SURVEY REPORT
OKLAHOMA DEPARTMENT OF WILDLIFE CONSERVATION

FISH MANAGEMENT SURVEY AND RECOMMENDATIONS
FOR
LAKE LLOYD VINCENT
2024

SURVEY REPORT

State: Oklahoma

Project Title: Lake Vincent Fish Management Survey Report

Period Covered: 2013-2024

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Date Prepared: November 2024

LAKE LLOYD VINCENT

ABSTRACT

Lake Lloyd Vincent was surveyed by means of whole shoreline boat electrofishing for largemouth bass in 2013, 2015, 2016, 2018, 2020, 2022, and 2024. Lake Vincent was also surveyed by means of tandem hoop net surveys for channel catfish in 2015, 2018, 2020, and 2022, and 2024. The low catch per unit effort (CPUE) values in the channel catfish surveys indicated that the population decreased between 2015 and 2018. The high CPUE values observed in boat electrofishing surveys for largemouth bass indicate that the population of largemouth was very high at the time of the surveys.

INTRO

Lake Lloyd Vincent impounds the Coon Creek, 3.1 km Southwest of Arnett in Ellis County, Oklahoma. Vincent covers 65 surface hectares and was constructed in 1961 by the Oklahoma Department of Wildlife Conservation. Vincent Lake has a mean depth of 4.9 m and a maximum of 14.6 m, a shoreline development ratio of 2.6, a water exchange rate of less than one, and a secchi disc visibility of around 96 cm in the main pool in August; turbidity is primarily from plankton. Fish habitat consists primarily of aquatic vegetation with small amounts of flooded timber and rocky shoreline. The largemouth bass fishery is the most utilized fishery. Pressure has been increasing but would still be considered moderate. Blue and channel catfish angling also remains consistently good with large individuals being harvested.

The lake has been sampled annually by spring electrofishing for largemouth bass in 2013, 2015, 2016, 2018, 2020, 2022, and 2024. Lake Vincent was also sampled for channel catfish in 2015, 2018, 2020, 2022, and 2024 by means of tandem hoop nets.

Lake Lloyd Vincent was stocked from 2013 to 2021 with Florida largemouth bass and channel catfish from 2013 to 2023. (Appendix 2).

Habitat and fish attractors were deployed at Lake Vincent in the form of brush piles and combinations of brush piles and synthetic habitat structures (Appendix 1).

RESULTS

CHANNEL CATFISH

Channel catfish were surveyed in the summer of 2015, 2018, 2020, 2022, and 2024 at Lake Lloyd Vincent. The surveys were conducted following Standard Sampling Procedures for Fisheries Management. Tandem hoop net surveys were conducted by setting six stations of three net nights each totaling 18 net nights. Each station was three hoop nets set in tandem with the bridle end tied to the cod end. Each of these three nets was baited with a whole bar of Zoat soap (400g). The bait was changed from Zoat soap to cheese bait for the 2024 survey. This bait was first placed in a 0.9 kg plastic sample jar with 25-30 6 mm holes in it. The largest hoop on these nets was 0.8 meters and the net itself was approximately 3.4 meters long.

Total catch per unit effort (CPUE) values ranged from 4.27 in 2022 to 30.56 in 2015. This large change in CPUE values from 2015 to 2018 indicates that there was a decline in channel catfish catch rate in Lake Lloyd Vincent. The statewide average CPUE value for channel catfish in Oklahoma is CPUE=4.27. This statewide average was met and exceeded in every year sampled at Lake Lloyd Vincent. The catch rate every year was higher than the average catch rate of Oklahoma (Table 1).

The proportional size distribution (PSD) value ranged between 7 (2015) and 27 (2022). These low PSD values indicate that the channel catfish populations were slightly undersized or below the favorable length for anglers to catch. The statewide average PSD value is PSD=24. Sample where near this value in 2018 through 2022(Table 2).

Relative weight (Wr) values for channel catfish surveys were all over the favorable value of Wr=80 demonstrating that body conditioning was good for individuals collected at Vincent. The statewide average Wr value is Wr=88. Every survey met the statewide average except for the stock and quality size classes in 2022. These two size classes that did not meet the average were very close to the Wr=88 mark (Table 1).

Length frequency figures demonstrated a shift in frequencies towards smaller individuals. The figures report on fewer larger individuals and more frequent smaller individuals which is reflected in Table 1 (Figure 1).

The mean length at age values for Lake Lloyd Vincent channel catfish demonstrate small individuals that are much older than the statewide average. This population is stunted and can be observed in Table 3.

