SURVEY REPORT
OKLAHOMA DEPARTMENT OF WILDLIFE CONSERVATION

FISH MANAGEMENT SURVEY AND RECOMMENDATIONS FOR BOOMER LAKE 2024

SURVEY REPORT

State: Oklahoma
Project Title: Boomer Lake Fish Management Survey Report
Period Covered: This report discusses survey results from 2024.
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Date Prepared: January 2025

Boomer Lake

ABSTRACT

Boomer Lake was surveyed using trapnets to determine the status of the White Crappie population during the 2024 fall sampling season. Data from the 2024 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 biomass removal during 2025 and trap netting in fall of 2026 and 2027 for crappie to evaluate the effectiveness of the crappie removal.

Current Management Practices

Evaluation of Historically Stunted and High-Profile Crappie Populations

According to the most recent angler survey, Crappie was the second most sought-after species in Oklahoma. 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. The Garmin Livescope 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 essential to have baseline information on high profile crappie fisheries. Slow-growing crappie populations have been observed in some NCR reservoirs. These lakes have been stocked with saugeye in the past to develop a biological control for overabundant and slow-growing crappie. Results have varied among these lakes, and future evaluation of the crappie and saugeye populations is warranted.

2024

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 29 net nights of effort was

completed collecting a total of 2133 White Crappie. Fish were measured (mm) and weighed (g) and a subsample of 255 fish had their otoliths collected for aging.

Catch Per Unit Effort (CPUE) was 78.47± 31.03 with a Coefficient of Variance (C.V.) of .2. A majority of fish collected were 150mm (5.9in) to 174mm (6.85) and is reflective of the 2020 sample (Figure 1). Proportional Size Distribution (PSD) was low (7± 2) and none of the sizes were significantly different from those in 2020 (Table 1). Relative Weight (Wr) did significantly increase in 2024 (Wr = 91.11± .43) compared to 2020 (Wr = 87.75± .66). The majority of crappie collected were 2 year old or less with a notable bump of 4 year old crappie (Figure 2). Mean length at age showed a significant increase in age 0 fish from 2020 sample but 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. 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 was stocked to help with the stunted crappie population but was discontinued after the 2010 stocking due to concerns about the number of young years 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 will be used as pre levels of abundance and size to compare with collections after crappie removal.

RECOMMENDATIONS

1. Remove crappie biomass to attempt to “reset” the population using trawl nets and trap nets to collect as many crappie as possible during winter of 2025/2026.
2. Trap net Boomer Lake to determine the effectiveness of crappie removal in 2026 and 2027.

Figures and Tables

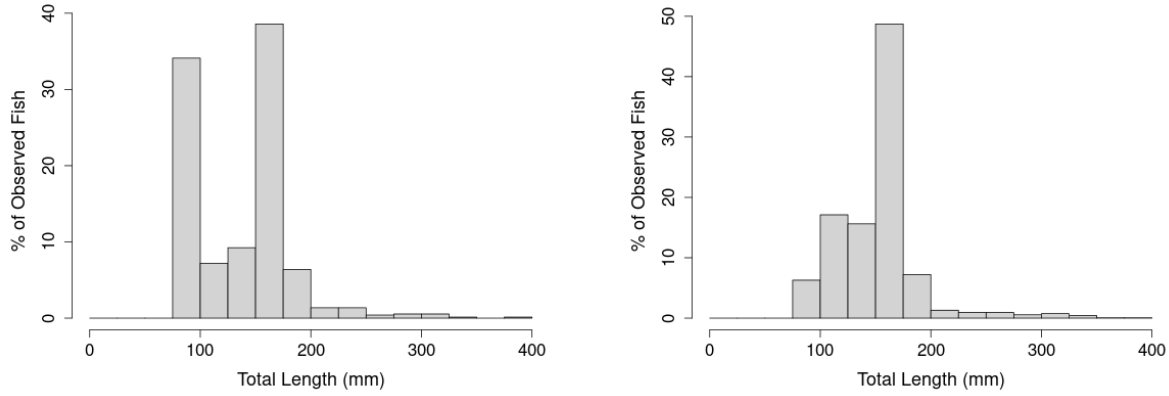

Figure 1. Length frequencies of White Crappie in Boomer Lake 2020 (left) and 2024 (right).

