SURVEY REPORT
OKLAHOMA DEPARTMENT OF WILDLIFE CONSERVATION

FISH MANAGEMENT SURVEY AND RECOMMENDATIONS FOR

Choctaw Creek Park Pond

2025

SURVEY REPORT

State: Oklahoma

Project Title: Choctaw Creek Park Pond Fish Management Survey Report

Period Covered: 2025

Prepared by: Oklahoma Fishery Research Laboratory

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Choctaw Creek Park Pond

ABSTRACT

Choctaw Creek Park Pond was surveyed by spring electrofishing, summer hoop netting and fall trap netting in 2025 to monitor the fish population. The fishery includes Bluegill Sunfish, Hybrid Sunfish, White Crappie, and Largemouth Bass. Channel Catfish have been stocked here but were not encountered during sampling. No regulation changes are recommended at this time.

INTRODUCTION

Choctaw Creek Park Pond is located in Choctaw, Oklahoma County, Oklahoma. The pond has a surface area of 1.4 acres. The pond provides angling access, and the park features other amenities such as restrooms, walking trails, and a playground. There is an abundance of aquatic vegetation, mainly Chara spp.

Close To Home Fishing regulations apply at this site, which includes an aggregate limit of three panfish, rainbow trout, and channel catfish per person per day. Fishing is limited to no more than three rods and reels per person with no more than three hooks per line; treble hooks are considered one hook. No other fishing methods are permitted.

Choctaw Creek Park Pond had not been sampled by ODWC prior to 2025. The pond has previously been stocked with Channel Catfish and Hybrid Sunfish (Appendix 1).

Aquatic Nuisance Species

There are no known ANS species in Choctaw Creek Park Pond.

RESULTS

Electrofishing- All Species (41)

Overview

The fish assemblage at Choctaw Creek Park Pond was sampled via electrofishing on April 9, 2025. The entirety of the shoreline was shocked for 20 minutes of effort (two, 10-minute runs). The average water temperature was 15°C. A total of 15 fish across two species were collected with the most abundant species being Bluegill Sunfish (n=15).

Bluegill Sunfish

The mean total length (TL) of Bluegill Sunfish was 110 mm, with a minimum TL of 57 mm and a maximum TL of 172 mm (Table 1). Mean catch per unit effort (CPUE) was 45. The overall mean relative weight (Wr) of Bluegill Sunfish was 78.49, which is below acceptable (i.e., ≥ 90). Neither of the two represented size classes, stock or quality, had acceptable relative weight values.

Hoop Net (33)

Overview

Choctaw Creek Park Pond was sampled using hoop nets August 7-8, 2025. Typically, hoop nets are used to assess catfish populations; however, no catfish were collected during this sampling event. Sites were randomly selected as specified by ODWC standard sampling protocol. Average water temperature was 28°C. Fish species collected were Bluegill Sunfish (n=252), White Crappie (n=66), and Hybrid Sunfish (n=2).

Bluegill Sunfish

The mean total length (TL) of Bluegill Sunfish was 130 mm with a minimum TL of 54 mm and a maximum of 175 mm (Table 3). The mean catch per unit effort (CPUE) of Bluegill Sunfish was 28 and had a standard error (SE) of 6, resulting in a 95% confidence interval (CI) ranging from 17 to 39 Bluegill Sunfish per hoop net set (Table 4). Bluegill Sunfish relative standard error (RSE) was 20.30, suggesting CPUE from the gear may be able to track a large change in relative abundance for the species; however, more sampling would be needed to confirm. Bluegill Sunfish RSE for sub stock (39.40) and stock size (26.03) individuals also indicated CPUE would only track a large change in relative abundance in these size categories. Whereas quality size Bluegill Sunfish exhibited and RSE value (11.91) that was acceptable (i.e., < 12.5), suggesting CPUE from this gear may be useful for this size category. Mean overall Wr of Bluegill Sunfish (83.50) was below acceptable (i.e., ≥ 90).

