

**SURVEY REPORT**

**OKLAHOMA DEPARTMENT OF WILDLIFE CONSERVATION**



**FISH MANAGEMENT SURVEY AND RECOMMENDATIONS**

**FOR**

**LINDSAY CITY LAKE**

**2024**

## **SURVEY REPORT**

**State:** Oklahoma

**Project Title:** Fish Management Survey Report

**Period Covered:** 2024

**Prepared by:** Oklahoma Fishery Research Laboratory

**Date Prepared:** December 2024

### **ABSTRACT**

Lindsay City Lake was surveyed by spring electrofishing in 2023 to assess the Largemouth Bass population. Hoop netting for Channel Catfish was completed in 2021 and additional sampling occurred in 2024 as part of ongoing research to estimate the population size. Trap netting for White Crappie also occurred in 2024. The fishery consists of Largemouth Bass, various Sunfish species, White Crappie, Channel Catfish and Flathead Catfish. Considering the slow growing, stunted nature of the White Crappie population, harvest is highly encouraged (within the limit of the statewide regulation of 37 fish per angler per day).

## INTRODUCTION

Lindsay City Lake is located in George Brown Park west of Highway 76 in Lindsay, Oklahoma. The lake is twenty acres in size, has just over one mile of shoreline and is adjacent to a 9-hole golf course. Fish habitat consists of flooded willow stubs and artificial PVC fish attractor cubes. At full pool, as minimal amount of Pond Weed, Water Willow, and Bulrush is present around the perimeter of the lake. Secchi depth is generally around 40 centimeters.

Fish attractor sites have been established to improve angler success and are periodically refurbished. Fish attractor sites were recently established in 2024 ([Fish Attractors Map \(arcgis.com\)](https://arcgis.com)).

Our primary management goal is to establish relevant baseline data considering the lack of sampling until recently. Lindsay lake has one fishing dock that also serves as a loading/unloading dock for the single boat ramp on the lake. The fishery consists of Largemouth Bass, various sunfish species, White Crappie, Channel Catfish and Flathead Catfish.

### Aquatic Nuisance Species

There are no known ANS in Lindsay.

## RESULTS

### Fall Trap Net (Gear 31)

Crappie were sampled at Lindsay City Lake, Lindsay, OK using gear 31 from October 21-22, 2024. The average water temperature was 18.3 C. Sites were randomly chosen as specified by SSP for a total of 349 hours of effort resulting in the capture of 294 White Crappie. No Black Crappie were observed during sampling.

The mean total length (TL) of White Crappie sampled was 184 mm with a range of 90-371 mm (Figure 1). The mean catch per unit effort (CPUE) of White Crappie was 20.2 with a standard error (SE) of 5.6 and a relative standard error (RSE) of 27.7. The lower and upper 95% confidence interval (CI) values were 9.2 and 31.1 respectively (Table 1). Substock, stock, quality, and preferred sized fish had mean CPUEs ranging from 0.3-15.5 and SE ranging 0.1-4.6 (Table 1). Stock sized fish had the highest mean CPUE (15.5) with a SE of 4.6 and RSE of 29.6 (Table 1).

A total of 139 crappie were aged, ranging from 0-5 years of age, with no age 3 fish observed. Approximately 80% of fish were ages 0-2 years old. The mean TL at age-0 was 110 mm, 169 mm at age-1, 186 mm at age-2, 199 mm at age-4, and 233 mm at age-5. The overall mean relative weight (Wr) was 94.2 and Wr for all size categories was above 80 (Table 2). A von Bertalanffy growth curve predicted a theoretical maximum length ( $L_{\infty}$ ) of 211 mm, a growth coefficient (K) of 0.7, and a  $t_0$  -1.1 (Figure 2). A catch-curve regression calculated an annual mortality (A) of 43.6% and an instantaneous mortality (Z) of 0.6 (Figure 3).

### **Hoop Net (Gear 33)**

As part of an ongoing research project related to Channel Catfish, abundance was estimated in Spring 2024. Hoop nets were used to capture fish across two distinct sampling events and fish were marked by clipping the fish's left pelvic fin. Abundance was estimated using the Schnabel Method. The population was estimated at 230 individuals (95 % CI 92-596).

