SURVEY REPORT
OKLAHOMA DEPARTMENT OF WILDLIFE CONSERVATION

FISH MANAGEMENT SURVEY AND RECOMMENDATIONS
FOR
CANTON LAKE
2024

SURVEY REPORT

State: Oklahoma

Project Title: Canton Lake Fish Management Survey Report

Period Covered: 2015-2024

Prepared by: Dalton Norris

Date Prepared: November 2024

<u>CANTON LAKE</u>

<u>ABSTRACT</u>

Canton Lake was sampled in the years 2024-2015 by means of fall experimental gill net sampling and in 2023 for black and white crappie with two trap net types. Survey results for fall gillnets indicate that there is a high abundance of hybrid striped bass and white bass in the lake. Total fish abundance for striped bass has increased in the last year sampled compared to previous years due to a stocking effort of striped bass in 2021. The results also indicate that walleye population has remained steady since 2015.

<u>INTRODUCTION</u>

Canton Lake is located in both Blain County and Dewey County, and the United States Army Corps of Engineers constructed Canton Lake in 1948 as a method of flood control, water supply and irrigation. The City of Oklahoma City uses Canton Lake as a municipal water supply reservoir. This allows the City of Oklahoma City to draw water from Canton Lake as an additional water supply.

In recent years, the City of Oklahoma City has taken large amounts of water. The first draw of water took place in June of 2011. This first draw took approximately 30,000 acre feet of water and dropped the level of the lake by 3 feet. The second big extraction of water occurred in October of 2011, and another 30,000 acre feet was drawn and dropped the lake level by 5-6 feet. The third draw of the lake water was again 30,000 acre feet in February of 2013 causing the lake to fall 6 feet (Appendix 1).

At normal pool, Canton Lake covers 7,910 surface acres and has 111,310 acre feet of storage capacity. Canton Lake is an impoundment of the North Canadian River that has an annual exchange rate of 9.4 and a drainage area of 7,500 square miles. The main pool of the lake has a secchi depth of approximately 25 inches. Canton Lake has a mean depth of 15 feet and a maximum depth of 35 feet. The prevailing winds at Canton Lake are southerly at 12 mph, and the annual fluctuation of water depth is 4 feet. This fluctuation can impact the 45 miles of shoreline around Canton Lake. The shoreline development ratio of the lake is 6.4. Fish attractors have also been added to the south end of Canton Lake in the form of cedar brush piles and 20 Shelbyville cubes were added in 2024 (Appendix 2).

Canton Lake is home to popular sport fish populations of walleye, hybrid striped bass, white bass, channel catfish, crappie, and largemouth bass. The largemouth bass population historically has poor recruitment due to poor cover along shorelines and the 4 foot fluctuation of water levels annually. Regulations for Canton Lake are a 14 inch minimum for walleye, a 20 fish per day limit for hybrid striped bass (no more than 5 over 20 inches), and no limit or minimum size on white bass. There is also an annual tournament on Canton called "Walleye Rodeo" that is held every May. This tournament is the largest and oldest fishing tournament in Oklahoma.

Canton Lake remains a high quality walleye fishery due to the first stocking efforts that took place in the 1950s. Historically, walleye and saugeye fingerlings stocked throughout the state came out of Canton Lake brood stock through spring gill net collection. This has since changed to walleye brood stock coming from fish elsewhere. Recent stocking efforts for Canton Lake show stocking of walleye, hybrid striped bass, striped bass, redear sunfish, and hybrid sunfish (Appendix 3).

<center>**RESULTS**</center>

WALLEYE

Gillnet sampling on Canton Lake took place in the fall of 2024-2015. These fall gillnet samples were conducted following Standard Sampling Procedures for Fisheries Management. These experimental gillnets are made up from monofilament with mesh sizes of 1.9-6.4 cm. The gill nets were 24 meters long and 1.8 meters deep with a float line and a lead line to ensure the net is deployed properly. Sampling locations for the nets were selected randomly by 300m^2 grids and an ideal water depth of less than 4.5 meters.

