

**SURVEY REPORT**

**OKLAHOMA DEPARTMENT OF WILDLIFE CONSERVATION**



**FISH MANAGEMENT SURVEY AND RECOMMENDATIONS**

**FOR**

**PRAGUE LAKE**

**2024**

## **SURVEY REPORT**

**State:** Oklahoma

**Project Title:** Prague Lake Fish Management Survey Report

**Period Covered:** 2024

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**Date Prepared:** January 2<sup>nd</sup>, 2025

### **Prague Lake**

#### **ABSTRACT**

Prague Lake was surveyed by spring electrofishing (2024) techniques to monitor trends in Largemouth Bass populations. Largemouth Bass abundance and size structure decreased but remained high enough to still be considered quality fishery, while relative weights increased. Continued monitoring of the Largemouth Bass population dynamics is recommended.

## INTRODUCTION

Prague Lake impounds Sand Creek 5 miles northwest of Prague in Lincoln County, Oklahoma. Prague Lake covers 225 surface acres and was constructed in 1984 by the City of Prague. The lake has a mean depth of 11 ft, and a secchi disc visibility of around 58 inches in the main pool in August. However, turbid water conditions often occur for extended periods of time following heavy rains. Fish habitat consists primarily of flooded timber and aquatic vegetation.

The main fisheries management problem was a decline in Channel Catfish abundance. Past stockings of fingerlings increased their abundance. However, stocking frequency has been reduced. The Channel Catfish stocking program is meant to establish a self-sustaining population. Natural reproduction occurs but recruitment appears poor. Florida largemouth bass fingerlings are stocked frequently to enhance trophy bass potential (Appendix 1). More recent concerns with repeated poor recruitment of Largemouth Bass and overabundance of invasive Eurasian Watermilfoil has warranted increased population surveys and stocking of grass carp for vegetation control.

Two large brush rows were constructed prior to impoundment from trees cleared during dam construction to provide fish attractor habitat. 14 other fish attractor locations have been added since impoundment, 12 of which were created in 2015 with the deployment of artificial starfish structures. A boating access project consisting of the installation of a boat ramp, boat dock, and a gravel parking lot was completed in 1990. Restrooms were installed in 1991. A fishing access project consisting of the installation of a walkway and covered fishing dock was completed in 1992. The boat dock and fishing dock were heavily damaged by high winds in 1994 and were repaired. The gravel parking lot was asphalted in 1998.

Species found in recent surveys, but not specifically mentioned in this report include: Bluegill Sunfish, Brown Bullhead, Golden Shiner, Green Sunfish, Redear Sunfish, and Rock Bass.

Current Prague Lake Fishing Regulations: City Imposed

- No Bass under 14" in length.
- No more than 5 bass per day
- No catfish under 10 " in length
- 15 fish limit per day

Prague Lake was surveyed by spring electrofishing (2024) techniques to monitor trends in fish populations.

## RESULTS

### Largemouth Bass

Largemouth Bass (LMB) were surveyed in spring of 2024 by means of boat electrofishing. Seven randomly selected shoreline units were sampled. Overall LMB abundance, catch per unit of effort (CPUE) decreased in 2024 (CPUE = 47.1) compared to 2023 (CPUE = 64.0) (Table 1). CPUE decreased for all size classes from 2023 to 2024 except for Quality size fish where an increase occurred from CPUE = 11.5 to CPUE = 15.4. While overall CPUE decreased during the 2024 survey, the abundance CPUE was still considered a quality fishery with a CPUE greater than 40, and had high abundance of quality size fish. Poor recruitment was observed with lower than desired abundance of sub stock size fish (CPUE = 6.0).

Length frequency histograms showed a decrease in overall size structure in 2024 compared to 2023 (Figure 1) it also indicates poor recruitment from 2023 with few fish present below eight inches in length. Proportional size distribution (PSD) values increased for quality size fish (PSD-Q = 88), but decreased slightly for both preferred (PSD-P = 50) and memorable (PSD-M = 8) size classes compared to the 2023 survey (Table 2). Body condition or relative weights (Wr) for all size classes surveyed were above acceptable values of 90 and had increased in all size classes compared to 2023 except for the memorable size class where a slight decrease from Wr=100 to Wr=98 occurred (Table 1). The largest fish sampled was from the 2023 survey and measured 23.07 (in) in total length and 6.7 (lbs) in weight.

