SURVEY REPORT

OKLAHOMA DEPARTMENT OF WILDLIFE CONSERVATION

FISH MANAGEMENT SURVEY AND RECOMMENDATIONS

FOR

HASKELL CITY LAKE

2022

SURVEY REPORT

State: Oklahoma

Project Title: Haskell City Lake Fish Management Survey Report

Period Covered: 2022.

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Date Prepared: December 2023

Haskell City Lake

ABSTRACT

Haskell City Lake was surveyed by spring boat electrofishing to monitor trends in fish populations. Total fish abundance for Largemouth bass had increased and was considered that of a quality fishery, including a high abundance of quality size and larger Largemouth bass were present. A subset of largemouth bass were taken for age and growth analysis. Haskell city lake will fall under the proposed new bass regulations of 6 bass/day and only 1 fish >16" allowed. This new regulation should allow anglers to harvest more largemouth bass to help reduce competition and help overall bass growth.

Recommendations include conducting spring electrofishing for largemouth bass in 2025 and collecting a subset of the sample for age and growth analysis to monitor the effect of the new regulation.

INTRODUCTION

Haskell City Lake impounds Coal Creek, within the city limits of Haskell in Muskogee County, Oklahoma. Haskell City lake covers 20 surface acres and was constructed by the City of Haskell for water supply. Haskell City Lake has a mean depth of 10 feet and a maximum depth of 30 feet, a secchi depth of approximately 13 inches in the main pool in August, turbidity is primarily from plankton. Fish habitat mainly consists of fallen trees and aquatic vegetation, both emergent and submerged, which dominate the more shallow upper reaches of the lake.

Recent Haskell city lake stockings consist of channel catfish (Appendix 1.) A fishing dock and boat ramp were constructed under a cooperative agreement between ODWC and the City of Haskell in the late 1980's that utilized Federal Aid monies. Several improvements around the lake have recently occurred and maintenance of the grounds has increased leading to a rejuvenation of the area as a recreational destination for locals. Haskell city lake falls under statewide regulations for creel and length limits.

Fish attractor sites in Haskell consists of spider blocks placed around the courtesy dock in 2008 (Appendix 2).

Largemouth Bass

Largemouth Bass (LMB) were surveyed in the spring of 2022 via boat electrofishing. Sample sites were discrete 10 minute units of effort and the entire shoreline was sampled in a counter clockwise fashion. Overall LMB abundance, measured by catch per unit of effort (CPUE), increased to 214.5 bass/hr which is significantly higher than the previous samples (Table 1). Catch rates were above acceptable levels (40 bass/hr) for a quality fishery in the quality size range and near the acceptable range in the preferred category. LMB body condition, measured as relative weight (Wr), were below acceptable levels for all size classes (>90) in all size classes except the stock size. The overall average body condition was poor at 81.3 (Table 1). Proportional size distribution (PSD) shows a population that falls within the balanced guidelines, with an increase in the preferred category from the 2019 survey (Table 2). The 2022 length frequency histogram shows a bimodal distribution with the 8 and 12 inch size classes being the most dominant and 47% of bass sampled were at or above 12 inches (Figure 1). Age and growth analysis shows Haskell LMB to be slow growing, taking between 4 and 5 years to reach 14 inches in length (Table 3). Ages 1-10 were represented with the two and four year old classes being the most dominant (Figure 2). The data doesn't show a stunted bass population, however, the high abundance, poor body condition and slow growth does highlight the need for increased harvest of bass from Haskell lake. Stochastic large year classes and fish longevity seem to be driving the bass population dynamics in Haskell city lake.

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 Haskell Lake. Acceptable Wr values are ≥90.

Year	Total CPUE	Total Wr	Stock	Wr	Quality	Wr	Preferred	Wr	Memorable	Wr
			7.9"		11.8"		15"		20.1"	
2007	93.3	78.5	62.7	80.9	24	72	1.3	78.2		
2016	144									
2019	157.2	84.6	67.2	84.7	36	81.1	12	88.6	3.6	94.3
2022	214.5	81.3	90	80.1	58.5	82.4	39	83.4	6	83.9

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.