Overall abundance fluctuated over the years, but in recent years, CPUE has remained around 4. Catch rates did increase in 2019 (CPUE=9.34). In 2022, the catch rate for quality sized fish (380-510mm) was the highest (CPUE=2.4). With the overall CPUE values being between 2.22 and 9.34, this places Canton Lake above the state of Oklahoma average value for CPUE (CPUE=1.39). Relative weight (Wr) values for individuals demonstrate that the body condition was favorable (Wr≥80) through all years sampled (Table 1). The statewide average Wr value for walleye is 90. Some years fell short of this CPUE=90 mark but never below CPUE=80. The length frequency histograms also show that the total length frequencies have decreased since 2019 (Figure 1).

Total length of walleye has decreased with age as observed in table 2. Mean total length at age decreased from 2018-2022. There was an increase of mean length at age for the 2024 survey. L infinity values could be slightly skewed due to older individuals not being collected in the samples from 2019-2024 and very few individuals collected at older ages in 2018.

Proportional size distribution (PSD) values demonstrate that over half of individuals collected in every year, except 2021, were favorable for anglers to collect (Table 3). The average PSD value for Oklahoma is 66. The last two years sampled, 2024 and 2022, fell below that average of 66.

It is recommended that annual walleye stocking continues at Canton Lake at a rate of 500 individuals per acre as well as annual sampling to evaluate the status of the walleye fishery.

Table 1: Total number (No), catch per unit effort (CPUE), and relative weights (Wr) by size group of Walleye collected in fall gill net surveys from Canton Lake.

Year	No	Total CPUE CPUE	Substock <250 mm CPUE	Substock <250 mm Wr	Stock 250 mm CPUE	Stock 250 mm Wr	Quality 380 mm CPUE	Quality 380 mm Wr	Preferred 510 mm CPUE	Preferred 510 mm Wr	Memorable 630 mm CPUE	Memorable 630 mm Wr
2024	39	3.40	0.09	85.74	11.39	92.41	1.92	92.3	-	-	-	-
2022	49	4.05	-	-	1.4	90	2.4	80	0.25	81	-	-
2021	56	4.98	-	-	2.58	96.84	2.22	89.67	0.18	85.37	-	-
2020	72	3.39	-	-	0.66	93.44	2.54	91.21	0.19	93.13	-	-
2019	119	9.34	-	-	3.14	94.89	4.39	98.05	1.73	96.95	0.08	89.23
2018	70	6.59	0.47	94.7	2.35	94.06	2.45	86.04	1.04	83.76	0.28	87.94
2017	54	4.74	-	-	0.72	98.09	2.98	93.59	0.95	85.11	0.09	102.1

| 2016 | 25 | 2.22 | 0.44 | 82.54 | 0.44 | 87.42 | 1.07 | 82.27 | 0.27 | 82.13 | - | - |
| 2015 | 70 | 5.83 | 0.17 | 182.57 | 2.25 | 90.64 | 2.08 | 86.15 | 1.33 | 94.1 | - | - |

Table 2: Mean total length at age (mm) and L infinity (estimated mean maximum length) for Walleye collected from Canton Lake.

Year	Age 0	Age 1	Age 2	Age 3	Age 4	Age 5	Age 6	Age 7	L inf
2024	284.88	411.54	462.33	437	509	-	-	-	470.418
2022	263.33	382.59	420	455.5	517.33	-	-	-	500.07
2021	287.79	424.45	455.24	503.5	-	-	-	-	488.257
2020	-	382	450.15	445	525.5	605	-	-	672.72
2019	285.54	408.43	504	545.2	613	599.5	-	-	656.84
2018	268.12	354.91	439.65	526.44	539	632	612	641.67	748.513

Table 3: Proportional Size Distribution (PSD), Proportional Size Distribution of Preferred (PSD-P) and Memorable (PSD-M) Walleye collected from Canton Lake gillnet surveys.

