

SURVEY REPORT

OKLAHOMA DEPARTMENT OF WILDLIFE CONSERVATION



FISH MANAGEMENT SURVEY AND RECOMMENDATIONS

FOR

PURCELL LAKE

2025

SURVEY REPORT

State: Oklahoma

Project Title: Purcell Lake Fish Management Survey Report

Period Covered: 2025

Prepared by: OFRL Research Biologists

Date Prepared: January 2026

Purcell Lake

ABSTRACT

Surveys of Purcell Lake were conducted in 2019 and 2023 for Largemouth Bass using standardized electrofishing, 2021 and 2025 for Channel Catfish using hoop nets, and 2023 for crappie using trap nets. Additional Channel Catfish sampling occurred in 2024 and 2025 as part of ongoing research to estimate the population size. The fishery consists of Largemouth Bass, White Bass, various sunfish species, White Crappie, Channel Catfish, and Flathead Catfish. A single Blue Catfish was captured during hoop net sampling in 2025.

INTRODUCTION

Purcell Lake is located three miles southwest of Purcell on Chandler Rd. in McClain County, Oklahoma. The lake is a 157-acre impoundment with a maximum depth of 24 feet and a total water storage capacity of 2,600 acre-ft. It is classified as eutrophic with an average secchi disc visibility of around 57 cm. Fish habitat consists primarily of rip rap and submerged trees. Attempts were made to establish aquatic vegetation such as water willow at various sites around the lake with moderate success.

Our primary management concerns are a severely stunted crappie population, as well as poor Channel Catfish recruitment. Largemouth Bass fry or fingerlings were stocked annually from 2012-2017 and again in 2023. Channel Catfish were last stocked in 2014 (Appendix 1). Fish attractor sites have been constructed from brush piles to improve angler success and are periodically refurbished. Sites were most recently refurbished in December 2022. To see locations of fish attractor sites please visit: [Fish Attractors Map \(arcgis.com\)](#). Purcell lake currently has a city mandated 16-inch minimum length limit for Black (Largemouth) Bass and a 10-inch minimum length limit for Crappie (White or Black). Please see the statewide regulations for more information ([Fishing Regulations | OK Department of Wildlife Conservation](#)).

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Aquatic Nuisance Species

There are no known ANS in Purcell.

RESULTS

Hoop Net (Gear 33)

The lake was sampled for Channel Catfish using tandem hoop net sets from September 6-8, 2025. Eighteen randomly selected sites were sampled for a total of 1,293 units of effort. Mean water temperature was 25.6 °C and a total of 221 fish were caught.

Channel Catfish had a mean total length (TL) of 388 mm (range 212-535). The length-frequency plot is relatively normally distributed and peaks at 390 mm TL compared to the 2021 sample which had few fish < 300 mm TL and peaked around 350 mm TL (Figure 1). Channel Catfish had a mean CPUE of 4 and a standard error (SE) of 1, resulting in a 95% confidence interval (CI) ranging from 2 to 6 Channel Catfish per hoop net set (Table 1). Relative standard error (RSE) was 22.6, suggesting CPUE may be able to detect some change in relative abundance for the species. When estimated by size category RSE suggested CPUE may be harder to detect in the sub stock, stock, and quality size categories (Table 1). Mean relative weight (Wr) was acceptable (90.24) and slightly higher than the statewide 50th percentile (88). Sub stock, stock, and quality sized fish exhibited Wr values (range 88.87 – 97.36) around or above the acceptable threshold (i.e., ≥ 90).

As part of an ongoing research project related to Channel Catfish, abundance was estimated in Summer 2025. Hoop nets and trap nets were used to capture fish across three distinct sampling events and fish were marked by clipping the fish's left pelvic fin initially followed by the right pelvic fin if necessary (i.e., a second recapture of the same fish). Abundance was estimated using the Schnabel Method. The population was estimated at 2,029 individuals (CI: 1,542 – 2,724) in 2025 compared to 2,537 individuals (CI: 1,789 – 3,887) in 2024.

RECCOMENDATIONS

1. Per the 2024 report, we still recommend that the City of Purcell remove the minimum length limit on Crappie spp., and to change Largemouth Bass regulations to match those put out by ODWC.
2. Continue to monitor population dynamics for sportfish species (Largemouth, Sunfish Spp., Catfish Spp.).

Table 1. Channel Catfish catch per unit effort for the total sample and broken down by size category for Purcell Lake.