A subset of 66 Bluegill Sunfish were collected to be aged. The Bluegill Sunfish ranged from two years old to six years old, with the majority (~30%) being age-2 (Figure 1). The mean TL at age-2 was 121 mm, age-3 was 143 mm, and age-4 was 157 mm, and age-6 was 162 mm. The von Bertalanffy growth curve suggested on average White crappie mean asymptotic maximum size in the system is ~160 mm TL (Figure 2). These growth model appear to represent age-2 to age-6 average growth in the system well. A catch curve regression estimated an instantaneous total mortality (Z) of 0.48 Bluegill Sunfish age-2 and older, resulting in an annual mortality rate (A) of 38.20% (Figure 3).

Trap Net- Random (31.02)

Overview

Choctaw Creek Park Pond was sampled using modified fyke nets (hereafter trap nets) October 14-16, 2025 to assess the White Crappie population. Sites were randomly selected as specified by ODWC standard sampling protocol. A total of six net nights were run for a total of 144 hours of effort. The average water temperature was 23°C. In addition to collecting White Crappie (n=65), Bluegill Sunfish (n=65) and Largemouth Bass (n=1) were collected.

Bluegill Sunfish

Mean total length (TL) of Bluegill Sunfish was 125 mm with a minimum TL of 60 mm and a maximum TL of 171 mm (Table 6). Mean catch per unit effort (CPUE) of Bluegill Sunfish was 276 with a SE of 51, resulting in a 95% confidence interval (CI) ranging from 175 to 377 Bluegill Sunfish per trap net (Table 7). Crappie RSE was 18.62 suggesting some ability to detect a future change in relative abundance with this gear. However, examination of RSE for substock (63.25), stock (19.25), and quality (28.33) size categories suggest that only stock size Bluegill Sunfish would have some ability to detect a future change in relative abundance with this gear (Table 8). Overall relative weight (Wr) for Bluegill Sunfish (79.45) was below acceptable (i.e., ≥ 90), along with Wr values for stock and quality size categories.

White Crappie

Mean TL of White Crappie was 161 mm with a minimum TL of 97 mm and a maximum TL of 276 mm (Table 6). The mean CPUE of White Crappie was 260 with an SE of 86, resulting in a CI ranging from 92 to 428 (Table 7). White Crappie RSE was 32.97, suggesting CPUE is unlikely to detect any changes in relative abundance for the species. Likewise, RSE values for sub stock (44.72), stock (30.76), quality (74.16), and preferred (63.25) suggested little ability a future change in relative abundance for these size categories (Table 8). A subset of White Crappie were collected and aged. Estimated ages ranged from 0 – 6 years old. The majority of White Crappie were age-1; however, no age-3, -4, or -5 White Crappie were observed. The mean TL at age-0 was 97 mm, age-1 was 155 mm, age-2 was 168 mm, and age-6 was 236 mm. The von Bertalanffy growth curve suggested on average White crappie asymptotic maximum size in the system is approximately 200 mm TL (Figure 4). These two results suggests variable growth is present within the system annually, with certain year classes exhibiting faster or slower growth. Given a large portion of fish appear to occur around 150 to 170 mm TL (Figure 5) within the system, there is some

concern that smaller older fish (i.e., age-5, age-6) may induce stunting in younger fish (i.e., < age-3). A catch curve regression estimated an instantaneous total mortality (Z) of 0.66 for White Crappie age-1 and older, resulting in an annual mortality rate (A) of 48.5% (Figure 6). Given this high mortality there is hope age-5 and -6 crappie abundances will be reduced greatly through natural mortality.

RECOMMENDATIONS

1. Cedar tree brush piles, or similar, should be added to increase fish habitat availability.
2. Determine if stockings of Channel Catfish and Bluegill Sunfish are still needed.
3. Assess White Crappie in the future to determine if growth trajectory has changed as older smaller fish are reduced through natural mortality.

Table 1. Sample size, mean TL (mm), mean weight (g), and associated ranges for each species represented through electrofishing.

Species	Number	Mean TL (range)	Mean Weight (range)
Bluegill Sunfish	15	110 (57-172)	28 (2-65)
Largemouth Bass	4	190 (120-301)	100 (15-290)

Table 3. Sample size, mean TL (mm), mean weight (g), and associated ranges for each species represented via hoop netting.

Species	Number	Mean TL (range)	Mean Weight (range)
Bluegill Sunfish	252	130 (54-175)	42 (2-90)
Hybrid Sunfish	2	196 (172-220)	136 (72-200)
White Crappie	66	206 (125-325)	116 (20-426)

Table 4. Total catch per unit effort for each species sampled through hoop netting.

