

SURVEY REPORT
OKLAHOMA DEPARTMENT OF WILDLIFE CONSERVATION



FISH MANAGEMENT SURVEY AND RECOMMENDATIONS
FOR

El Reno Lake

2025

SURVEY REPORT

State: Oklahoma

Project Title: El Reno Lake Fish Management Survey Report

Period Covered: 2025

Prepared by: Oklahoma Fishery Research Laboratory

Date Prepared: December 2025

El Reno Lake

ABSTRACT

El Reno Lake was sampled using electrofishing in spring of 2025 to assess the population of Largemouth Bass. The Lake was also electro fished and gill netted for Flathead and Blue Catfish in the Summer and Winter of 2025, respectively. Catfish sampled ranged from that of stock size to trophy size, and all appeared to have healthy body condition. The Largemouth Bass collected ranged from that of substock size (0 – 199 mm) to memorable size (381 – 509 mm). The Largemouth Bass also displayed relative weight values well-above acceptable for every size category present. These sampling efforts targeted Largemouth Bass, as well as Flathead and Blue Catfish; however, from prior sampling events the fishery is also known to include White Crappie, Bluegill Sunfish, Channel Catfish, Longear Sunfish, Green Sunfish, Black Bullheads, Freshwater Drum, and Gizzard Shad. No regulation changes are recommended at this time.

INTRODUCTION

El Reno Lake is located in El Reno, Canadian County, Oklahoma. The lake has a shoreline length of 4.40 miles, a maximum depth of 19.00 feet, and a surface area of 170.00 acres. Amenities at the lake include a campground, fishing piers, and fishing jetties. Brush piles have been added to the lake to serve as fish habitat.

No special regulations are in place at this site.

El Reno Lake has been previously sampled by ODWC using trapnetting (2013, 2024), hoop netting (2021), gill netting (2013, 2016), and electrofishing (1995, 1996, 2009). The reservoir has been stocked in the past with Saugeye.

Aquatic Nuisance Species

Carp are the only known aquatic nuisance species in Lake El Reno.

RESULTS

Electrofishing- Bass, Random (44.02)

Overview

El Reno Lake was sampled via boat-mounted electrofishing on April 15, 2025 to assess the Largemouth Bass population. The entirety of the shoreline was sampled for 120 minutes of total effort (12, 10-minute runs). The average water temperature was 16°C. A total of 154 Largemouth Bass were collected.

Largemouth Bass

The average total length (TL) of Largemouth Bass at El Reno Lake was 361 mm with a minimum TL of 121 mm and a maximum TL of 535 mm (Table 1). Mean catch per unit effort (CPUE) was 77 with a standard error (SE) of 12, resulting in a 95% confidence interval (CI) ranging from 55 to 100 Largemouth Bass per 10-minute electrofishing sample (Table 2). Relative standard error (RSE) for Largemouth Bass was 14.92, suggesting this gear may be able to reliably track trends in Largemouth Bass relative abundance. This was not the case for most size categories of Largemouth Bass (Table 3), with only preferred size (11.01) fish also falling below the appropriate threshold (i.e., 12.5). However, RSE values suggested CPUE may offer some insight into relative abundance of quality size Largemouth Bass (21.81). The overall mean relative weight (Wr) for Largemouth Bass (107.12) fell above the acceptable threshold (i.e., ≥ 90). Sub stock, stock, quality, preferred, and memorable Largemouth Bass all had mean Wr values above the acceptable threshold.

Electrofishing- Blue/Flathead Catfish (98)

Overview

El Reno lake was sampled via boat mounted electrofishing to target Blue and Flathead Catfish on July 15, 2025. The entirety of the shoreline was sampled for 55 minutes of total effort (11, 5-minute runs). The average water temperature was 29°C. A total of 18 catfish were collected; eight Flathead Catfish and 10 Blue Catfish.

