

SURVEY REPORT
OKLAHOMA DEPARTMENT OF WILDLIFE CONSERVATION



FISH MANAGEMENT SURVEY AND RECOMMENDATIONS
FOR

Eagle Lake

2025

SURVEY REPORT

State: Oklahoma

Project Title: Eagle Lake Fish Management Survey Report

Period Covered: 2025

Prepared by: Oklahoma Fishery Research Laboratory

Date Prepared: November 2025

Eagle Lake

ABSTRACT

Eagle Lake was surveyed by spring electrofishing in 2025 to monitor trends in fish populations. The Largemouth Bass population is self-sustaining. Largemouth Bass and Bluegill Sunfish displayed very healthy body condition. The fishery also includes White Crappie, Longear Sunfish, and Hybrid Sunfish. No regulation changes are recommended at this time.

INTRODUCTION

Eagle Lake is in Del City, Oklahoma County, Oklahoma. Eagle Lake has a surface area of 42.00 acres, and a shoreline length of 1.70 miles. The maximum depth of Eagle Lake is 17.00 feet. The lake was an old sand pit that was acquired by Del City in 2000 and renovated to a public access lake. This lake features a boat ramp and fishing dock in addition to other amenities such as a playground, a picnic shelter and restrooms. Gravel beds act as fish habitat; there are also spider blocks that serve as fish attractors.

Close to Home Fishing regulations apply at this site, which includes an aggregate limit of three panfish, rainbow trout, and channel catfish per person per day. Fishing is limited to no more than three rods and reels per person with no more than three hooks per line; treble hooks are considered one hook. No other fishing methods are permitted.

Eagle Lake has been previously sampled by Spring Electrofishing (1994, 2000, 2004), Gill Netting (2008, 2020, 2021), Hoop Netting (2008, 2012, 2020), and Fall Trap Netting (2020). This lake is stocked with Hybrid Striped bass and Channel Catfish as part of its management as a Close To Home Fishing area. (Appendix 1).

Aquatic Nuisance Species

There are no known ANS species in Eagle Lake.

RESULTS

Electrofishing- Bass, Sunfish (45)

Overview

Eagle Lake was sampled via boat-mounted electrofishing on April 17, 2025. The entirety of the shoreline was sampled for a total of five units of effort (five, 10-minute runs). A total of 223 fish were collected across five species. The most abundant species were Largemouth Bass (n = 134) and Bluegill Sunfish (n = 78).

Largemouth Bass

The mean total length (TL) of Largemouth Bass was 232 mm with a minimum TL of 96 mm and a maximum TL of 445 mm (Table 1). Catch per unit effort (CPUE) of Largemouth Bass was 161 with a standard error (SE) of 8, resulting in a 95% confidence interval (CI) ranging from 144 to 177 Largemouth Bass per 10-minute sample (Table 2). Largemouth Bass relative standard error (RSE) was 5.20, suggesting CPUE is capable of tracking changes in relative abundance with this gear. Sub stock (7.13) and stock sized (12.43) Largemouth Bass also had RSE values that indicated CPUE could be used to track a change in relative abundance within these size categories (Table 3). RSE for quality size (20.7) Largemouth Bass indicated it may be possible to track changes in relative abundance this gear, whereas it would be unlikely that CPUE can be used to track changes in relative abundance of preferred size individuals (48.59). Overall mean relative weights (Wr) for Largemouth Bass (99.83) were above acceptable (i.e., ≥ 90) and all size categories indicated acceptable Wr values.

Bluegill Sunfish

The mean TL of Bluegill Sunfish was 150 mm with a minimum TL of 104 and a maximum TL of 188 (Table 1). Mean CPUE of Bluegill Sunfish was 94 with a SE of 37, resulting in a CI ranging from 20 to 167 Bluegill Sunfish per 10-minute sample (Table 2). Bluegill Sunfish RSE was 39.96, suggesting CPUE is unlikely to detect any changes in relative abundance for the species (i.e., 80%). Likewise, RSE values for stock and quality Bluegill Sunfish suggested CPUE would only track a large change in relative abundance (Table 3). Overall mean Wr was above acceptable (115.89); furthermore, the Wr for stock and quality Bluegill Sunfish were all well above acceptable (> 110).

RECOMMENDATIONS

1. Continue to monitor sportfish species (Bluegill sunfish, Largemouth Bass, Hybrid striped Bass) populations.
2. Add additional sampling methods to include data on catfish populations and potentially forage species.

Table 1. Sample size, mean TL (mm), mean weight (g), and associated ranges for each species represented.

Species	Number	Mean TL (range)	Mean Weight (range)
Bluegill Sunfish	78	150 (104-188)	87 (20-172)
Hybrid Sunfish	1	200	216
Largemouth Bass	134	232 (96-445)	242 (10-1408)
Longear Sunfish	4	134(126-146)	59 (48-74)
White Crappie	5	320 (285-349)	549 (328-682)

Table 2. Total catch per unit effort for each species sampled.

Species	Mean	Count	RSE	SE	L 95% CI	U 95% CI	N RSE = 12.5 (25% range)	N RSE = 20 (40% range)
Bluegill Sunfish	93.60	5	39.96	37.40	20.29	166.91	51	20
Hybrid Sunfish	1.20	5	100.00	1.20	-1.15	3.55	320	125
Largemouth Bass	160.80	5	5.20	8.36	144.42	177.18	1	0
Longear Sunfish	4.80	5	100.00	4.80	-4.61	14.21	320	125
White Crappie	6.00	5	77.46	4.65	-3.11	15.11	192	75

Table 3. Catch per unit effort by size category.

Species	Size Category	Mean	RSE	SE	L 95% CI	U 95% CI	N RSE = 12.5 (25% range)	N RSE = 20 (40% range)
Bluegill Sunfish	Stock	42.00	57.85	24.30	-5.62	89.62	107	42
Bluegill Sunfish	Quality	51.60	33.01	17.03	18.21	84.99	35	14
Largemouth Bass	Substock	68.40	7.13	4.87	58.85	77.95	2	1
Largemouth Bass	Stock	46.80	12.43	5.82	35.40	58.20	5	2
Largemouth Bass	Quality	38.40	20.7	7.96	22.80	54.00	14	5
Largemouth Bass	Preferred	7.20	48.59	3.50	0.34	14.06	76	30
White Crappie	Preferred	2.40	100.00	2.40	-2.30	7.10	320	125
White Crappie	Memorable	3.60	66.67	2.40	-1.10	8.30	142	56

Appendix 1. Species, number, and size of fish stocked in Eagle Lake since 2014.

Date	Species	Number	Size (inches)
2014	Channel Catfish	1640	9
2014	Channel Catfish	1640	10
2015	Channel Catfish	1640	9
2016	Channel Catfish	1640	9
2016	Channel Catfish	1734	13
2017	Channel Catfish	1640	9
2017	Channel Catfish	1642	9
2019	Channel Catfish	554	9
2019	Channel Catfish	2861	9
2019	Hybrid striped Bass	550	1.75
2019	Channel Catfish	75	13
2019	Channel Catfish	1650	8.5
2020	Hybrid striped Bass	630	1.75
2020	Channel Catfish	1715	8.2
2021	Channel Catfish	1647	9
2021	Hybrid striped Bass	998	1
2022	Channel Catfish	1641	10
2022	Hybrid striped Bass	1365	15-20
2024	Channel Catfish	800	12