Species	Mean	Count	RSE	SE	L 95% CI	U 95% CI	N RSE = 12.5 (25% range)	N RSE = 20 (40% range)
Bluegill Sunfish	28	3	20.31	5.69	16.85	39.15	8	3
Hybrid Sunfish	0.22	3	50.00	0.11	0.00	0.44	48	19
White Crappie	7.33	3	41.66	3.06	1.35	13.32	33	13

Table 5. Catch per unit effort by size category for fish caught via hoop netting.

Species	Size Category	Mean	RSE	SE	L 95% CI	U 95% CI	N RSE = 12.5 (25% range)	N RSE = 20 (40% range)
Bluegill Sunfish	Substock	2.78	39.40	1.09	0.63	4.92	30	12
Bluegill Sunfish	Stock	16.22	26.03	4.22	7.95	24.50	13	5
Bluegill Sunfish	Quality	9.00	11.91	1.07	6.90	11.10	3	1
White Crappie	Substock	0.11	100.00	0.11	-0.11	0.33	192	75
White Crappie	Stock	2.00	63.10	1.26	-0.47	4.47	76	30
White Crappie	Quality	4.56	41.68	1.90	0.83	8.28	33	13
White Crappie	Preferred	0.56	20.00	0.11	0.34	0.77	8	3
White Crappie	Memorable	0.11	100.00	0.11	-0.11	0.33	192	75

Table 6. Sample size, mean TL (mm), mean weight (g), and associated ranges for each species represented through trap netting.

Species	Number	Mean TL (range)	Mean Weight (range)
Bluegill Sunfish	69	125 (60-171)	35 (2-98)
Largemouth Bass	1	81	8
White Crappie	65	161 (97-276)	50 (10-242)

Table 7. Total catch per unit effort for each species sampled via trap netting.

Species	Mean	Count	RSE	SE	L 95% CI	U 95% CI	N RSE = 12.5 (25% range)	N RSE = 20 (40% range)
Bluegill Sunfish	276	6	18.62	51.38	175.29	376.71	13	5
Largemouth Bass	4	6	100.00	4.00	-3.84	11.84	384	150
White Crappie	260	6	32.97	85.73	91.96	428.04	42	16

Table 8. Catch per unit effort by size category for fish collected through trap netting.

Species	Size Category	Mean	RSE	SE	L 95% CI	U 95% CI	N RSE = 12.5 (25% range)	N RSE = 20 (40% range)
Bluegill Sunfish	Substock	8.00	63.25	5.06	-1.92	17.92	154	60
Bluegill Sunfish	Stock	184	19.25	35.42	114.58	253.42	14	6
Bluegill Sunfish	Quality	84	28.33	23.80	37.35	130.65	31	12
Largemouth Bass	Substock	4	100.00	4.00	-3.84	11.84	384	150
White Crappie	Substock	12	44.72	5.37	1.48	22.52	77	30
White Crappie	Stock	224	30.76	68.91	88.93	359.07	36	14
White Crappie	Quality	16	74.16	11.87	-7.26	39.26	211	82
White Crappie	Preferred	8.00	63.25	5.06	-1.92	17.92	154	60