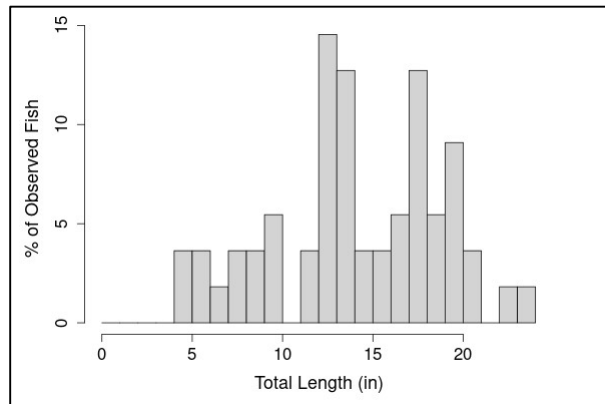
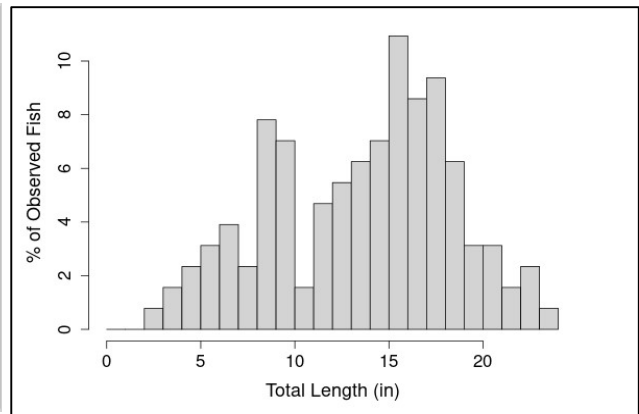
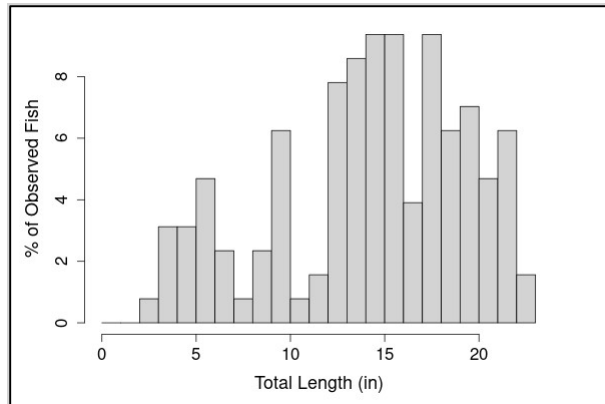
No age data was collected during the 2024 survey. The most recent stocking of FLMB occurred in 2023 with 16,965 fingerlings.

Florida Largemouth Bass (FLMB) have been stocked frequently in Prague Lake from 1996 to present (Appendix 1) in an effort to introduce FLMB genetics into the bass population. FLMB will grow quicker and larger than native Northern Largemouth Bass, given enough forage and the right conditions within the system. Largemouth Bass genetics were sampled in 2023 to determine the extent of Florida largemouth bass genetics within the population. FLMB genetic samples during the 2023 survey are still being process (Table 4).

Overall LMB abundance decreased, relative weights increased slightly. While abundance decreased, Prague Lake is still classified as a quality bass fishery. Poor recruitment was observed from the 2023 year class during the 2024 survey. Prague Lake will continue to receive periodic Florida largemouth bass stockings. Eurasian Watermilfoil abundance has increased drastically in the past number of years, which could hinder the efficiency at which LMB are collected in surveys, leading to and under estimation of relative abundance. Continued monitoring of the LMB population dynamics and FLMB stocking success should occur. State law allows harvest up to six bass of which only one may be greater than 16 inches, while Prague city regulations have a 14 inch minimum and only five bass per day. The combination of the two regulations only allows for the harvest of 14 and 15 inch bass with only one over 16 inches and a max of five fish, for this reason, no changes are recommended for Largemouth Bass regulations at this time.

**Table 1.** Total number (No.), catch per unit of effort (CPUE), and relative weights (Wr) by size groups of Largemouth Bass collected by spring electrofishing from Prague Lake. Acceptable Wr values are  $\geq 90$ .

