SURVEY REPORT

OKLAHOMA DEPARTMENT OF WILDLIFE CONSERVATION

FISH MANAGEMENT SURVEY AND RECOMMENDATIONS

FOR

Crowder LAKE

2024

State: Oklahoma

Project Title: Crowder Fish Management Survey Report

Period Covered: 2024

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Crowder

ABSTRACT

Crowder reservoir has excellent bass fishing especially considering its size. This makes it a good choice for anglers targeting big bass as the chances of an encounter are greater given the bass to surface acre ratio. Crowder is also unique in that while it has many large bass it also has high numbers which can lead to high catch rates. While there are a few catfish in the reservoir it has a better bullhead fishery than channel cat fishery. Crappie are present in lower numbers but body condition is excellent and should make up for the lower catch rates. While not specifically sampled staff notice large numbers of larger than average Redear and Bluegill in Crowder. While not as popular as a fish in the South as up North there is the potential for great shoreline fishing or float fishing for these species at crowder although given its small size, heavy pressure could quickly eliminate the larger individuals.

INTRODUCTION

Crowder reservoir is a small reservoir in Pittsburg county with a dam on the shore of lake Eufaula. It is known for its Largemouth Bass fishing with high catch rates and large fish. Previous samples have had the 5 largest fish within a electrofishing sample surpass 35 pounds. As it is located near a Eufaula boat ramp many anglers pass the reservoir to fish Eufaula resulting in Crowder reservoir having low angler pressure and protecting the fishery.

RESULTS

Largemouth Bass

Largemouth Bass were sampled in 2024 using shoreline electrofishing at Crowder reservoir. Catch rates were good but down from the all time high in 2020 (table 1). Largemouth Bass Catch Per Unit Effort (CPUE) by size class was relatively steady between stock and preferred sizes while catch rates of memorable size fish was much lower (table 2). This is also clearly illustrated in the Largemouth Bass length frequency histogram (figure 1). PSD was up in 2024 compared to previous years although this was driven by a lower number of smaller fish this year compared to previous years and a greater number of preferred size fish rather than memorable or trophy sized bass (table 3). Relative weight (Wr) has been steady across the last 20 plus years with a consistent trend of increasing Wr with size class every year a sample has been collected (table 4). The majority of fish

were between the ages of 2 and 4 before the percentage of the sample plummeted at age 5 (figure 2). Mean length at age was similar between 2020 and 2024 with some variability at larger sizes which was likely influenced by low catch rates making the mean more variable (table 5). Mean weigh at age was down in 2024 with average weight at age being much higher in 2020 for age 4 and 5 fish compared to 2024 (table 6). Older fish seemed to show similar weights compared to the 2020 sample. Von Bertalanffy growth metrics were similar between years while the mortality rate was nearly double in 2024 likely due to fewer older fish collected in the sample (table 7 and 8).

Table 1: Largemouth Bass Catch Per Unit Effort (CPUE) by year.

Total CPUE	2003	2020	2024
Mean	77.65	104	82.8
Count	17	6	5
SE	9.08	23.27	12.78
L 95% CI	59.86	58.39	57.74
U 95% CI	95.43	149.61	107.86

Table 2: Largemouth Bass Catch Per Unit Effort by size class across years.

CPUE Size	2003		2020		2024	
	Mean	SE	Mean	SE	Mean	SE
Substock	12	2.25	18	12.96	4.8	3.5
Stock	22.35	4.5	27	13.83	13.2	5.16
Quality	20.24	3.44	14	14	27.6	4.49
Preferred	16.94	2.65	33	25.54	36	4.24
Memorable	5.88	1.14	12	7.59	1.2	1.2
Trophy	0.24	0.24	.	.	.	.

Table 3: Largemouth Bass Proportional Size Distribution by year.

PSD	2003	2020	2024
PSD	66	69	83
PSD-P	35	52	48
PSD-M	9	14	2
PSD-T	.	.	.
PSD S-Q	34	31	17
PSD Q-P	31	16	35
PSD P-M	26	38	46
PSD M-T	9	14	2

Table 4: Largemouth Bass Relative Weight (Wr) across years.

Wr	2003		2020		2024	
	Mean	SE	Mean	SE	Mean	SE
Substock	99.44	2.56	73.8	3.5	.	.
Stock	89.49	1.39	78.63	2.02	78.26	3.24
Quality	92.71	1.28	87.52	2.51	86.94	2.87
Preferred	94.79	1.3	91.08	2.25	93	1.69
Memorable	100.9	2.41	91.16	3.34	94.99	.
Trophy	7.98	.	.	.	.	.
Total	93.27	0.78	86.17	1.34	88.39	1.53

Table 5: Largemouth Bass Mean length at age across years.

