

SURVEY REPORT
OKLAHOMA DEPARTMENT OF WILDLIFE
CONSERVATION



FISH MANAGEMENT SURVEY AND
RECOMMENDATIONS

FOR

VIAN LAKE

2024

SURVEY REPORT

State: Oklahoma

Project Title: Vian Lake Fish Management Survey Report

Period covered: 2024

Report written by: Chris Whisenhunt

Date: December 2024

ABSTRACT

Vian lake was surveyed via spring boat electrofishing to determine fish population trends of black bass to inform potential stocking or future survey efforts. Continued high catch rates for Largemouth Bass ($C/f = 223.5$) and low relative weights for fish under 13 inches ($W_r = 86$) indicate an overabundance of smaller fish and limited forage availability. With the new statewide black bass regulation that allows for the harvest of smaller fish and educating anglers to harvest the smaller bass (<16 inches), and with regular stockings of Threadfin Shad, it is hoped that fish body conditions would begin to improve over time.

INTRODUCTION

Vian City Lake, an impoundment of an unnamed tributary to Vian Creek in Sequoyah County, was once the alternate water supply to Vian Creek for the city of Vian until 1962 and has since been primarily used for recreational purposes. The lake is 17 acres with an average depth of nine feet. Waterwillow occupies much of the lake's perimeter due to shallow depths as well as a few fallen trees. Secchi disc readings are 30 inches in mid-summer and turbidity is mainly from plankton. The conductivity is low and is typical for a lake of this kind.

RESULTS

Largemouth Bass

1. Largemouth Bass abundance from spring boat electrofishing in 2024 ($C/f = 223.5$) was very high for the small impoundment but consistent with previous samples (Tables 1 and 2, Figure 1).
2. Relative weights were poor for fish less than 13 inches ($W_r = 86$) but good for fish ≥ 14 inches ($W_r = 93$) and excellent for fish ≥ 16 inches ($W_r = 104$; Table 1), indicating an overabundance of smaller fish and a lack of forage to support the population.

RECOMMENDATIONS

Fish Attractor Structures

1. No new habitat structures are currently recommended for Vian Lake.

Fish Stockings

1. Threadfin Shad should be stocked in spring of 2025 to supplement the forage base for sportfish. Threadfin populations should be monitored and restocked as needed to try to improve Largemouth Bass relative weights.

Fish Surveys

1. Spring boat electrofishing surveys should be conducted in 2026 as conditions allow to continue monitoring changes in the overall black bass populations and to monitor impact of new statewide bass regulations that were passed in 2022.

Fishing Regulations

1. Vian Lake follows statewide creel, size and method of take regulations.
2. Anglers should be encouraged to harvest smaller bass (<16 inches) to help reduce the stunted population and help improve body conditions of fish.
3. No new regulation changes are recommended currently.

Table 1. Total number (No.), catch rates (C/f), and relative weights (W_r) by size groups of **Largemouth Bass** collected by spring electrofishing from Vian Lake. Numbers in parentheses represent acceptable C/f values for a quality fishery. Acceptable W_r values are ≥90.

Year	Total (≥40)		<8 inches (15-45)		8-13 inches (15-30)		≥12 inches (≥10)		≥14 inches (≥10)		≥16 inches (≥8)	
	No.	C/f	C/f	W _r	C/f	W _r	C/f	W _r	C/f	W _r	C/f	W _r
1996	98	78.4	20.8	85	41.6	85	16.0	90	12.0	89	-	-
1999	163	163.0	50.0	93	98.0	80	15.0	87	9.0	91	-	-
2015	133	199.0	40.5	74	153.0	75	12.0	80	3.0	76	1.5	79
2024	149	223.5	51.0	101	160.5	86	36.0	87	7.5	93	3.0	104