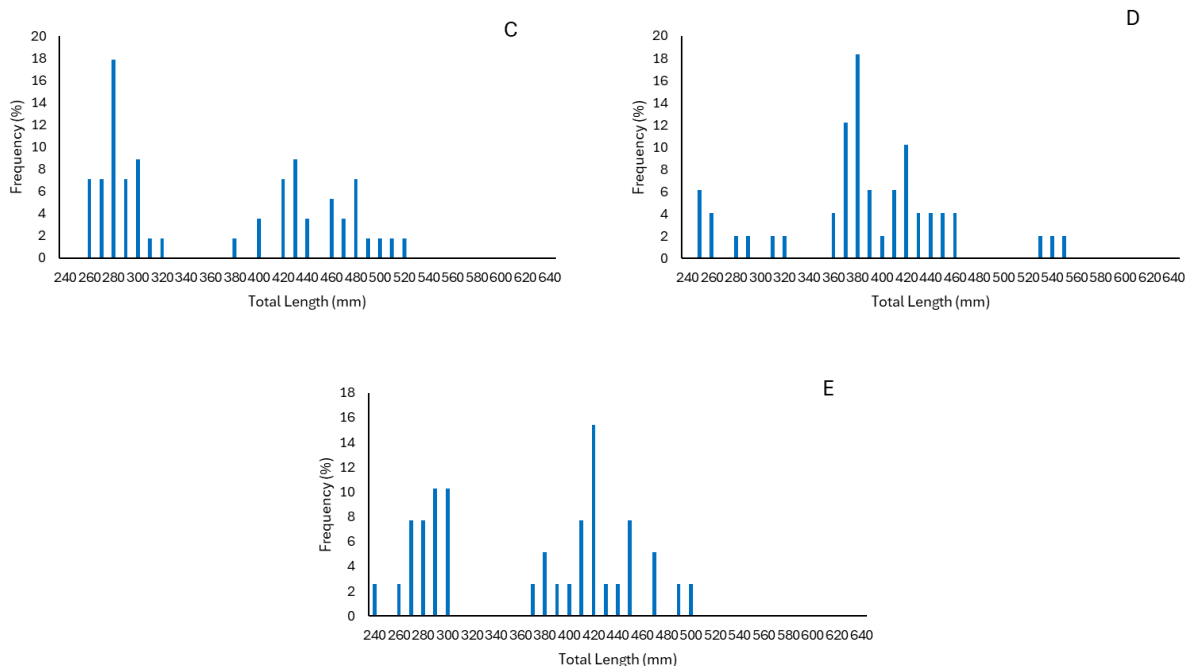| Year	PSD	PSD-P	PSD-M
2024	58	-	-
2022	65	6	-
2021	48	4	-
2020	81	6	-
2019	66	19	1
2018	62	22	5
2017	85	22	2
2016	75	15	-
2015	60	24	-
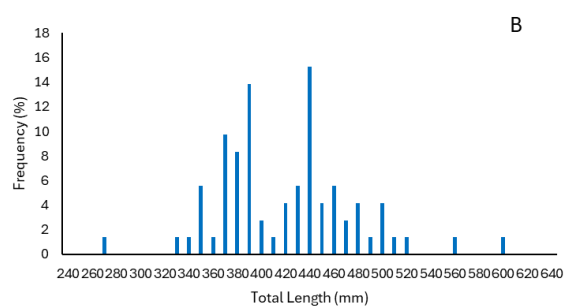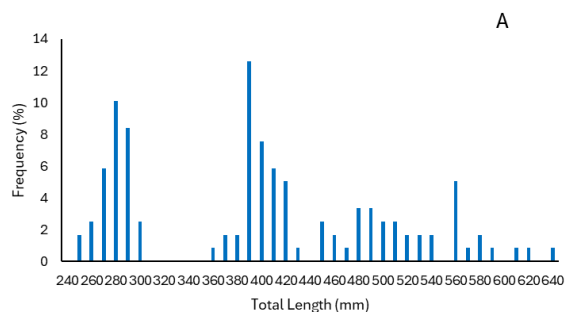
Figure 1: Walleye Length Frequencies for Canton Lake 2019(A), 2020(B), 2021(C), 2022(D), and 2024(E).

HYBRID STRIPED BASS

Hybrid striped bass were sampled in 2015-2024 through fall gill net sampling. Fall gillnet samples were conducted following Standard Sampling Procedures for Fisheries Management. Gillnets are made up from monofilament line with mesh sizes of 1.9-6.4 cm, and they were 24 meters long and 1.8 meters deep with a float line and a lead line to ensure the net is deployed properly. Sampling locations for net sets were selected randomly by using a 300m^2 grids and an ideal water depth of less than 4.5 meters.

Catch rates for hybrid striped bass have been high in the last 10 years with 2017 having the highest CPUE of 21.19 (Table 4). The last two years sampled (2022 and 2024) showed a higher catch rate of individuals in the preferred (510-610mm) size range (Table 4). This increase in size can also be observed in the histograms of Figure 2. This size increase is possibly due to the large stocking effort in 2015 (Appendix 3). Given that there is no recorded natural reproduction of hybrid striped bass in Canton Lake, the fish stocked in 2015 would have gotten older and larger in the following years.