Mean Length at Age	2020		2024	
	Mean	SE	Mean	SE
1	135	5.26	120	7.18
2	254.25	4.39	257.5	11.58
3	361.44	15.44	346.47	3.92
4	425.6	8.23	396.52	4.25
5	433	16	409.5	14.5
6	451	16	468	28.62
7	510.8	16	463.33	35.74
8	531.67	4.69	470	.
9	.	.	523	40
10	494	.	.	.
11		.	.	.
12	428	.	.	.
13	.	.	.	.
14	558	.	.	.

Table 6: Largemouth Bass Mean weight at age across years.

Mean Weight at Age	2020		2024	
	Mean	SE	Mean	SE
1	24.59	2.86	18.5	2.99
2	182.67	11.23	215.75	36.7
3	643.89	118.15	530.27	28.45
4	1148.0	77.36	875.04	37.77
5	1205	109	981	11
6	1296	182	1622.67	351.33
7	1866.8	103.02	1492.67	360.91
8	2263	81.13	1710	.
9	.	.	2240	592
10	1886	.	.	.
11	.	.	.	.
12	1070	.	.	.
13	.	.	.	.
14	2976	.	.	.

Table 7: Largemouth Bass Von Bertalanffy across years.

Von Bert	2020	2024
L inf	537.39	505.703
K	0.411	0.423
t0	0.336	0.328

Table 8: Largemouth Bass Mortality rate across years.

Mortality Table	2020	2024
Instantaneous	0.205321	0.42
Annualized	18.56	32.12

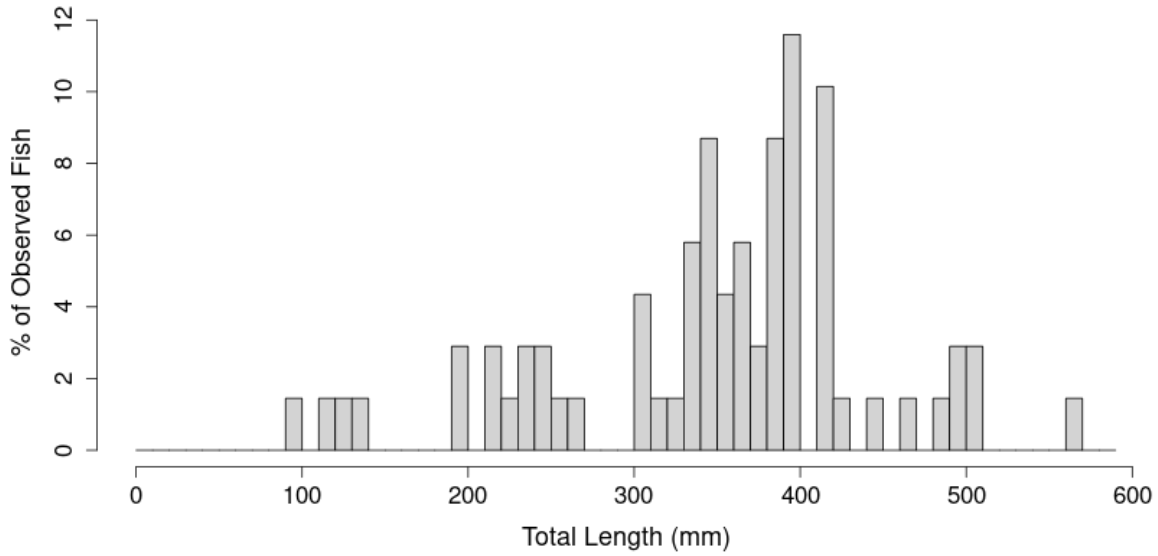

Figure 1: Largemouth Bass length Frequency histogram.

