

SURVEY REPORT

OKLAHOMA DEPARTMENT OF WILDLIFE CONSERVATION



FISH MANAGEMENT SURVEY AND RECOMMENDATIONS

FOR

LINDSAY CITY LAKE

2023

SURVEY REPORT

State: Oklahoma

Project Title: Fish Management Survey Report

Period Covered: 2023

Prepared by: OFRL

Date Prepared: Jan. 2024

ABSTRACT

Lindsay City Lake was surveyed by spring electrofishing in 2023 to assess the Largemouth Bass population. No Largemouth Bass samples have been conducted on Lindsay City Lake in the previous ten years, however, the lake was hoop netted for Channel Catfish evaluation in 2021. The fishery consists of Largemouth Bass, various Sunfish species, White Crappie, Channel Catfish and Flathead Catfish. No regulation changes are recommended at this time.

Introduction

Lindsay reservoir is 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 that grew up during the past drought when the lake was low. There is also some pond weed present around the perimeter of the lake. Secchi depth was recorded at 40 centimeters.

Primary management goal was to establish relevant baseline data considering this lake had not been sampled in the previous ten years. 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

Spring Bass Electrofishing

Largemouth Bass (LMB) were surveyed in spring of 2023 by means of boat electrofishing. Sampling occurred in accordance with the Oklahoma Department of Wildlife's Standard Sampling Procedures (SSP). During sampling the water temperature was 16.7° C (62° F), and the lake appeared to be at normal pool. We sampled the entire perimeter of the lake, which equaled six sampling sites, and a total of 35 Largemouth Bass were sampled.

Median total length of all LMB sampled was 277 mm with a minimum length of 92mm and a maximum length of 528 mm (Figure 1). Mean CPUE of LMB was 35.0 (19.1-50.9 95% CI) with a standard error (SE) of 8.11 and a relative standard error (RSE) of 23.18 (Table 1).

A total of 35 LMB were aged; ages ranged from 1 to 11 years. von Bertalanffy growth shows a theoretical maximum length (L_{∞}) of 620 mm TL, a growth coefficient (K) of 0.18, and a t_0 of -0.41 (Figure 2). A catch-curve regression calculated an annual mortality (A) of 15.8 % and an instantaneous mortality (Z) of 0.172 (Figure 3).

RECOMENDATIONS

1. Continue to monitor population dynamics for sportfish species (Largemouth, Sunfish Spp., Catfish Spp.).
2. No regulation changes are recommended at this time.

Table 1: Catch per unit effort of Largemouth Bass in Lindsay City Lake 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) |
|---------|---------------|------|-------|------|-------------|-------------|-----------------------------|---------------------------|
| LMB | substock | 5.0 | 36.88 | 1.84 | 1.39 | 8.61 | 52 | 20 |
| LMB | stock | 17.0 | 30.79 | 5.23 | 6.74 | 27.26 | 36 | 14 |
| LMB | quality | 3.0 | 68.31 | 2.05 | -1.02 | 7.02 | 179 | 70 |
| LMB | preferred | 7.0 | 56.06 | 3.92 | -0.69 | 14.69 | 121 | 47 |
| LMB | memorable | 3.0 | 68.31 | 1.34 | -1.02 | 7.02 | 179 | 70 |