Relative weight (Wr) values were over the preferred value (Wr≥80) in the size ranged except in preferred and memorable. The Wr values observed in 2022, 2021, and 2020 mostly fell short of the state average for Oklahoma of 87 with the 2024 survey values being much closer or over the state average.

Proportional size distribution (PSD) values were low in 2024 (PSD=66) and high in 2022 (PSD=100) and 2021 (PSD=85). These high values indicate that most of the individuals, if not all, we over a favorable size for anglers to catch. The low values indicate a majority of individuals were below a favorable size. The average PSD value for hybrid striped bass in Oklahoma is 55 meaning that the last two sample years were over the state average.

Table 5 indicates that the mean length at age has decreased for individuals in the age 2, age 3, and age 4 year classes compared to previous sample years. By the mean length at age value dropping, it can be assumed that individuals are growing slower compared to previous individuals stocked.

It is recommended that stocking of hybrid striped bass continues every other year at the rate of 5 individuals per acre. Canton Lake should also be surveyed annually to evaluate the hybrid striped bass fishery.

Table 4: Total number (No), catch per unit effort (CPUE), and relative weights (Wr) by size group of Hybrid Striped Bass collected in fall gill net surveys from Canton Lake.

Year	No	Total CPUE	Substock <250 mm		Stock 250 mm		Quality 410 mm		Preferred 510 mm		Memorable 610 mm		Trophy 710 mm	
		CPUE	CPUE	Wr	CPUE	Wr	CPUE	Wr	CPUE	Wr	CPUE	Wr	CPUE	Wr
2024	71	6.14	-	-	2.10	87.27	1.04	89.47	3.00	83.59	-	-	-	-
2022	115	9.68	-	-	-	-	8.34	83	1.18	73	0.08	67	0.08	92
2021	169	15.02	0.27	82.02	2.22	86.98	11.64	89.22	0.89	75.77	-	-	-	-
2020	152	7.15	0.33	80.84	4.75	84.59	0.09	82.79	1.79	74.84	0.19	75.27	-	-
2019	65	5.09	0.86	100.19	3.29	100.45	0.31	97.75	0.55	86	0.08	90.75	-	-
2018	135	12.7	-	-	0.09	63.09	8.47	82.31	4.05	81.05	0.09	85.65	-	-
2017	235	21.19	-	-	7.05	98.8	12.99	89.81	1.15	89.16	-	-	-	-
2016	114	10.13	2.84	80.86	6.84	80.33	0.27	90.04	0.18	88.15	-	-	-	-
2015	67	5.58	0.08	76.46	4.58	81.78	0.92	95.28	-	-	-	-	-	-

Table 5: Mean total length at age (mm) and L infinity (estimated mean maximum length) for Hybrid striped bass collected from Canton Lake gillnet surveys.

Year	Age 0	Age 1	Age 2	Age 3	Age 4	Age 5	L inf
2024	-	399.78	-	-	523.50	547.27	625.928
2022	-	-	440.88	474.33	561.44	681	-
2021	-	387.21	456.08	-	-	570.88	566.765
2020	198.43	370.15	531.33	538.07	582.82	530	629.511
2019	258.95	328.17	379	466.5	534.6	-	-
2018	-	-	459.89	515.3	-	-	-

Table 6: Proportional Size Distribution (PSD), Proportional Size Distribution of Preferred (PSD-P), Memorable (PSD-M), and Trophy (PSD-T) of Hybrid Striped Bass collected from Canton Lake gillnet surveys.

