

SURVEY REPORT
OKLAHOMA DEPARTMENT OF WILDLIFE CONSERVATION



FISH MANAGEMENT SURVEY AND RECOMMENDATIONS
FOR
BOOMER LAKE
2025

SURVEY REPORT

State: Oklahoma

Project Title: Boomer Lake Fish Management Survey Report

Period Covered: This report discusses survey results from 2025.

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Boomer Lake

ABSTRACT

Boomer Lake was surveyed using trapnets to determine the status of the White Crappie population during the 2025 fall sampling season. Data from the 2025 sample will be compared to past and future standardized sampling efforts to monitor trends in catch per unit effort (CPUE) and population dynamics.

Recommendations include crappie population estimate collected in the spring of 2026 and spring of 2027, crappie biomass removal during spring of 2026, winter 2027 and trap netting in fall of 2027 and 2028 for crappie to evaluate the effectiveness of the crappie removal.

Current Management Practices

Evaluation of Historically Stunted and High-Profile Crappie Populations

Crappie was the second most sought after species in Oklahoma according to the most recent angler survey. It is important to keep a finger on the pulse of high profile crappie fisheries in the region, especially with the recent developments in fish finding technology. Forward-facing sonar allows anglers to single out and harvest the largest fish in a school. As this technology becomes more affordable and more widespread in use, it will be important to have baseline information on high profile crappie fisheries. Slow growing crappie populations have been observed in some NCR reservoirs. These stunted crappie fisheries have used Saugeye stockings in the past to attempt to reverse the stunting. Boomer Lake was stocked with Saugeye until 2010 when managers stopped stockings due to low catch rates of YOY Saugeye in fall night electrofishing samples. Since then crappie has stayed stunted prompting a different strategy to address the slow growth.

2025

White Crappie:

Boomer Lake was sampled using trap nets to evaluate the crappie population in the lake. Trap nets were deployed around the lake at randomly selected sites to evaluate the abundance of White Crappie in the lake. Trap nets were deployed perpendicular to the bank and anchored at the point where the net started at the water's edge. Max depth of the nets did not exceed 15ft. Nets were set for one night then moved to the next random site. A total of 34 net nights of effort was completed collecting a total of 4972 White Crappie and 1 Black Crappie. Fish were measured (mm) and weighed (g) and a subsample of 203 fish had their otoliths collected for aging.

Catch Per Unit Effort (CPUE) was 155.47 ± 57.17 with a Coefficient of Variance (C.V.) of .19, an insignificant increase compared to 2024 (CPUE= 78.47 ± 31.03). A majority of fish collected were 150mm (5.9in) to 174mm (6.85in) and is reflective of the 2020 and 2024 samples (Figure 1). Proportional Size Distribution (PSD) was (2 ± 1) and were significantly different from those in 2020 and 2024, as well as PSD-P was significantly lower than 2024 (Table 1). Relative Weight (Wr) did not significantly increase in 2025 (Wr = $90.62 \pm .24$) compared to 2024 (Wr = $91.11 \pm .43$) but both were significantly higher than 2020 (Wr = $87.75 \pm .66$). The majority of crappie collected were 1 year old with maximum age collected being 7 (Figure 2). Mean length at age showed a significant increase in age 1 fish and significant decreases in age 0 and 2 compared to 2024. No other year classes had any significant change (Figure 3, Table 2).

White Crappie in Boomer Lake have historically been a stunted species this is no different today. CPUE was in above the 97% percentile compared to statewide White Crappie samples. This is telling as this sample used random sites and most crappie samples in the state are nonrandom, in theory they have an advantage in higher catch rates. 2024 had a very large spawn that makes the

majority of White Crappie in the lake. While the age 0 year class appears to not be as large but may have not fully recruited to the sampling gear. Growth of age 0 crappie is moderate just above the 50th percentile compared to White Crappie fisheries statewide but quickly decreases from there. At age 1 growth has slowed to below the 50th percentile, at age 2 they are below the 25th percentile and at age 3 White Crappie have fallen below the 5th percentile when compared statewide. This extreme stunting has created one of the worst White Crappie fisheries in the state. Historically Saugeye were stocked to help with the stunted crappie population but was discontinued after the 2010 stocking due to concerns of low numbers of young of year Saugeye collected during fall night electrofishing. In recent years Florida Fish and Wildlife Conservation Commission conducted a study to remove crappie biomass in a small highly stunted impoundment to “reset” the population. Boomer Lake is small enough; this approach may be used to salvage the crappie fishery. This data set along with the 2024 data will be used as pre levels of abundance and size to compare with collections after crappie removal. In preparation for the removal, having a population estimate will be beneficial in determining the percentage of the population removed during the removal process.