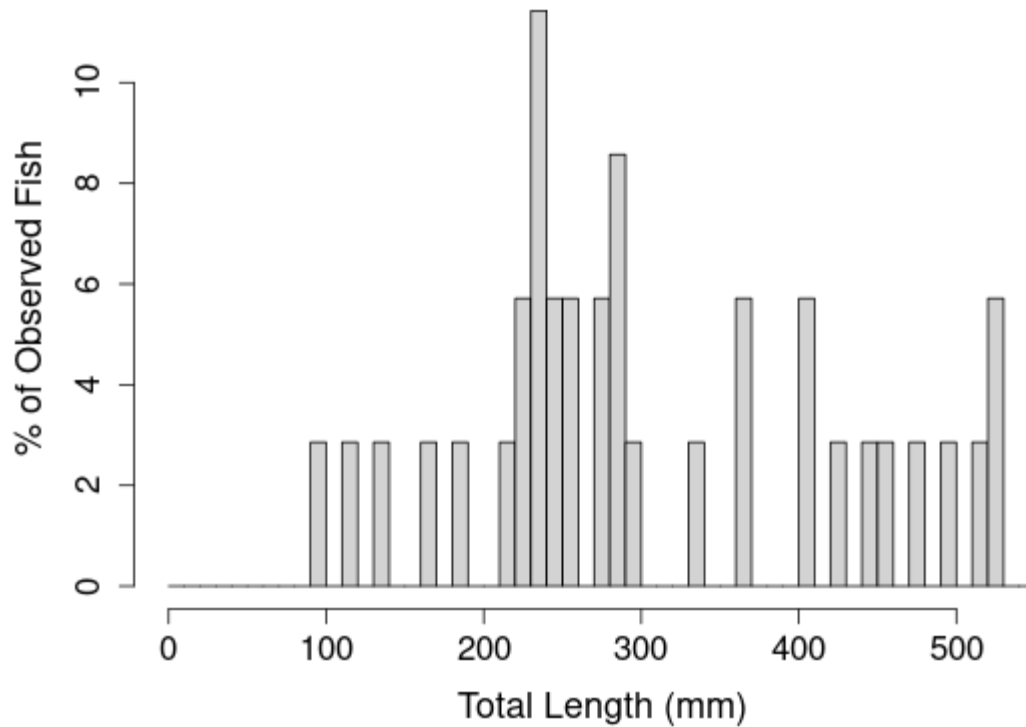


Figure 1: Length-frequency distribution of Largemouth Bass in Lindsay City Lake.