Year	PSD	PSD-P	PSD-M	PSD-T
2024	66	49	-	-
2022	100	14	2	1
2021	85	6	-	-
2020	30	29	3	-

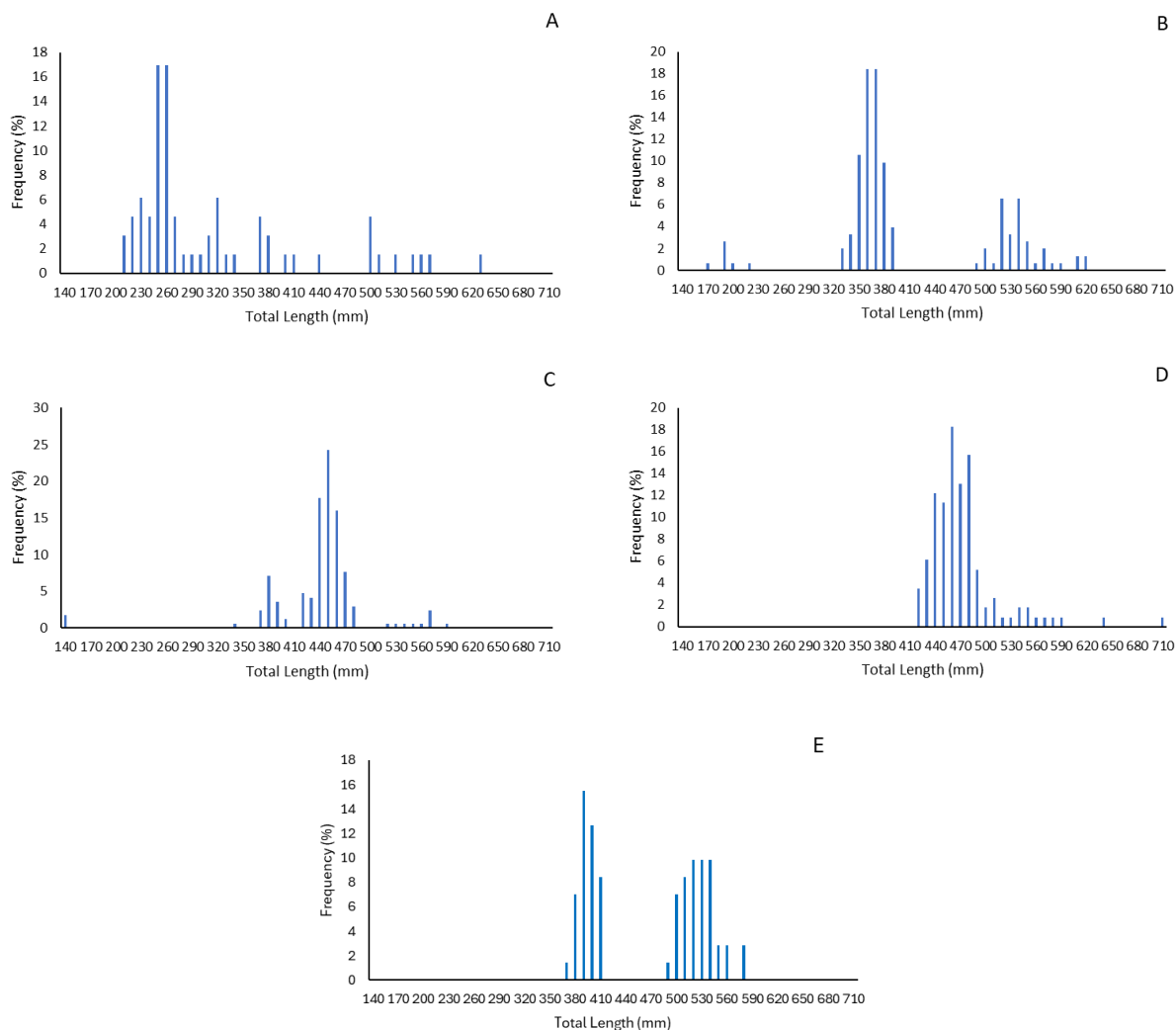|				
2019	22	15	2	-
2018	99	33	1	-
2017	67	6	-	-
2016	6	2	-	-
2015	17	-	-	-

Figure 2: Hybrid Striped Bass Length Frequencies for Canton Lake 2019(A), 2020(B), 2021(C), 2022(D), and 2024(E).

STRIPED BASS

Striped Bass were identified in fall gillnet samples from 2016-2024. Fall gillnet samples were conducted following Standard Sampling Procedures for Fisheries Management. Gillnets utilize mesh sizes of 1.9-6.4 cm created from monofilament line. Experimental gillnets were 24 meters long and 1.8 meters deep

with a float line and a lead line to ensure the net is deployed properly and to achieve proper buoyancy. A series of 300m² grids was used to randomly select locations for net sets and an ideal water depth of less than 4.5 meters was targeted for the sets.