Year	PSD-Q	PSD-P	PSD-M
2007	29	2	0
2016	61	12	1
2019	43	13	3
2022	53	23	3

Balanced PSD Values	
PSD-Q	40-70
PSD-P	10-40
PSD-M	0-10

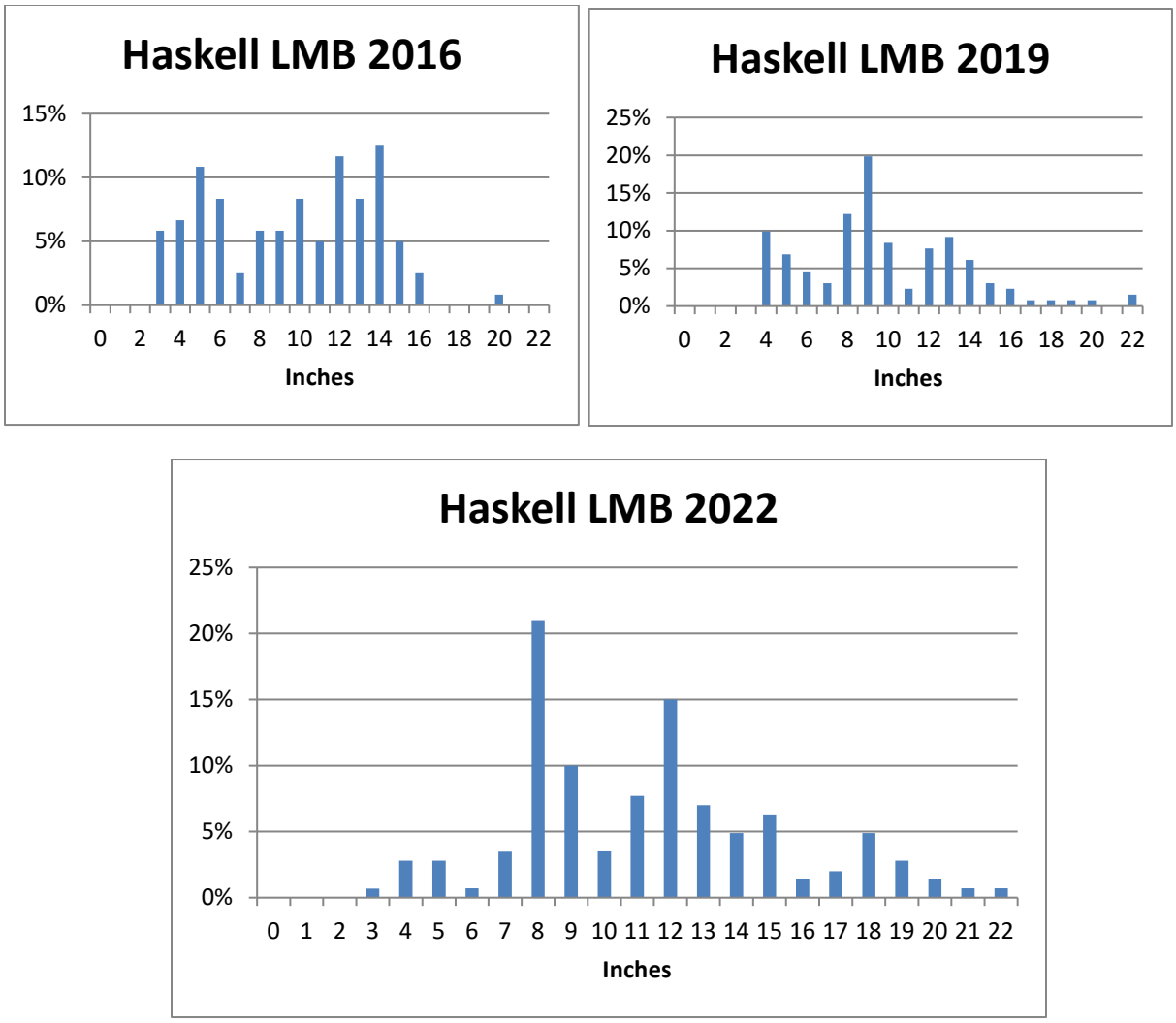

Figure 1. Largemouth Bass Length Frequencies for Haskell city lake 2016-2022

Table 3. Mean Total Length at age (inches) for Largemouth Bass in Haskell city lake

Year	Age 1	Age 2	Age 3	Age 4	Age 5	Age 6	Age 7	Age 8	Age 9	Age 10
2016	6	9.9	12	14.7	14.1			16.6		
2019	5.9	9.3	10.8	13.1	15.2	18.1		20.5	19.3	
2022	7.2	8.7	11	12.9	14.7	16.1	18.8	19.2	18	22.2

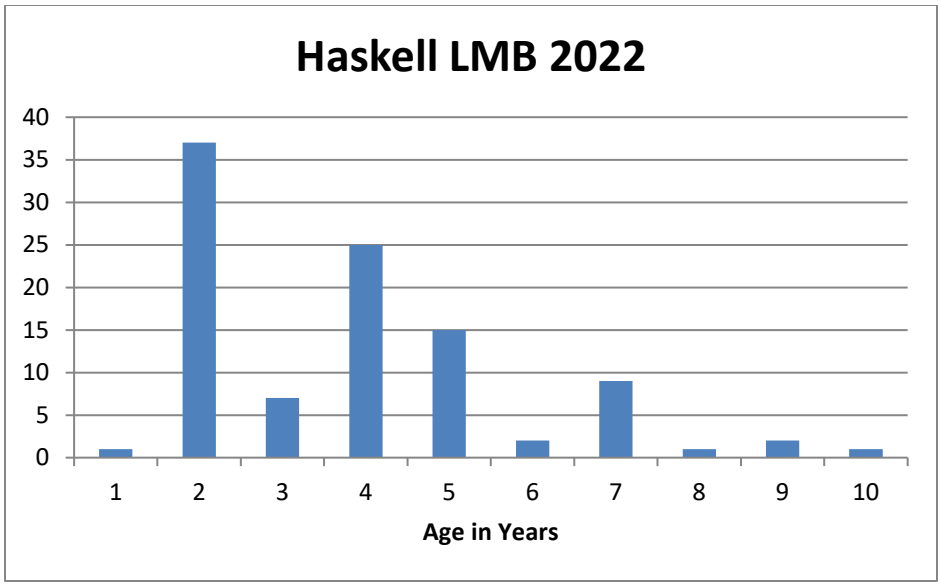

Figure 2. Age frequency for Largemouth bass in Haskell city lake

Appendix 1. Haskell city lake stockings

Year	Species	Number	Size
2005	Channel Catfish	1200	7"
2006	Channel Catfish	1000	7"
2016	Channel Catfish	1000	7"
2021	Channel Catfish	5000	3"

Appendix 2. Habitat locations Haskell city lake