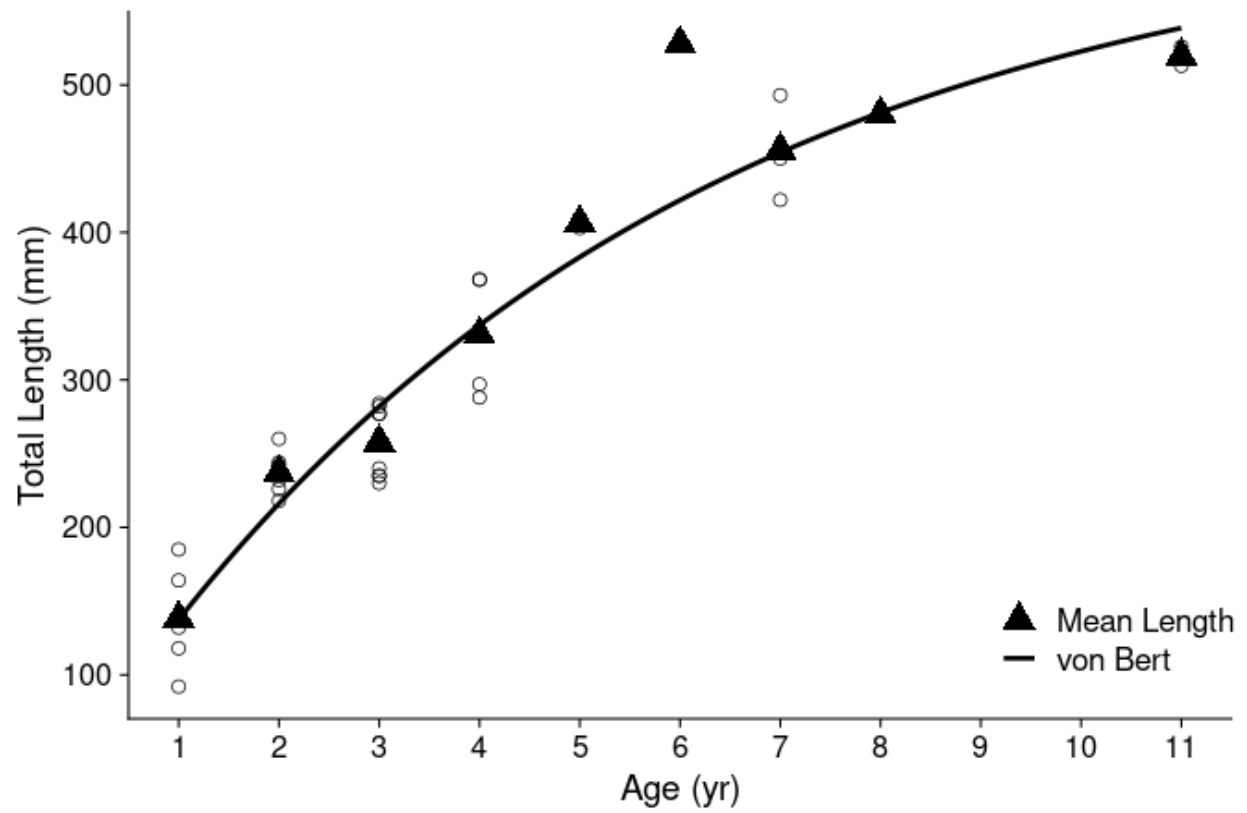


Figure 2: von Bertalanffy growth curve for Largemouth Bass in Lindsay City Lake.

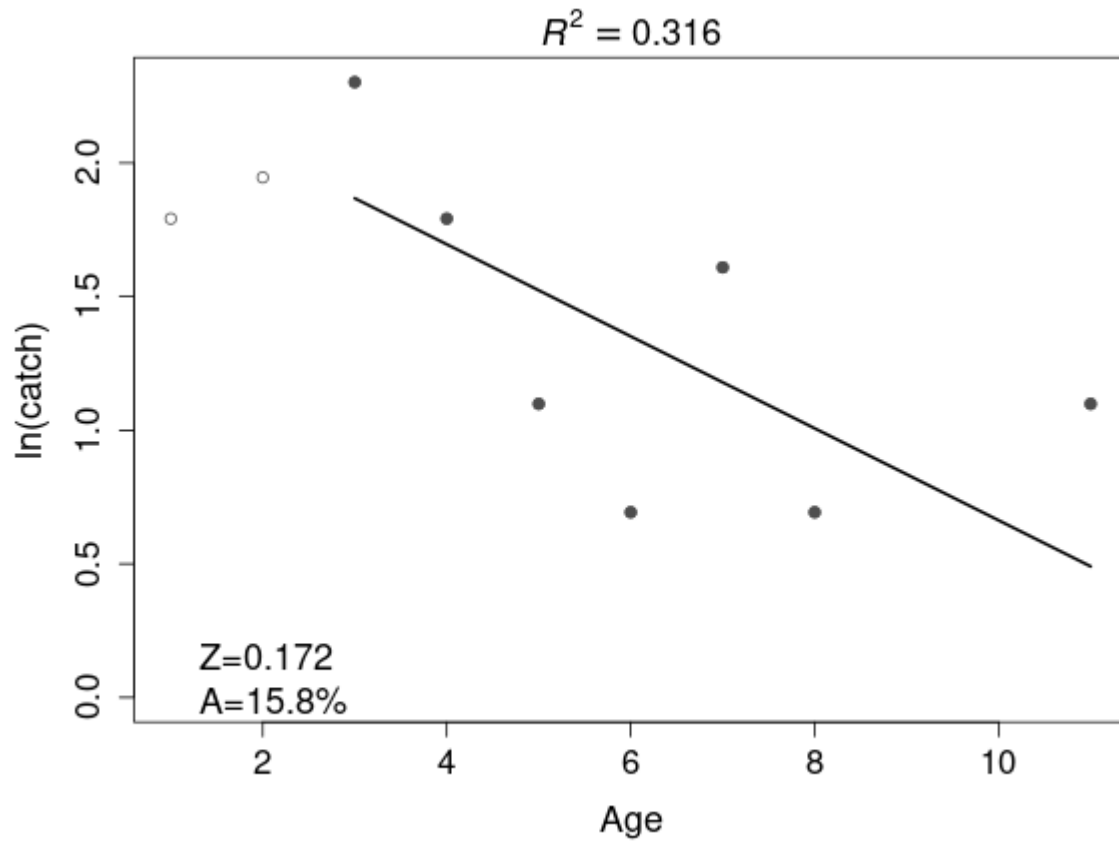


Figure 3: Catch curve for Largemouth Bass in Lindsay City Lake.