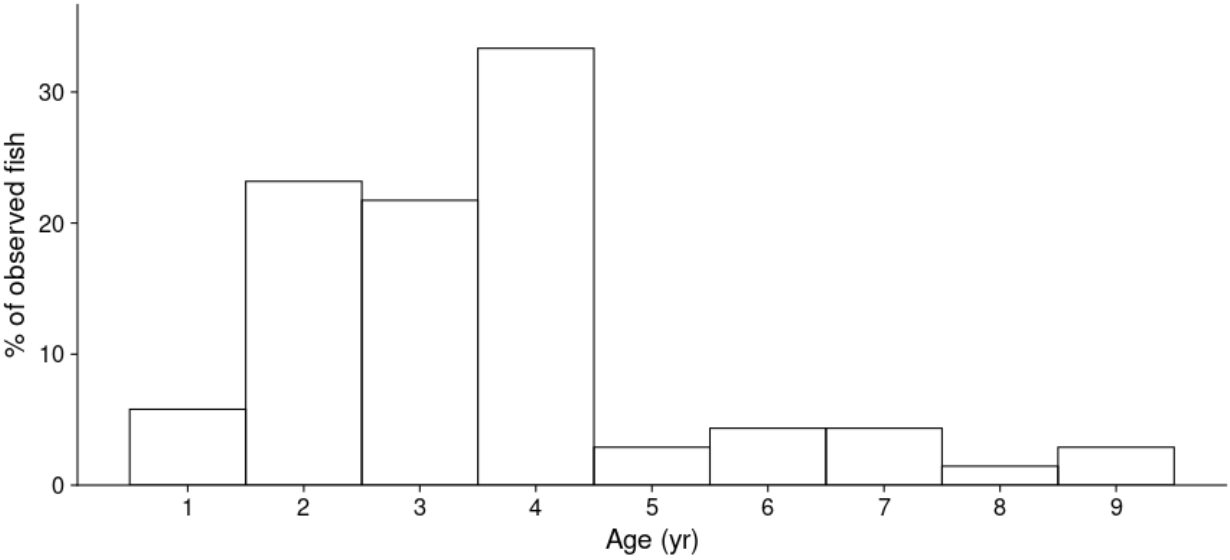

Figure 2: Largemouth Bass Age Frequency histogram.

Crappie

Crappie catch rates at Crowder lake were below the threshold for analysis by individual species but collectively enough to combine and draw a few inferences from. Combining the species does preclude some metrics such as Relative Weight, and specific age, growth, and mortality estimates. Overall the crappie population is small but healthy despite the small size of the reservoir. The vast majority of crappie are between 200 and 250 mm with a good number of larger individuals above 300 mm (figure 3). While the reservoir cannot sustain heavy angler pressure targeting crappie it does provide an alternative to nearby Eufaula reservoir when weather conditions are poor on the larger waterbody. The

lack of smaller individuals in Crowder is surprising considering the small size of the water body but consistent with a pattern seen in this part of the state of smaller waterbodies having small populations of larger crappies

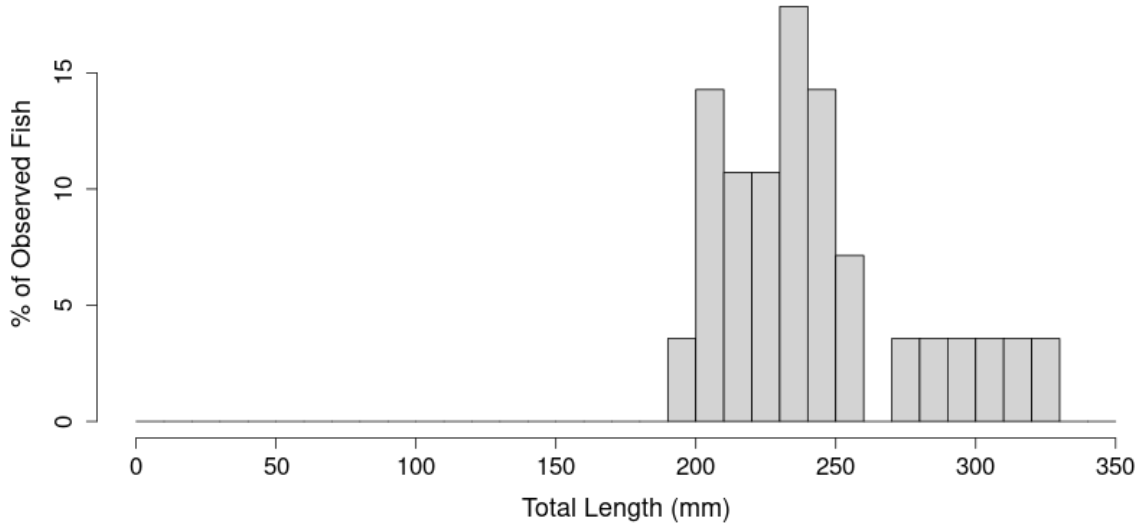

Figure 3: Crappie length frequency histogram.

Catfish

Gill netting collected zero catfish but did net a small sample of Bullhead. Numbers of bullhead were below the threshold for analysis. Visual observation of the size and condition of bullhead confirm a good fishery and opportunity for interested anglers to pursue this species if they so choose. Bullhead were on the larger size and in good enough condition to warrant harvest.

Recommendations

1. Continue to monitor Largemouth Bass and consider supplemental forage and select harvest to increase number and size of high-quality bass.
2. Consider targeted sampling of Redear.
3. Work with the lab to sample large numbers of Bullhead.