It is recommended that continued sampling every two years on Lake Lloyd Vincent should be conducted to evaluate the status of the channel catfish fishery. It is also recommended that Lake Lloyd Vincent stocking efforts are suspended to try and grow channel catfish to a larger size.

Table 1: Total number (No), catch per unit effort (CPUE), and relative weights (Wr) by size group of Channel catfish collected in hoop net surveys from Lake Lloyd Vincent.

		Total CPUE	Substock <280mm		Stock 280mm		Quality 410mm		Preferred 610mm	
Year	**No**	**CPUE**	**CPUE**	**Wr**	**CPUE**	**Wr**	**CPUE**	**Wr**	**CPUE**	**Wr**
2024	190	12.67	10.80	-	1.87	-	-	-	-	-
2022	128	4.27	2.3	92.95	1.43	87.15	0.53	85.23	-	-
2020	78	4.33	2.33	105.99	1.67	100.65	0.28	91.44	0.06	103.65
2018	149	4.52	0.79	-	2.91	-	0.79	-	0.03	-
2015	550	30.56	20.83	-	9.06	-	0.67	-	-	-

Table 2: Proportional Size Distribution (PSD) and Proportional Size Distribution of Preferred (PSD-P) for Channel catfish collected from Lake Lloyd Vincent hoop net surveys.

Year	PSD	PSD-P
2024	**-**	**-**
2022	27	-
2020	17	3
2018	22	1
2015	7	-

Table 3: Mean total length at age (mm) and L infinity (estimated mean maximum length) for Channel Catfish collected from Lake Lloyd Vincent hoop net surveys.

Year	Age 2	Age 3	Age 4	Age 5	Age 6	Age 7	Age 8	Age 9	Age 10	Age 12	Age 13	L inf
2024	219.38	233.8	232.65	237.11	261.82	269.33	272.12	209.33	316.33	255	311	1622.852