 Catch rates have been low for striped bass at Canton Lake. There was an increase in catch per unit effort (CPUE) in 2022 (CPUE=1.27) compared to 2021 (CPUE=0.27) with another decrease in 2024 (CPUE=0.26) (Table 7). The average CPUE value for Oklahoma is 2.81 which demonstrates that catch rates were well below the state average. The increase in this catch rate is possibly due to the recent stocking effort of striped bass in 2021 (Appendix 3). In the 2024 sample, individuals in the preferred size range (760-880mm) were recorded (Table 7). The sample size was low (n=3-17) for every year of surveys, so age estimates were not accurate. Figure 3 and Table 7 show that there were large individuals collected in the quality or preferred size ranges from 2024 to 2018. This is due to previous stocking efforts from before 2014.

Relative weight (Wr) values for 2024 were around the favorable value (Wr=80) demonstrating that individuals were in decent condition. The average Wr value for the state of Oklahoma is 96. This Wr value of 96 has not been met since 2016 (Table 7).

Proportional size distribution (PSD) values for striped bass show that a very high percentage of individuals were of a favorable size for anglers to catch every year observed except for 2022. The PSD values of 100 reached in 2018-2021 and 2024 were much higher than the state average PSD value of 33 (Table 8).

With sample size and CPUE being very low, it is difficult to examine the status of the fishery.

It is recommended that periodic stocking of striped bass continues to sustain the fishery. Annual surveys should also be conducted to evaluate the status of the striped bass fishery in Canton Lake.

Table 7: Total number (No), catch per unit effort (CPUE), and relative weights (Wr) by size group of Striped Bass collected in fall gill net surveys from Canton Lake.

		Total CPUE	Substock <300 mm		Stock 300 mm		Quality 510 mm		Preferred 760 mm	
Year	No	CPUE	CPUE	Wr	CPUE	Wr	CPUE	Wr	CPUE	Wr
2024	3	0.26	-	-	-	-	0.17	86.66	0.09	76.32
2022	15	1.27	-	-	0.93	88.36	0.17	80.9	0.17	77.96
2021	3	0.27	0.09	78.25	-	-	0.18	78.47	-	-
2020	6	0.28	-	-	-	-	0.28	80.55	-	-
2019	3	0.24	-	-	-	-	0.16	90.75	0.08	90.09
2018	4	0.38	-	-	-	-	0.38	79.52	-	-
2017	8	0.73	-	-	0.73	92.11	-	-	-	-
2016	17	1.51	1.24	92.71	0.27	93.9	-	-	-	-

Table 8: Proportional Size Distribution (PSD) and Proportional Size Distribution of Preferred (PSD-P) of Striped Bass collected from Canton Lake gillnet surveys.