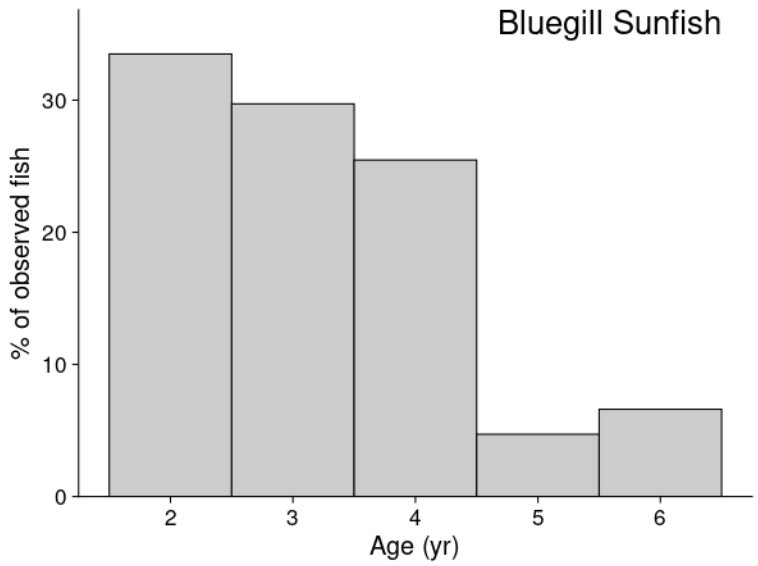

Figure 1. Length-Frequency histogram of Bluegill Sunfish collected at Choctaw Creek Park Pond via hoop netting.

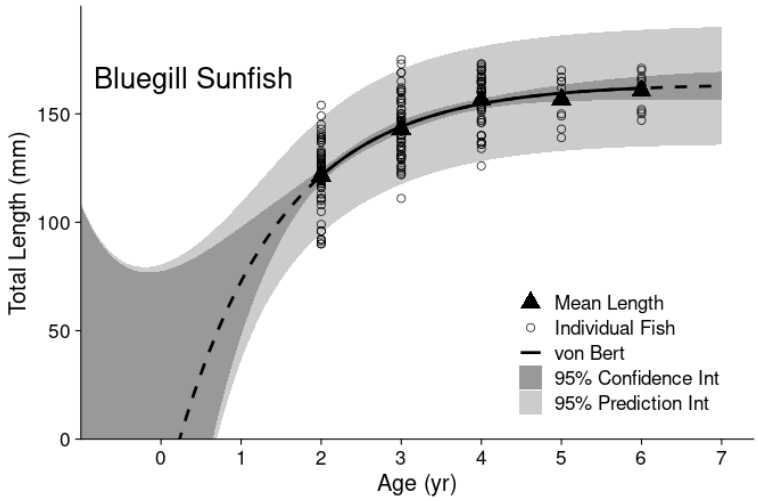

Figure 2. Von Bertalanffy Growth Curve of Bluegill Sunfish collected at Choctaw Creek Park Pond via hoop netting.

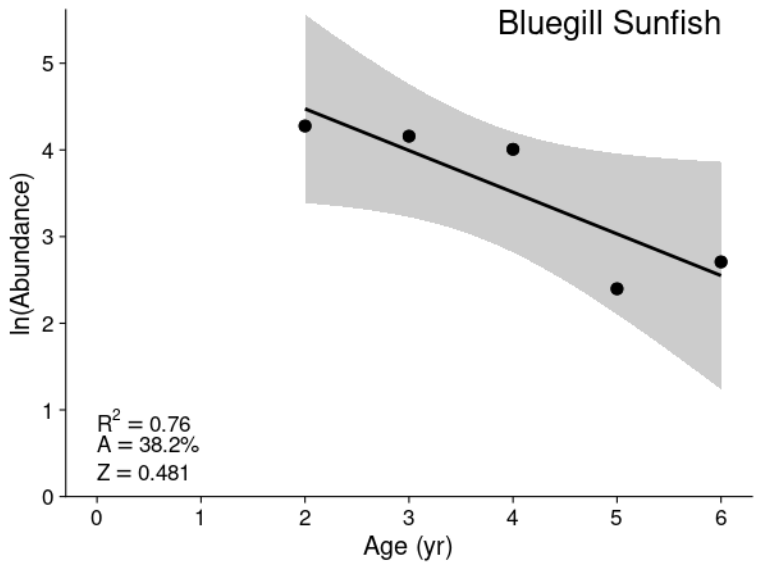

Figure 3. Catch Curve displaying mortality of Bluegill Sunfish sampled at Choctaw Creek Park Pond through hoop netting.