Flathead Catfish

The mean total length (TL) of Flathead Catfish sampled at El Reno Lake was 904 mm with a minimum TL of 739 mm and a maximum TL 980 mm (Table 4). Mean catch per unit effort (CPUE) was 9 with a standard error (SE) of 5, resulting in a 95% confidence interval (CI) ranging from -1 to 18 Flathead Catfish per 5-minute electrofishing run (Table 5). The negative CI is likely the result of incorrect distributional assumptions and should be interpreted as “functionally zero”. Relative standard error (RSE) for Flathead Catfish was 55.90, suggesting the gear could not properly track changes in relative abundance. Likewise, RSE estimates suggested the gear not properly track changes in relative abundance for preferred (55.90), memorable (100.00), or trophy (71.49) sized Flathead Catfish (Table 6). The overall mean relative weight (Wr) for Flathead catfish (102.52) was above the acceptable threshold (i.e., ≥ 90). All preferred, memorable, and trophy size fish also had mean Wr values above acceptable.

Blue Catfish

The mean TL of Blue Catfish was 703 mm with a minimum TL of 416 mm and a maximum TL of 980 mm (Table 4). Mean CPUE was 11 with a standard error (SE) of 6, resulting in a 95% confidence interval (CI) ranging from -1 to 23 Blue Catfish per 5-minute electrofishing run (Table 5). The negative CI is likely the result of incorrect distributional assumptions and should be interpreted as “functionally zero”. RSE for Blue Catfish was 54.41, suggesting the gear could not properly track changes in relative abundance. Likewise, RSE estimates suggested the gear could not properly track changes in relative abundance for stock (100.00), quality (57.25), preferred (67.28), and memorable (100.00) sized Blue Catfish (Table 6). The overall mean relative weight (Wr) for Flathead catfish (109.71) was above the acceptable threshold. All stock, quality, preferred, and memorable size fish also had mean Wr values above acceptable.

Winter Gill Netting- Blue/Flathead Catfish

Overview

Blue and Flathead Catfish were sampled January 7-8, 2026 with experimental “large mesh” gillnets to obtain larger individuals for a more robust age sample. While sampling, the water temperature was 6.4 °C, and the lake was roughly 0.5 m below normal. Effort consisted of four hap-hazard selected sites and 100 total net hours. A total of 49 Blue catfish and 1 Flathead Catfish (720 mm TL) were sampled, and all Blue Catfish were kept for aging purposes. In addition to these species, five additional species were caught including Channel Catfish, Common Carp, Freshwater Drum, River Carpsucker, and Smallmouth Buffalo.

Blue Catfish

The mean TL of Blue Catfish was 712 mm with a minimum TL of 558 mm and a maximum TL of 1,205 mm (Table 4). The length-frequency distribution peaked at 650 mm TL (Figure 1). Mean CPUE was 12 with a standard error (SE) of 4, resulting in a 95% confidence interval (CI) ranging from 4 to 20 Blue Catfish per “large mesh” gillnet set (Table 5). RSE for Blue Catfish was 34.15, suggesting the gear was unlikely to track changes in relative abundance (i.e., ~68%). Likewise, RSE estimates suggested the gear could not properly track changes in relative abundance for quality (33.95), preferred (35.96), memorable (57.74), and trophy (100.00) sized Blue Catfish (Table 6). The overall mean relative weight (Wr) for Blue Catfish (110.6) was above the acceptable threshold. All quality, preferred, memorable, and trophy size fish also had mean Wr values above acceptable (all > 100) and were above 50th percentile values statewide.

Combined Gear Catfish Analysis

For growth and mortality estimates, sampling events (summer electrofishing; winter gill netting) were combined and a total of 64 Blue catfish were aged; ages ranged from 7 to 32 years. A von Bertalanffy growth model was unable to converge, but an age frequency plot shows that roughly 80% of the overall sample was comprised of age-12 and -13 fish (Figure 2). Mean length-at-age consisted of 1 age-1, 2 age-10, 3 age-11, 21 age-12, 18 age-13, 3 age-14, and 1 age-32 fish.