RECOMMENDATIONS

1. Conduct a population estimate of the White Crappie in Boomer Lake spring of 2026.
2. Remove crappie biomass to attempt to “reset” the population using trawl nets and trap nets to collect as many crappie as possible during spring of 2026 after the population estimate, and again in the winter of 2027.
3. Trap net Boomer Lake to determine the effectiveness of crappie removal in 2027 and 2028.

Figures and Tables

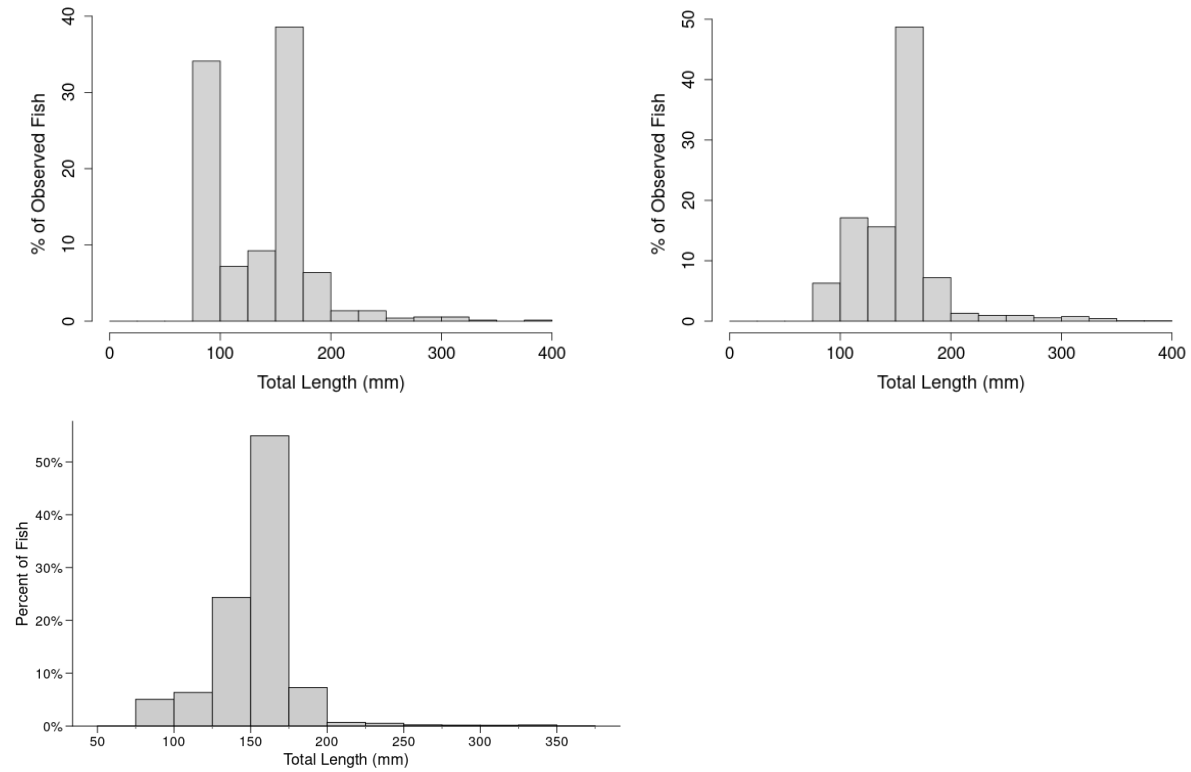


Figure 1. Length frequencies of White Crappie in Boomer Lake 2020 (top left), 2024 (top right), and 2025 (bottom left).