	Mean	Count	RSE	SE	L 95% CI	U 95% CI	N RSE = 12.5 (25% range)	N RSE = 20 (40% range)
Purcell								
Total	4.10	18	22.60	0.93	2.28	5.91	59	23
Substock	0.33	-	27.98	0.09	0.15	0.52	90	35
Stock	2.32	-	26.12	0.61	1.13	3.50	79	31
Quality	1.45	-	22.65	0.33	0.80	2.09	59	23

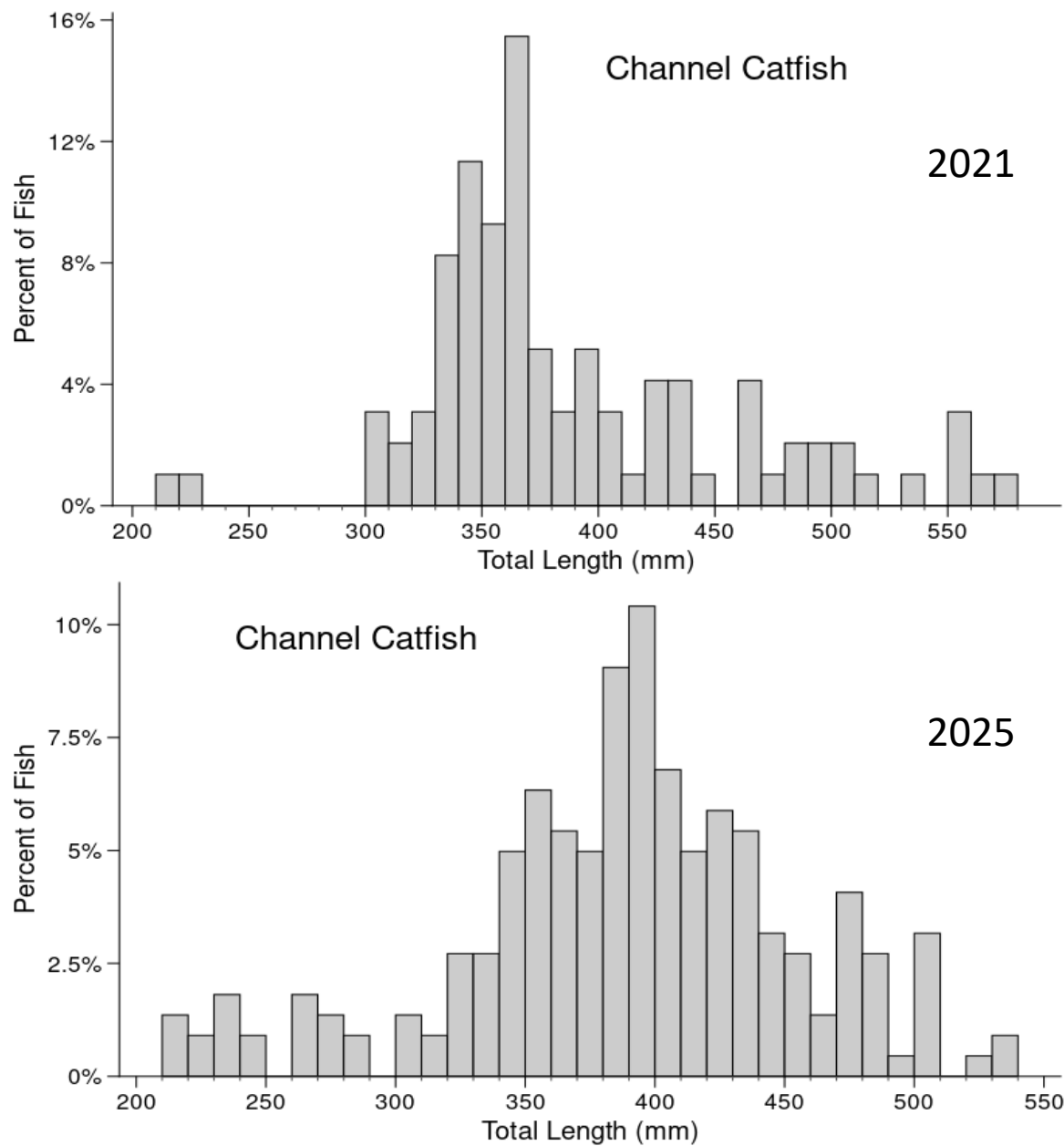


Figure 1. Length-frequency distribution of Elmore City Lake Channel Catfish sampled in 2021 and 2025.

Appendix 1: Species, number, and size of fish stocked in Purcell City Lake since 2012.

Date	Species	Number	Size (inches)
2012	Florida Largemouth Bass	15,000	1.5
2013	Florida Largemouth Bass	50,000	fry
2013	Florida Largemouth Bass	100,000	0.5
2014	Florida Largemouth Bass	50,000	0.5
2014	Channel Catfish	600	7
2015	Florida Largemouth Bass	75,000	fry
2016	Florida Largemouth Bass	75,000	fry
2017	Florida Largemouth Bass	75,000	1.5
2023	Florida Largemouth Bass	61,230	0.5