A catch-curve regression estimated an instantaneous mortality (Z) rate of 0.11 resulting in an annual mortality (A) estimate of 10.60% (Figure 3) for Blue Catfish older than age-12. However, the coefficient of determination ($R^2 = 0.43$) suggested this relationship could be highly variable between age groups. Considering the sporadic representation of ages and the low catch rate of smaller fish, Blue Catfish may recruit episodically in this system. It is unknown at this time how Blue Catfish were introduced into the system. No previous stocking records exist for the species. This is the first recorded presence of Blue Catfish in Lake El Reno; though, the reservoir was low-frequency electrofished in 1995, 1996, and 2009 and at least one fish was estimated to be alive during this period.

RECOMMENDATIONS

1. Continue to monitor sportfish populations.

Table 1. Sample size, mean TL (mm), mean weight (g), and associated ranges for Largemouth Bass.

Species	Number	Mean TL (range)	Mean Weight (range)
Largemouth Bass	154	361 (121-535)	859 (25-2875)

Table 2. Total catch per unit effort for Largemouth Bass.

							N RSE =	
							12.5	N RSE =
							U 95%	20 (40%
Species	Mean	Count	RSE	SE	L 95% CI	CI	(25% range)	(40% range)
Largemouth Bass	77	12	14.92	11.49	54.49	99.51	17	7

Table 3. Catch per unit effort by size category for Largemouth Bass.

Species	Size Category	Mean	RSE	SE	L 95% CI	U 95% CI	N RSE = 12.5 (25% range)	N RSE = 20 (40% range)
Largemouth Bass	Substock	3.00	38.92	1.17	0.71	5.29	116	45
Largemouth Bass	Stock	9.50	32.48	3.09	3.45	15.55	81	32
Largemouth Bass	Quality	31.00	21.81	6.76	17.75	44.25	37	14
Largemouth Bass	Preferred	32.50	11.01	3.58	25.49	39.51	9	4
Largemouth Bass	Memorable	1.00	67.42	0.67	-0.32	2.32	349	136

Table 4. Sample size, mean TL (mm), mean weight (g), and associated ranges for Blue and Flathead Catfish sampled with low-frequency electrofishing (LFE) and large-mesh gill nets.

Gear	Species	Number	Mean TL (range)	Mean Weight (range)
LFE	Blue Catfish	10	703 (416-980)	5240 (120-15300)
	Flathead Catfish	8	904 (736-1069)	11138 (4900-20100)
Gill Net	Blue Catfish	49	712 (558-1205)	5834 (2190-29500)
	Flathead Catfish	1	720	-

Table 5. Total catch per unit effort for Blue and Flathead Catfish sampled with low-frequency electrofishing (LFE) and large-mesh gill nets.

								N RSE =	
								N RSE = 12.5 (25% range)	20 (40% range)
Gear	Species	Mean	Count	RSE	SE	L 95% CI	U 95% CI		
LFE	Blue Catfish	10.91	11	54.41	5.94	-0.72	22.54	208	81
	Flathead Catfish	8.73	11	55.90	4.88	-0.83	18.29	220	86
Gill Net	Blue Catfish	11.9	4	34.15	4.06	3.93	19.87	30	12

Table 6. Catch per unit effort by size category for Catfish Electrofishing.

Species	Size Category	Mean	RSE	SE	L 95% CI	U 95% CI	N RSE = 12.5 (25% range)	N RSE = 20 (40% range)
Blue Catfish	Stock	1.09	100.00	1.09	-1.05	3.23	704	275
Blue Catfish	Quality	6.55	57.25	3.75	-0.80	13.89	231	90
Blue Catfish	Preferred	2.18	67.08	1.46	-0.69	5.05	317	124
Blue Catfish	Memorable	1.09	100.00	1.09	-1.05	3.23	704	275
Flathead Catfish	Preferred	4.36	55.90	2.44	-0.42	9.14	220	86
Flathead Catfish	Memorable	1.09	100.00	1.09	-1.05	3.23	704	275
Flathead Catfish	Trophy	3.27	71.49	2.34	-1.31	7.86	360	141

Table 7. Catch per unit effort by size category for Catfish Gill Netting.