### **RECOMENDATIONS**

1. Continue to monitor population dynamics for sportfish species (Largemouth, Sunfish spp., White Crappie, Catfish spp.).
2. Crappie harvest is highly encouraged (within the limit of the statewide regulation of 37 fish per angler per day).
3. No regulation changes are recommended at this time.

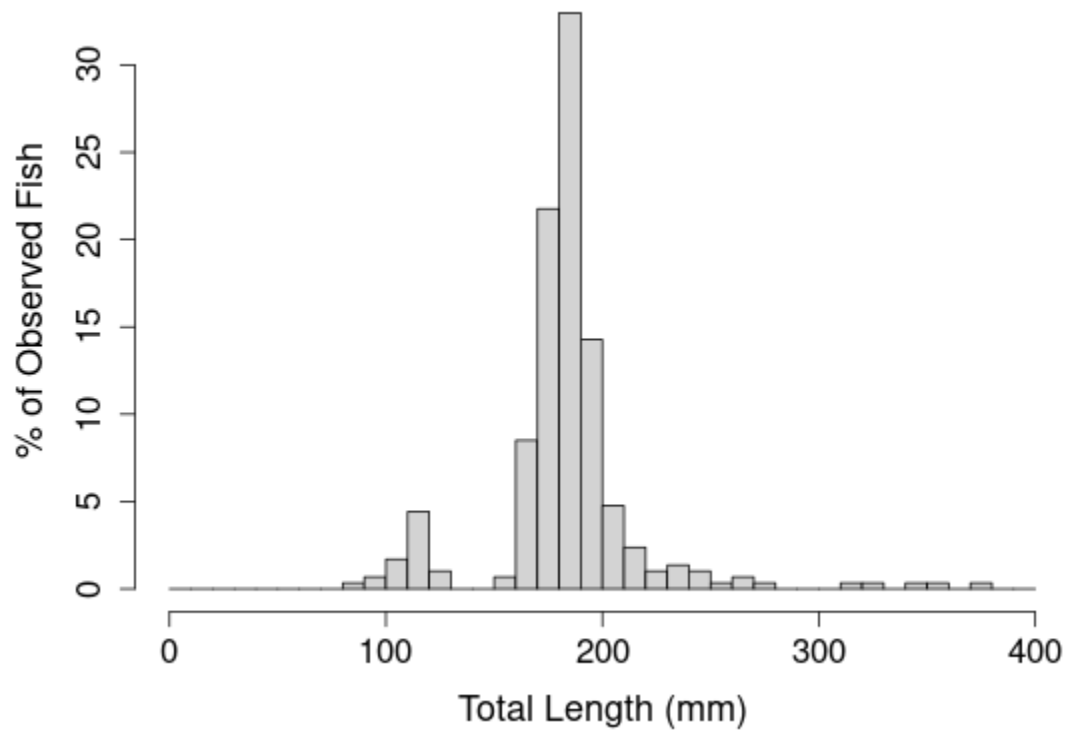
**Table 1.** Catch per unit effort (CPUE) of total sample and species size categories of White Crappie from Lindsay City Lake.

	Mean	Count	RSE	SE	L 95% CI	U 95% CI	N RSE = 12.5 (25% range)	N RSE = 20 (40% range)
<b>Lindsay</b>								
<b>White Crappie</b>								
Total	20.2	15	27.7	5.6	9.2	31.1	74	29
Substock	1.6		66.5	1.1	0	3.8	424	166
Stock	15.5		29.6	4.6	6.5	24.5	84	33
Preferred	0.3		44.3	0.1	0.0	0.5	189	74
Memorable	0.3		37.8	0.1	0.1	0.6	137	54