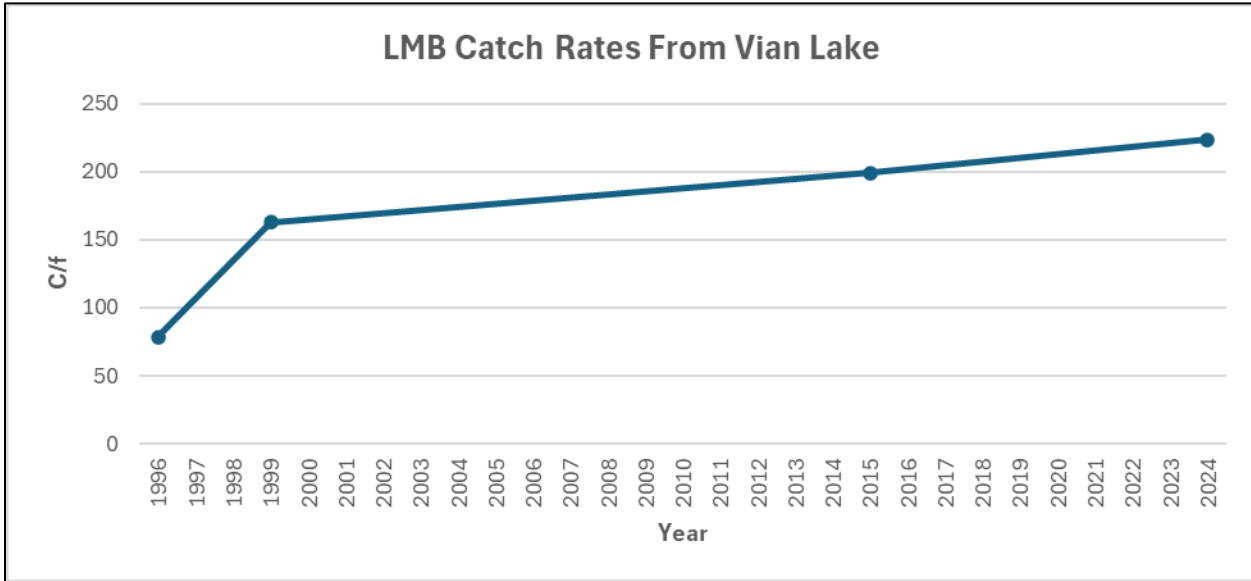


Figure 1. Catch rates (C/f) for Largemouth Bass caught by boat electrofishing from Vian Lake, 1996 - 2024.

Table 2. Largemouth Bass catch rates for Vian Lake, 2024 (OFAT analysis).

Species	Mean	Count	RSE	SE	L 95% CI	U 95% CI	N RSE = 12.5 (25% range)	N RSE = 20 (40% range)
Largemouth Bass	223.5	4	13.62	30.43	163.85	283.15	5	2

Table 3. Catch rates by size category for Largemouth Bass sampled from Vian Lake, 2024 (OFAT analysis).

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	45	15.87	7.14	31.00	59.00	6	3
LMB	stock	135	15.66	21.14	93.56	176.44	6	2
LMB	quality	37.5	21.04	7.89	22.04	52.96	11	4
LMB	preferred	3	100.00	3.00	-2.88	8.88	256	100
LMB	memorable	3	57.74	1.73	-0.39	6.39	85	33
LMB	trophy	0	NA	NA	NA	NA	NA	NA