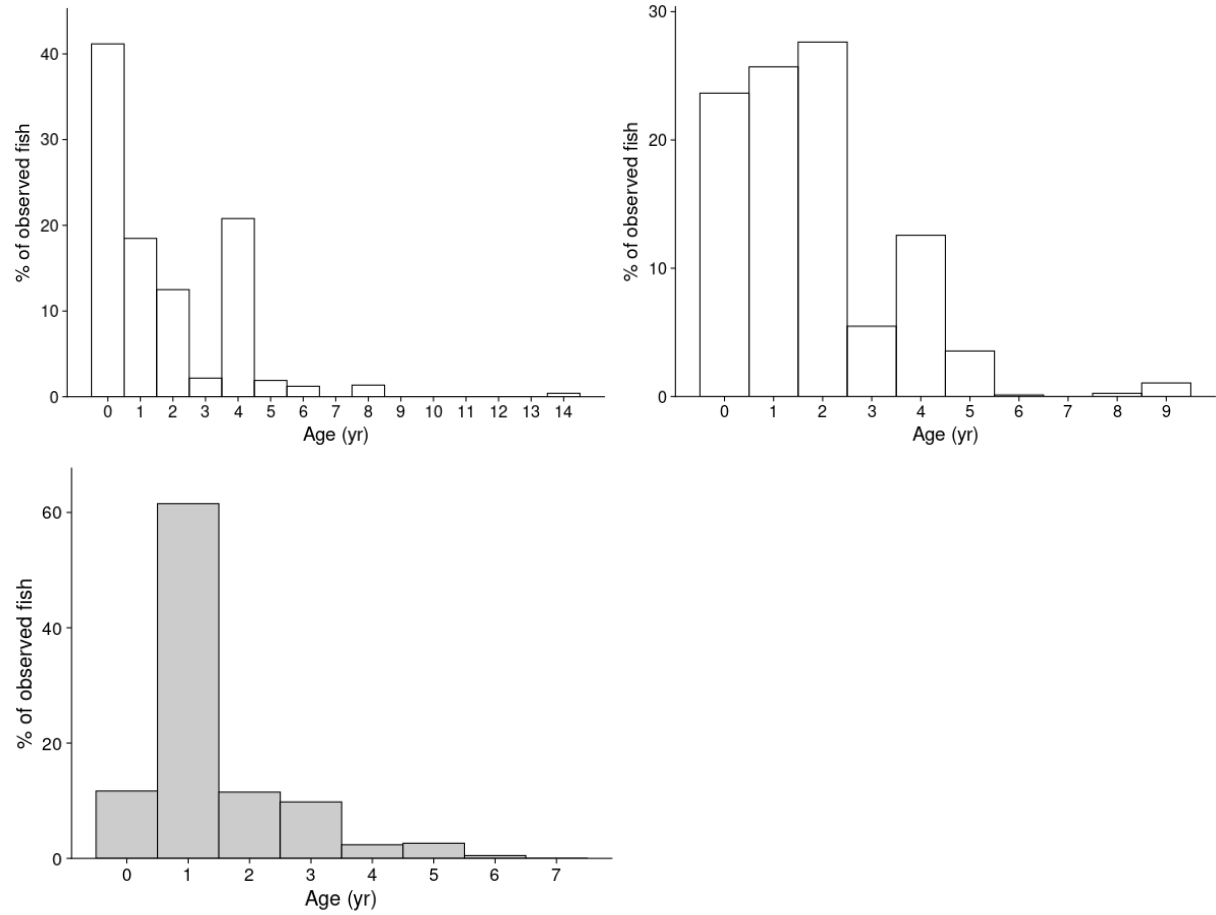


Figure 2. Age frequencies of White Crappie in Boomer Lake 2020 (top left), 2024 (top right) and 2025 (bottom left).