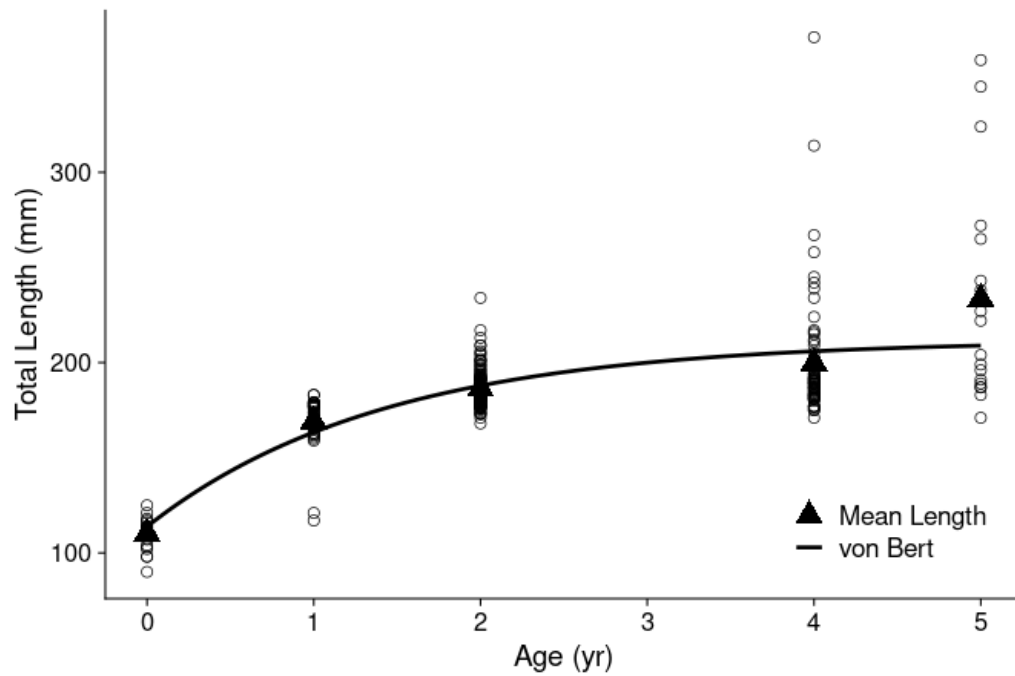
**Table 2.** Relative Weights (Wr) of White Crappie from Lindsay City Lake.

	Mean	Count	CV	SE	L 95% CI	U 95% CI
<b>Lindsay</b>						
<b>White Crappie</b>						
Overall	94.2	290	11.9	0.7	93.0	95.5
Substock	93.4	20	25.2	5.3	83.1	103.7
Stock	96.1	226	9.6	0.6	94.9	97.3
Quality	84.0	35	8.3	1.1	81.7	86.3

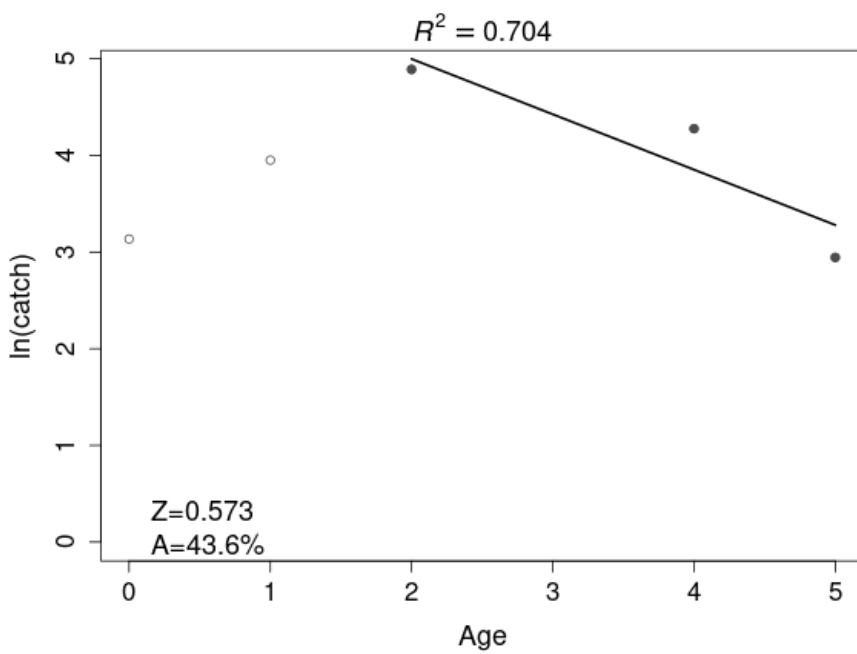
Preferred	88.1	4	4.5	2.0	84.2	92.0
Memorable	89.8	5	6.8	2.7	84.5	95.1



**Figure 1.** Length-frequency distribution of White Crappie from Lindsay City Lake.



**Figure 2.** von Bertalanffy growth curve for White Crappie from Lindsay City Lake.



**Figure 3.** Catch curve for White Crappie from Lindsay City Lake.