		Total CPUE	Substock 0-7.8 in	Stock 7.9 in		Quality 11.8 in		Preferred 15 in		Memorable 20.1 in		Trophy 24.8 in	
Year	No.	CPUE	CPUE	CPUE	Wr	CPUE	Wr	CPUE	Wr	CPUE	Wr	CPUE	Wr
2005	171	114.0	30.0	19.3	92	37.3	95	26.7	95	0.7	101	.	.
2018	128	128.0	18.0	15.0	91	32.0	97	47.0	100	16.0	104	.	.
2023	128	64.0	9.0	13.5	91	11.5	95	25.0	97	5.0	100	.	.
2024	55	47.1	6.0	5.1	95	15.4	100	17.1	100	3.4	98	.	.



**Figure 1.** Largemouth Bass Length Frequencies for Prague Lake 2018 (Top Left), 2023 (Top Right), and 2024 (Lower Left).

**Table 2.** Proportional Size Distribution (PSD) of Largemouth Bass. Quality (PSD-Q) preferred (PSD-P) and memorable (PSD-M) lengths. PSD values indicate the proportion of fish in or above the quality, preferred or memorable size classes.

<u>Year Surveyed</u>	<u>PSD-Q</u> <u>(11.8 in)</u>	<u>PSD-P</u> <u>(15 in)</u>	<u>PSD-M</u> <u>(20.1 in)</u>
<u>2005</u>	77	33	1
<u>2018</u>	86	57	15
<u>2023</u>	75	55	9
<u>2024</u>	88	50	8

**Table 3.** Largemouth Bass Genetic Samples 2015 and 2023.

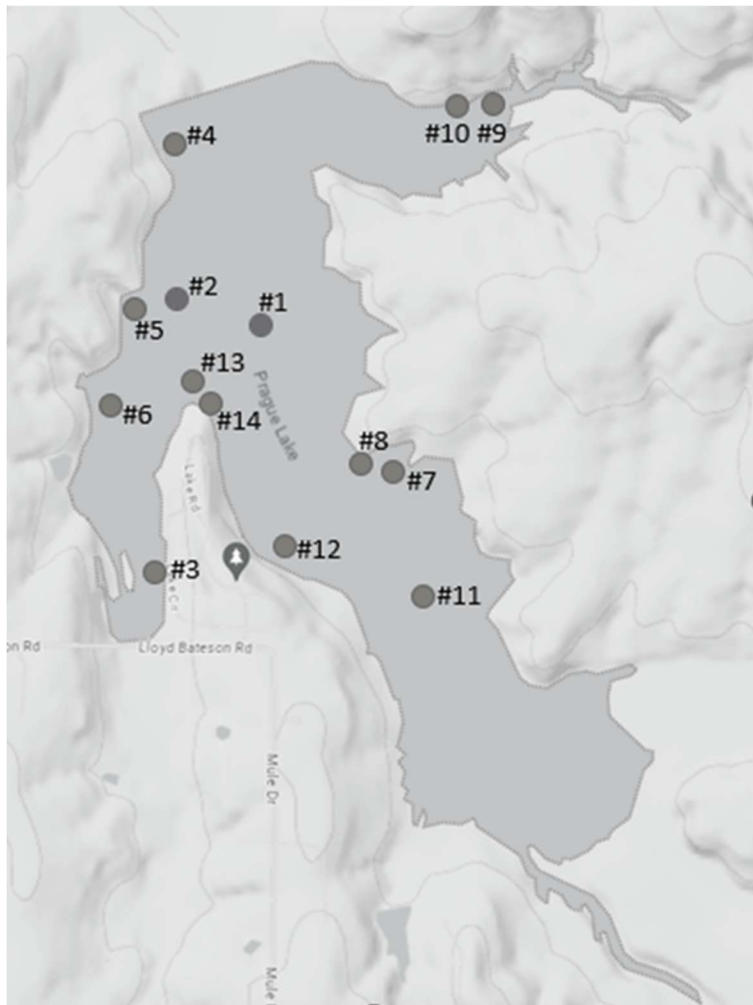
<b>Bass DNA Summary</b>									
<b>Year</b>	<b>%FLMB</b>	<b>%NLMB</b>	<b>% F1</b>	<b>% FX-F</b>	<b>% FX-N</b>	<b>% FX</b>	<b>% DNR</b>	<b>% F+F1</b>	<b># Sampled</b>
<b>2015</b>	6.3%	0.0%	15.6%	43.8%	18.8%	15.6%	20.0%	21.9%	40
<b>2023</b>	TBD	.	.	.	.	.	.	.	73