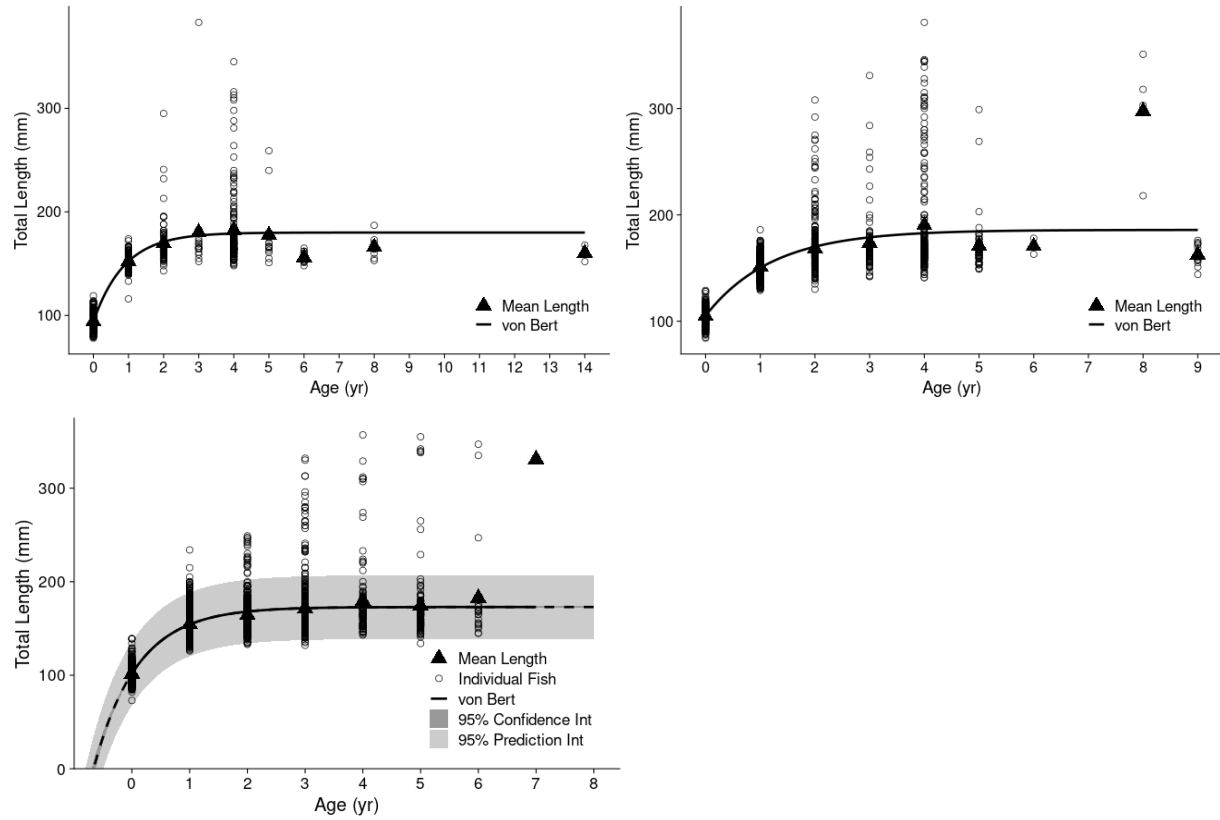


Figure 3. Mean Length at age and von Bertalanffy growth equation of White Crappie in Boomer Lake sampled in 2020 (top left), 2024 (top right) 2025 (bottom left).

Table 1. Proportional Size Distributions of White Crappie in Boomer Lake.

Year	PSD	PSD – P	PSD – M
2020	8 ± 4	3 ± 3	1 ± 2
2024	7 ± 2	4 ± 2	2 ± 1
2025	2 ± 1	1 ± <1	-

Table 2. Mean Length at Age of White Crappie collected from Boomer Lake. Mean length at age was only calculated for age groups that had at least 5 individuals.

Year	Sample Size (N)	Age-0	Age-1	Age-2	Age-3	Age-4	Age-5
2020	736	94.08± .83	152.33± 1.42	169.61± 4.11	180.31± 26.8	182.46± 5.85	177.71± 16.5
2024	2133	104.84± .74	151.47± .99	168.43± 1.92	173.59± 6.14	190.31± 7.07	170.7± 6.27
2025	4972	101.51± .7	154.63± .39	164.37± 1.46	171.27± 2.58	179.44± 7.58	174.25± 6.6