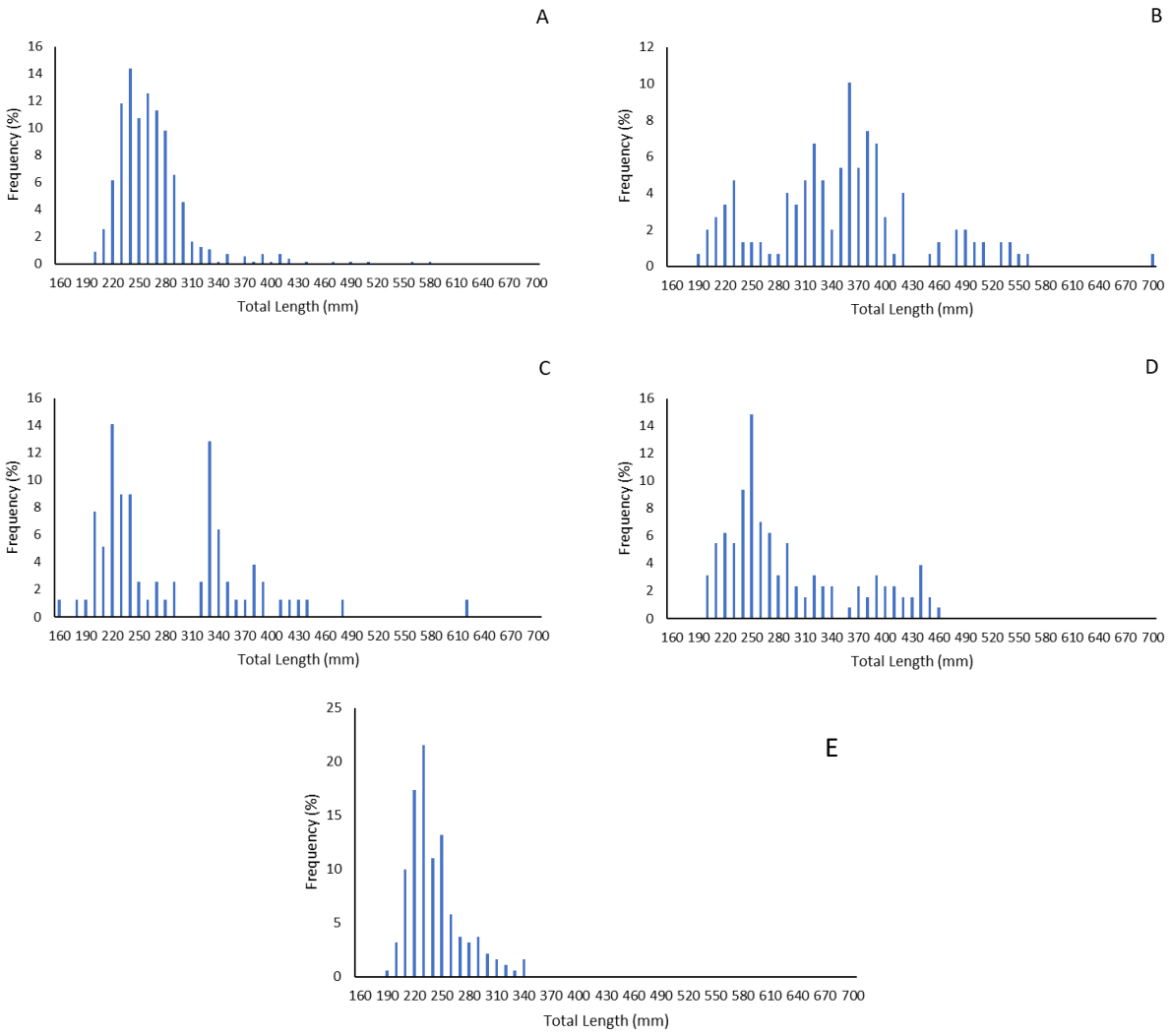


Figure 1: Channel Catfish Length Frequencies for Lake Lloyd Vincent 2015(A), 2018(B), 2020(C), 2022(D), and 2024(E).

LARGEMOUTH BASS

Largemouth bass surveys were conducted in 2013, 2015, 2016, 2018, 2020, and 2022 by means of whole shoreline, boat electrofishing surveys. The electrofishing surveys consisted of random 10-minute shoreline samples at Lake Lloyd Vincent. Standard Sampling Procedures for Fisheries Management were followed to while conducting these largemouth bass electrofishing surveys.

Total catch per unit effort (CPUE) values ranged from CPUE=30 in 2015 and CPUE=100.5 in 2020 (Table 4). These values indicate that there is a moderate population of largemouth bass in Lake Vincent. The statewide average CPUE value for largemouth bass electrofishing surveys in Oklahoma is CPUE=62.5. This statewide average was only met in the 2020 survey. The CPUE

value for the 2020 survey may be much higher due to the survey being conducted at night rather than during daylight (Table 4).

The proportional size distribution (PSD) values ranged from PSD=62 in 2016 to PSD=91 in 2020. These values demonstrate that there was a high percentage of individuals that would be considered favorable length for anglers. The statewide average PSD value for Oklahoma is PSD=72. Every year surveyed exceeded the statewide average PSD value except 2016 (Table 5).

Relative weight (Wr) values for largemouth bass were above the favorable body condition value of Wr=80 except for 2013. The statewide average Wr value for largemouth bass is Wr=92. Most of the size classes for largemouth bass met or exceeded the statewide average except for a few. This means that most of the size classes for the years sampled were in better condition than the statewide average (Table 4).

The mean length at age values for largemouth bass from 2022 were all below the statewide average. This means that the individuals collected in 2022 at Lake Lloyd Vincent were smaller at each age class and slower growing than the statewide average (Table 6).

Length frequency plots demonstrate that the length frequencies remained consistent from 2018 to 2024 and indicate a balanced population (Figure 2).

It is recommended that annual sampling continues at Lake Lloyd Vincent to evaluate the status of the largemouth bass fishery.

Table 4: Total number (No), catch per unit effort (CPUE), and relative weights (Wr) by size group of Largemouth Bass collected in electro-fishing surveys from Lake Lloyd Vincent.

	Total CPUE	**Substock <200mm**		**Stock 200mm**		**Quality 300mm**		**Preferred 380mm**		**Memorable 510mm**	
Year	**No**	**CPUE**	**CPUE**	**Wr**	**CPUE**	**Wr**	**CPUE**	**Wr**	**CPUE**	**Wr**	**CPUE**	**Wr**
2024	126	68.73	2.73	87.39	13.64	95.04	18.55	105.38	31.64	101.21	2.18	104.99
2022	92	39.43	0.43	81.42	4.29	88.53	10.71	98.36	23.57	95.57	0.43	103.72
2020	201	100.5	-	-	9.5	95.38	54.5	98.36	36	95.67	0.5	102.52
2018	83	31.12	1.5	-	4.5	-	12	-	13.12	-	-	-
2016	68	31.38	2.31	83.66	11.08	95.72	9.69	91.63	8.31	92.63	-	-
2015	15	30	4	-	4	92.93	6	100.53	16	95.15	-	-
2013	84	42	2	18.63	7.5	102.5	18.5	100.65	14	102.9	-	-

Table 5: Proportional Size Distribution (PSD) and Proportional Size Distribution of Preferred (PSD-P) for Largemouth Bass collected from Lake Lloyd Vincent electrofishing surveys.