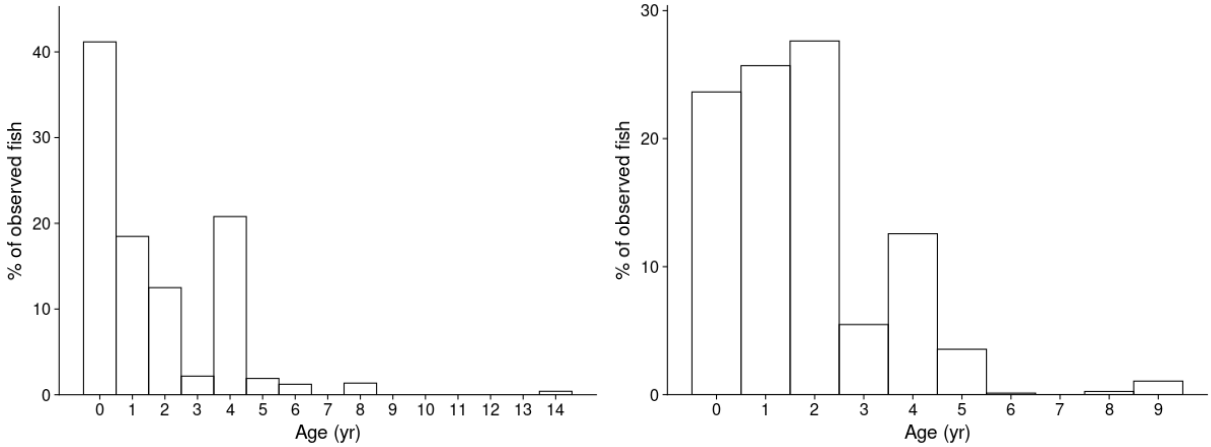

Figure 2. Age frequencies of White Crappie in Boomer Lake 2020 (left) and 2024 (right).

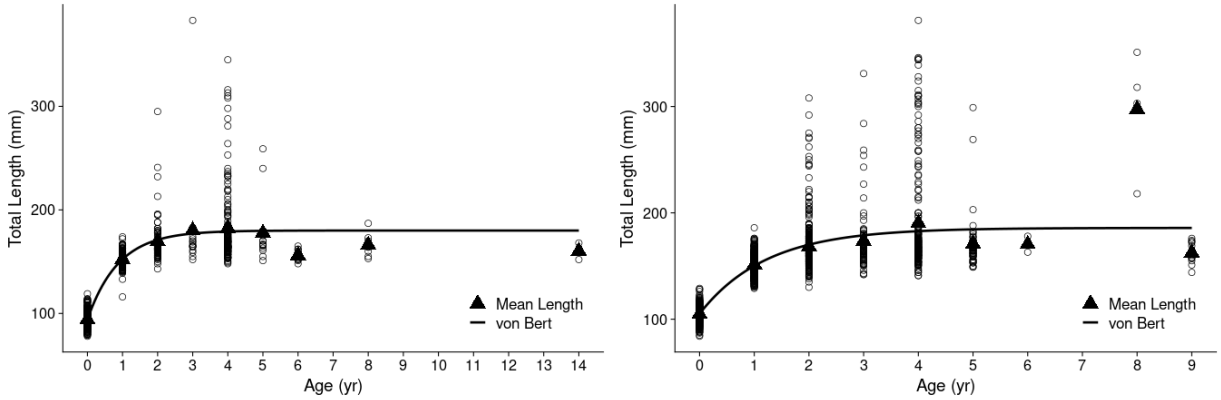

Figure 3. Mean Length at age and von Bertalanffy growth equation of White Crappie in Boomer Lake sampled in 2020 (left) and 2024 (right).

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

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