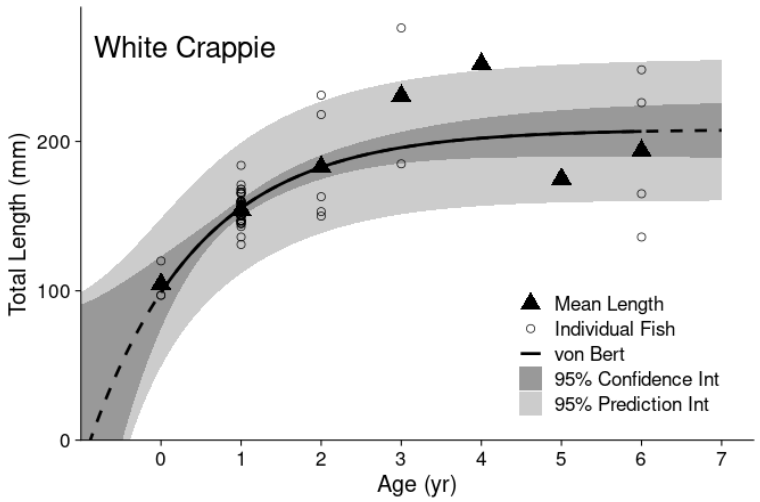

Figure 4. Von Betalanffy growth curve of the White Crappie sampled at Choctaw Creek Park Pond via trap netting.

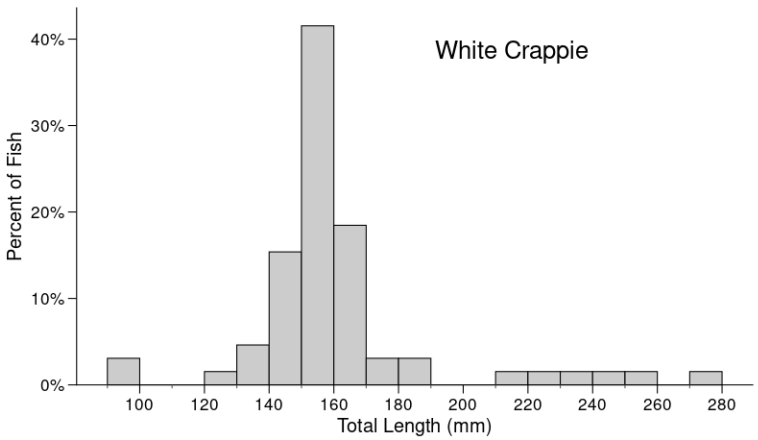

Figure 5. Length-frequency histograms for White Crappie collected at Choctaw Creek Park Pond using trap netting.

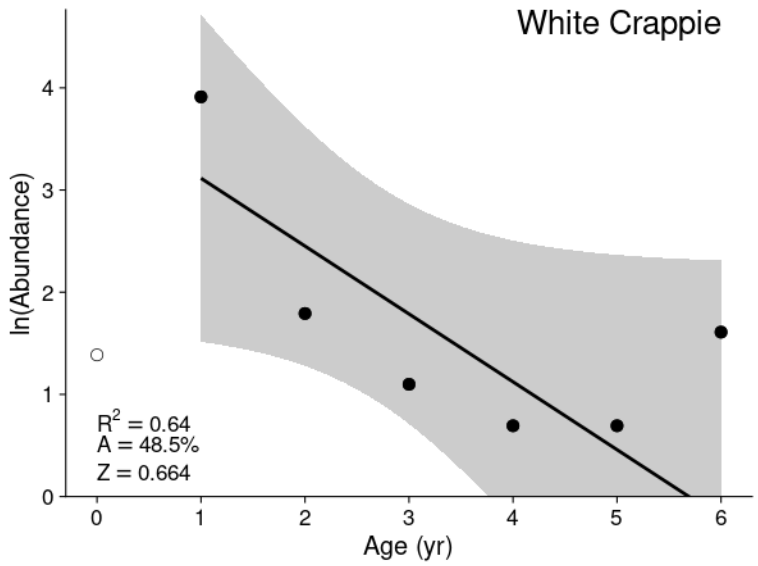

Figure 6. Catch curve displaying mortality of White Crappie collected at Choctaw Creek Park Pond through trap netting.

Appendix 1. Species, number, and size of fish stocked in Choctaw Creek Park Pond since 2014.

Date	Species	Number	Size (inches)
2014	Channel Catfish	200	9
2014	Channel Catfish	201	11
2015	Channel Catfish	200	9
2016	Channel Catfish	200	9
2019	Hybrid Sunfish	100	5-7
2022	Hybrid Sunfish	100	5-7
2024	Channel Catfish	25	12