Year	PSD	PSD-P	PSD-M
2024	79	51	3
2022	89	62	1
2020	91	36	-
2018	85	44	-
2016	62	29	-
2015	85	62	-
2013	81	35	-

Table 6: Mean total length at age (mm) and L infinity (estimated mean maximum length) for Largemouth Bass collected from Lake Lloyd Vincent electrofishing surveys.

Year	Age 3	Age 4	Age 5	Age 6	Age 7	Age 8	Age 9	Age 11	Age 12	L inf
2022	301.78	386.19	402.28	421.75	471	456.4	506	491	468	471.555

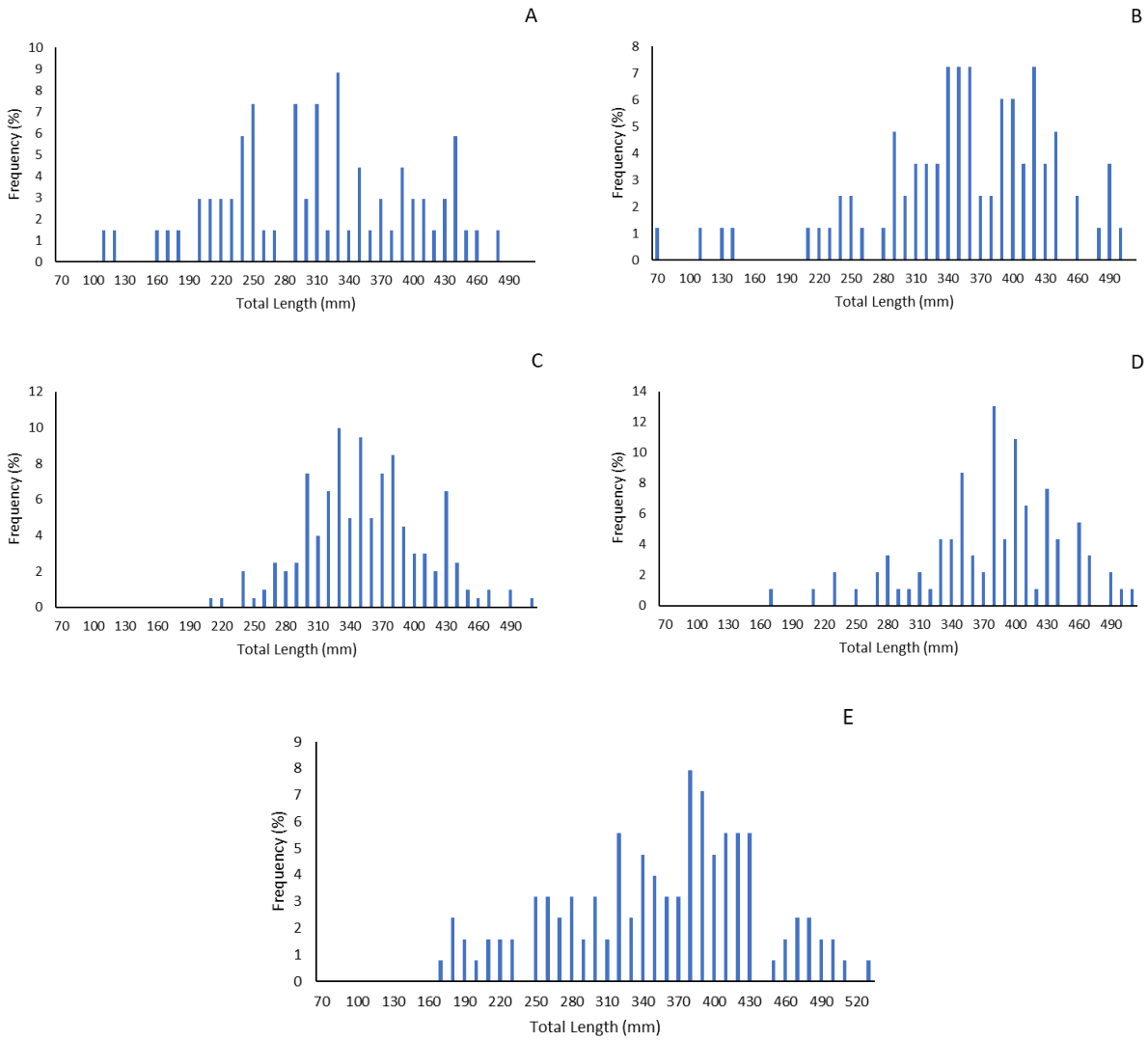
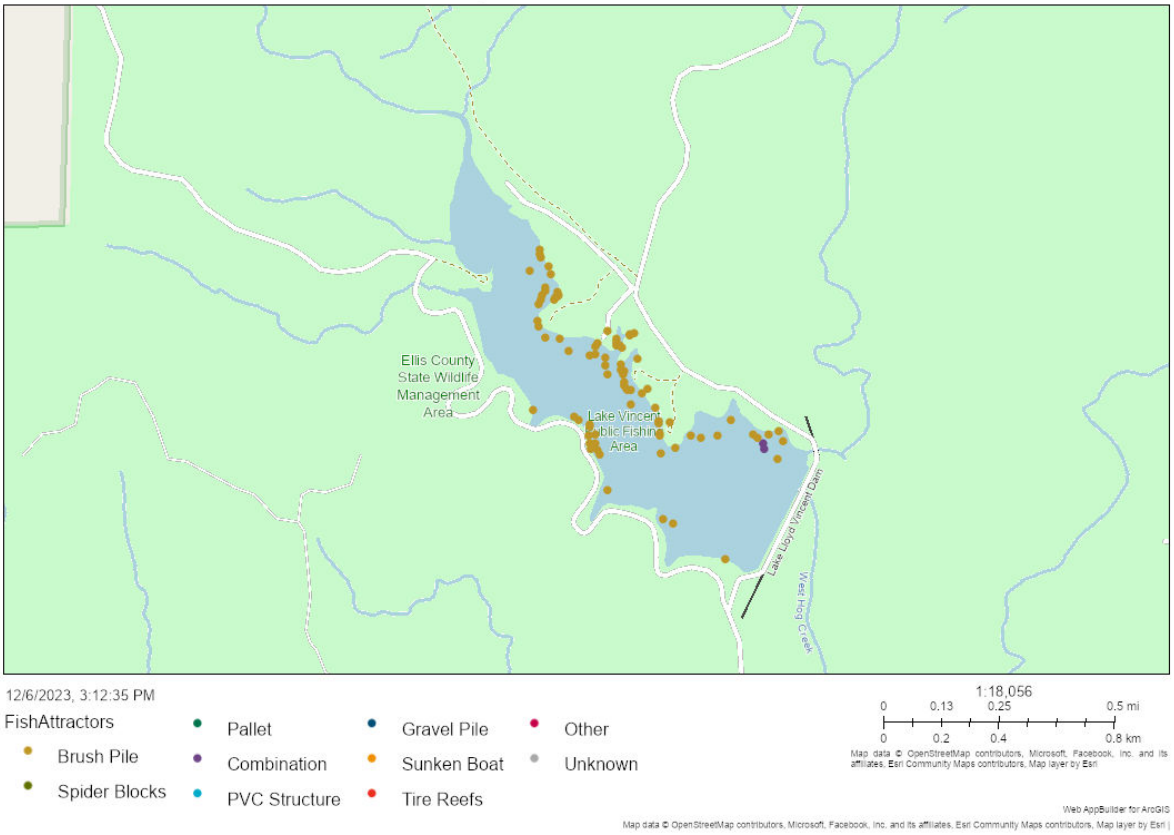


Figure 2: Largemouth Bass Length Frequencies for Lake Lloyd Vincent 2016(A), 2018(B), 2020(C),2022(D), and 2024(E).

Lake Lloyd Vincent Fish Attractors



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FishAttractors

- Brush Pile
- Spider Blocks
- Pallet
- Combination
- PVC Structure
- Gravel Pile
- Sunken Boat
- Tire Reefs
- Other
- Unknown

1:18,056

0 0.13 0.25 0.5 mi

0 0.2 0.4 0.8 km

APPENDIX 1

Year	Species	Number	Size (mm)
2023	Channel Catfish	6,400	177.8
2021	Channel Catfish	6,370	162.56
2020	Channel Catfish	6,400	165.1
2019	Florida Largemouth	150	152.4-203.2
	Channel Catfish	15,046	154.94
2018	Florida Largemouth	225	152.4
	Channel Catfish	7,890	76.2
	Channel Catfish	3,374	146.05
2016	Florida Largemouth	400	254
	Channel Catfish	16,000	101.6
2014	Florida Largemouth	2,312	50.8
	Florida Largemouth	603	152.4
2013	Channel Catfish	6,466	228.6

APPENDIX 2