Species	Size Category	Mean	RSE	SE	L 95% CI	U 95% CI	N RSE = 12.5 (25% range)	N RSE = 20 (40% range)
Blue Catfish	Quality	8.26	33.95	2.80	2.76	13.76	30	12
Blue Catfish	Preferred	2.92	35.96	1.05	0.86	4.98	33	13
Blue Catfish	Memorable	0.48	57.74	0.28	-0.06	1.02	85	33
Blue Catfish	Trophy	0.24	100.00	0.24	-0.23	0.71	256	100

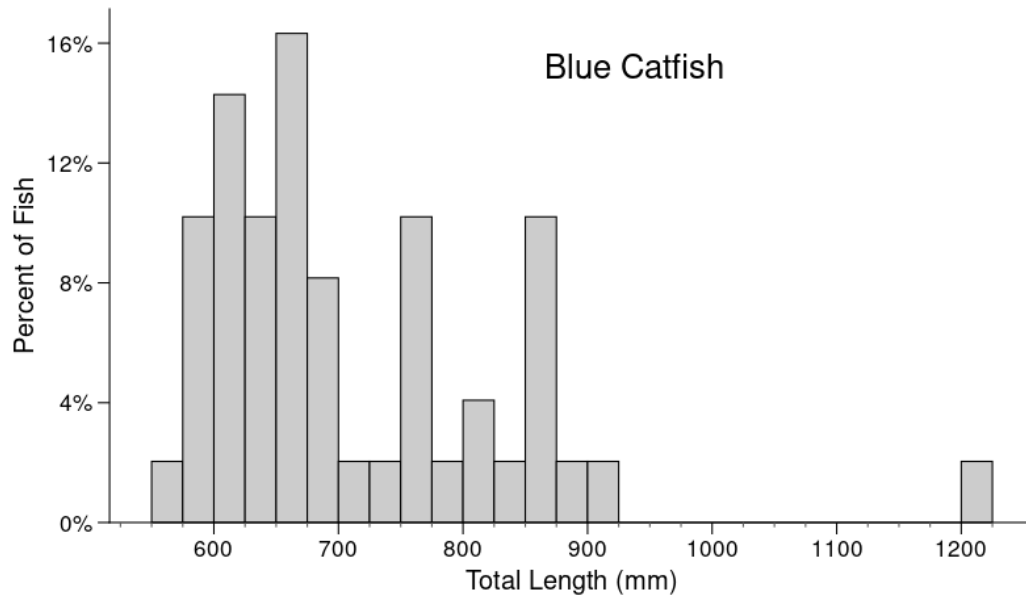


Figure 1. Length-frequency distribution of Blue Catfish caught from large-mesh gillnets.

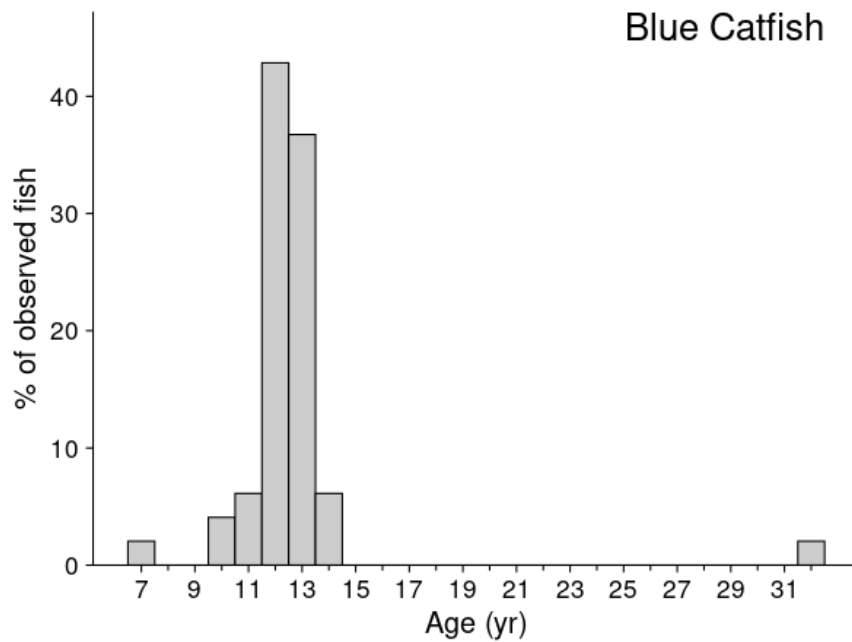


Figure 2. Age-frequency distribution of Blue Catfish.

