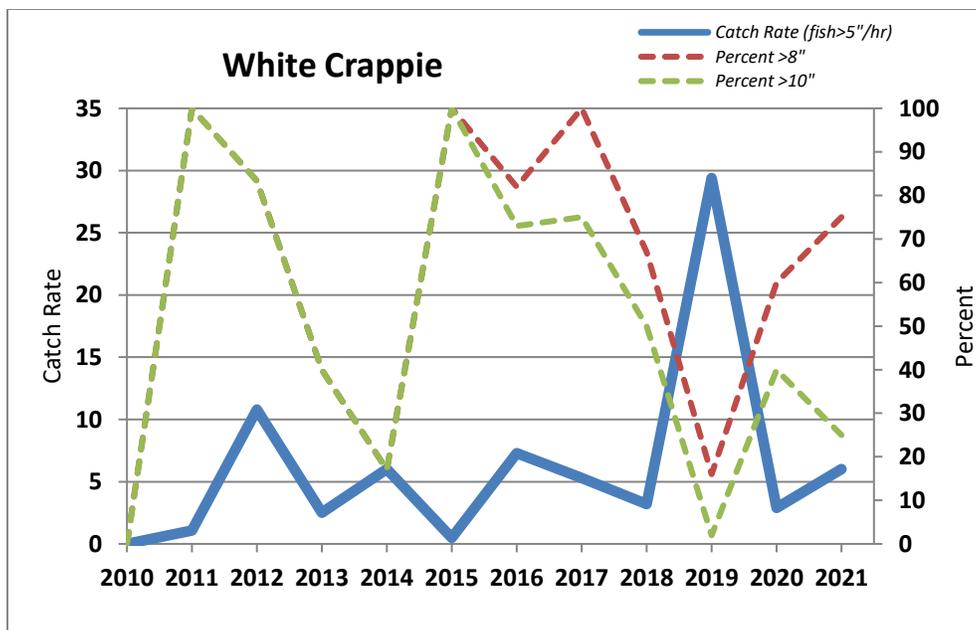


Figure 4. Catch rates and size statistics for white crappie (> 5") in electrofishing samples on Sunrise Reservoir, 2010-2021.

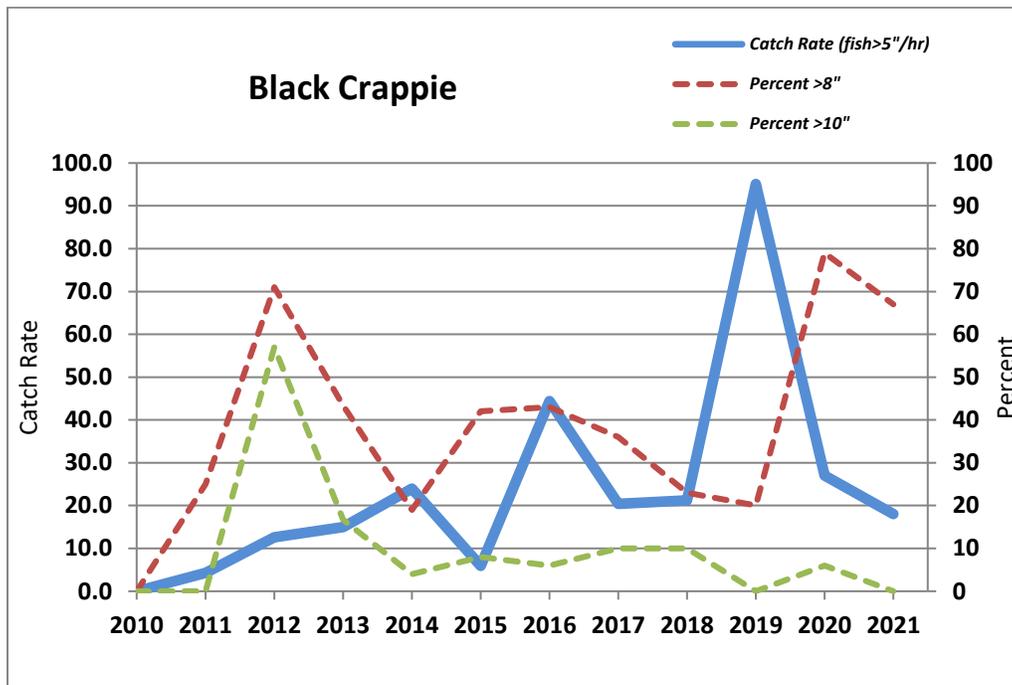


Figure 5. Catch rates and size statistics for black crappie (> 5") in electrofishing samples on Sunrise Reservoir, 2010-2021.