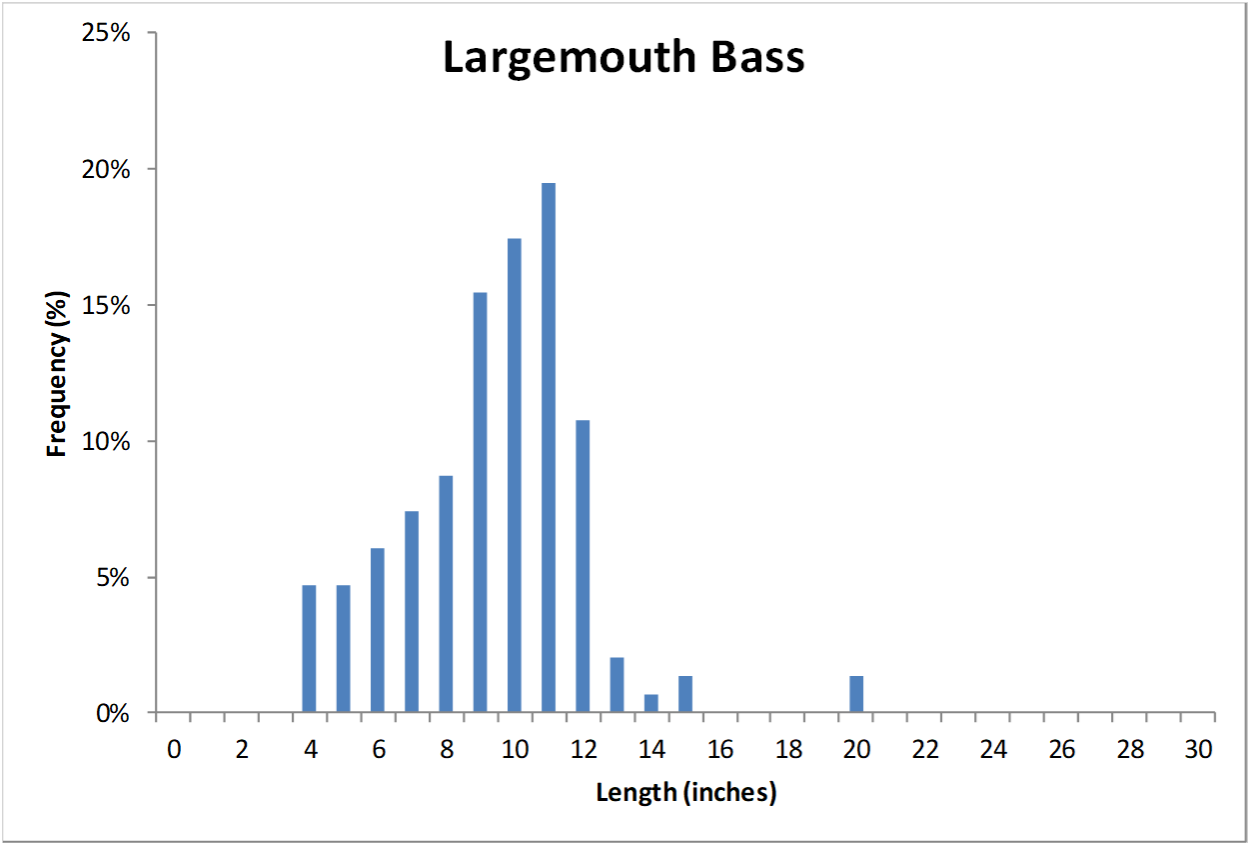


Figure 2. Length frequencies of Largemouth Bass sampled from Vian Lake, 2024.

Table 4. Vian stocking history

YEAR	SPECIES	Number	Size (inches)
1947	LMB	100	
1947	Crappie	50	
1947	Bluegill	1000	
1951	LMB	500	
1951	Channel Catfish	500	
1951	Redear Sunfish	1200	
1953	LMB	1000	
1953	Channel Catfish	2000	
1953	Crappie	500	
1953	Redear Sunfish	2000	
1964	Channel Catfish	5000	
1964	LMB	10000	
1975	Channel Catfish	500	
1976	Mis. Silversides	127	
1976	Channel Catfish	500	
1977	Mis Silverside	45	Adult
1977	Mis Silverside	18	Adult
1977	Mis Silverside	43	Adult
1977	Channel Catfish	1000	Growouts
1978	Channel Catfish	2500	3"
1981	Channel Catfish	2800	8"
1982	Channel Catfish	5000	3"
1982	Channel Catfish	1000	8"
1983	Channel Catfish	2500	8"
1985	Channel Catfish	2520	3.5"
1986	Channel Catfish	2562	10"
1987	Channel Catfish	2500	8"
1988	Channel Catfish	2000	3"
1989	Channel Catfish	2000	3"
1997	Channel Catfish	1020	7"
1998	Channel Catfish	1022	7"
1999	Channel Catfish	1170	7"
2000	Channel Catfish	520	7"
2001	Channel Catfish	512	7"
2002	Channel Catfish	300	14"
2002	Channel Catfish	308	7"
2004	Channel Catfish	680	5.7"
2005	Channel Catfish	884	7"

2007	Channel Catfish	850	9"
2008	Channel Catfish	742	9"
2009	Channel Catfish	875	10.5"
2010	Channel Catfish	720	10.5"
2011	Channel Catfish	796	11.5"
2013	Channel Catfish	925	10"
2014	Channel Catfish	930	11"