<b>Genotype</b>	<b>Description</b>
<b>FLMB</b>	Only Florida Strain Alleles
<b>NLMB</b>	Only Native Strain Alleles
<b>F1</b>	First Cross-Both Alleles present for all markers
<b>FX-F</b>	Hybrid Cross-mostly Florida Alleles
<b>FX-N</b>	Hybrid Cross-mostly Native Alleles
<b>FX</b>	Hybrid Cross-equal number of Alleles for 2 or 3 markers
<b>DNR</b>	Did not run or file unreadable.

**Appendix 1.** Species, number, and size of fish stocked in Prague Lake since 2000.

<b>Date</b>	<b>Species</b>	<b>Number</b>	<b>Size (inches)</b>
<b>2000</b>	<b>Florida Largemouth Bass</b>	<b>6,796</b>	<b>3</b>
	<b>Channel Catfish</b>	<b>6,019</b>	<b>7</b>
<b>2001</b>	<b>Channel Catfish</b>	<b>6,000</b>	<b>7</b>
<b>2002</b>	<b>Florida Largemouth Bass</b>	<b>6,490</b>	<b>3</b>
<b>2004</b>	<b>Florida Largemouth Bass</b>	<b>6,100</b>	<b>3</b>
<b>2012</b>	<b>Florida Largemouth Bass</b>	<b>25,704</b>	<b>1.5</b>
<b>2013</b>	<b>Florida Largemouth Bass</b>	<b>30,700</b>	<b>1.5</b>
<b>2014</b>	<b>Florida Largemouth Bass</b>	<b>31,825</b>	<b>1.5</b>
<b>2016</b>	<b>Florida Largemouth Bass</b>	<b>30,005</b>	<b>1.5</b>
<b>2017</b>	<b>Florida Largemouth Bass</b>	<b>30,030</b>	<b>1.5</b>
<b>2018</b>	<b>Florida Largemouth Bass</b>	<b>30,122</b>	<b>1.5</b>
<b>2020</b>	<b>Florida Largemouth Bass</b>	<b>10,070</b>	<b>1.75</b>
	<b>Florida Largemouth Bass</b>	<b>9,600</b>	<b>1.5</b>
<b>2023</b>	<b>Florida Largemouth Bass</b>	<b>16,965</b>	<b>1.5</b>
<b>2024</b>	<b>Grass Carp</b>	<b>6</b>	<b>18</b>

## Appendix 2. Prague Lake Fish Attractor Locations



Fish Attractor Site Information for Prague Lake.

Area Name	Site #	Latitude	Longitude	Habitat Typ	Marked	Bank Acces	Date
Middle of lake	1	35.526944	-96.7225	Brush Pile	Y	N	7/21/2015
West bank	2	35.527222	-96.724722	Brush Pile	Y	N	7/21/2015
West Bank, North of brushpile buoy	3	35.5233	-96.725233	Starfish	Y	N	7/21/2015
West end of dam, tree grove	4	35.530233	-96.724883	Starfish	Y	N	7/21/2015
West Cove, west bank near big brushpile buoy	5	35.52735	-96.725516	Starfish	Y	N	7/21/2015
West Cove, even with north end of boat ramp point	6	35.525383	-96.726233	Starfish	Y	N	7/21/2015
East Cove East bank, west end of small rocky point	7	35.524166	-96.719466	Starfish	Y	N	7/21/2015
East Cove East bank, south side of rocky point	8	35.524283	-96.720183	Starfish	Y	N	7/21/2015
Northeast Cove	9	35.530833	-96.718116	Starfish	Y	N	7/21/2015
Northeast Cove	10	35.530466	-96.71875	Starfish	Y	N	7/21/2015
Old roadbed in East Arm	11	35.522116	-96.71955	Starfish	Y	N	7/21/2015
Pond dam in East Arm	12	35.52265	-96.722016	Starfish	Y	N	7/21/2015
North of boat ramp	13	35.525866	-96.72425	Starfish	Y	N	7/21/2015
North of boat ramp	14	35.52565	-96.7239	Starfish	Y	N	7/21/2015