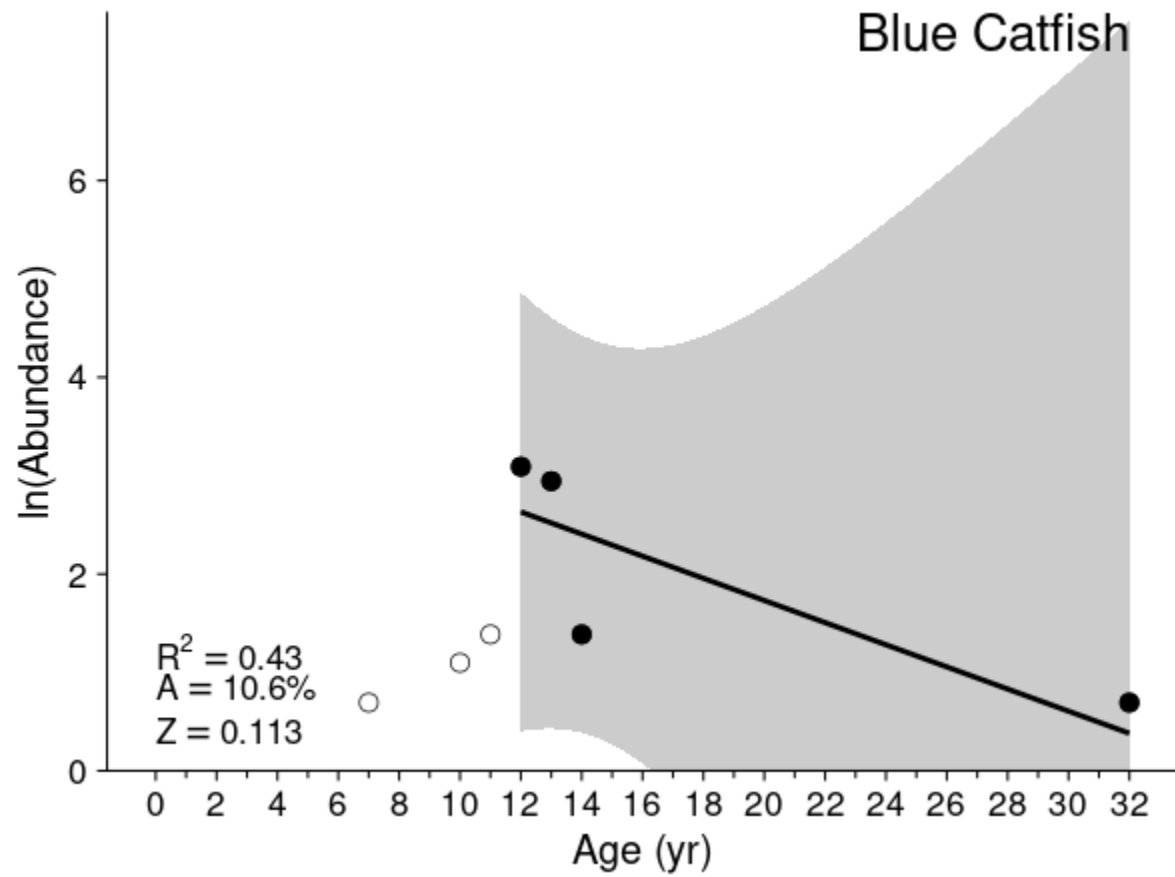


Figure 3. Catch-curve for Blue Catfish.

Appendix 1. Species, number, and size of fish stocked in El Reno Lake since 2016.

Date	Species	Number	Size (inches)
2016	Saugeye	5000	Fingerling
2016	Saugeye	5000	1.5