Year	PSD	PSD-P

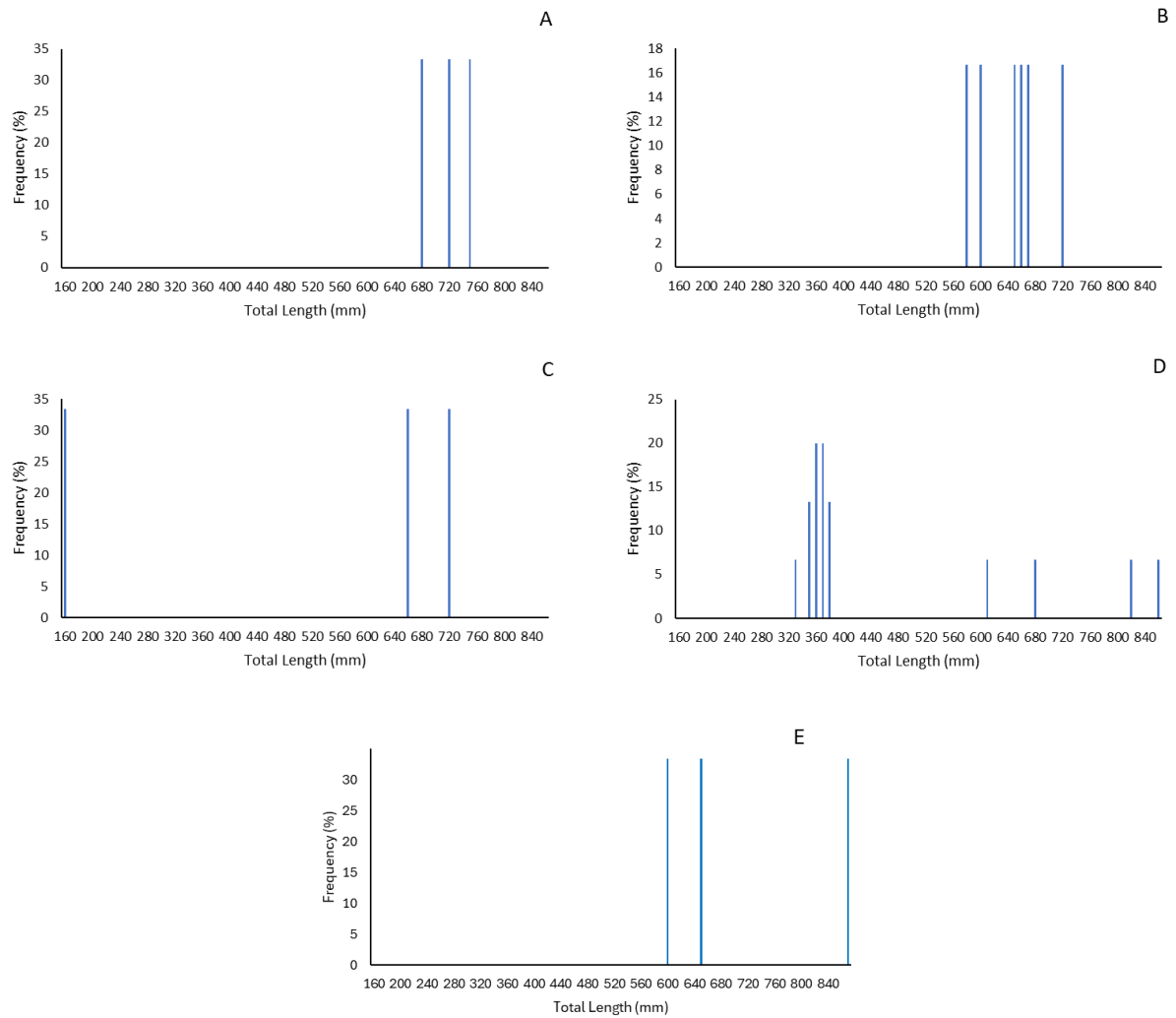| 2024	100	33
2022	27	13
2021	100	-
2020	100	-
2019	100	33
2018	100	-

Figure 3: Striped Bass Length Frequencies for Canton Lake 2019(A), 2020(B), 2021(C), 2022(D), and 2024(E).

WHITE BASS

White bass are sampled in fall gill net surveys in 2015-2024. Standard Sampling Procedures for Fisheries Management were followed for all fall gillnet surveys conducted on Canton Lake. Gillnets were created by monofilament line mesh which ranged from 1.9-6.4 cm sized mesh. The dimensions of the nets were 24 meters long and 1.8 meters deep with a float line with a lead line to ensure the net is deployed properly. Sampling locations for net sets targeted 4.5 meters or less of water, and they were randomly selected using a 300m^2 grid.

The catch per unit effort (CPUE) values for white bass in these surveys were high (CPUE=10.14-25.96) except for 2020 (CPUE=2.77). These high CPUE values were much higher than the state average (CPUE=5.03). The size range of white bass has remained stable throughout the last 10 years and the last 4 years sampled, as displayed in figure 4. Table 9 displays that from 2024 to 2015, the CPUE for size range was highest in the preferred range for most years. There was one year in the last 10 years (2015) where a trophy length range was collected. A high CPUE demonstrates that white bass populations are high in Canton Lake. The largest white bass collected was 460 mm collected in 2015. The smallest white bass collected was 110 mm collected in 2017.

Relative weight (Wr) values were also high for every year sampled in Canton Lake. The favorable Wr values (Wr≥80) demonstrate a good condition of the individuals. The state average Wr value for white bass is 93 which is just slightly higher than the Wr values from 2024 (Table 9).

Proportional size distribution (PSD) values for white bass sampled were above 50 for every year except 2016. This shows that over half of individuals collected would be of a favorable size for anglers. The state average PSD value for white bass is 84 which was met in 2024, 2022, and 2017. Every other year that was sampled fell below the PSD=84 mark (Table 10).

It is recommended that Canton Lake be sampled for white bass annually to evaluate the status of the fishery.

Table 9: Total number (No), catch per unit effort (CPUE), and relative weights (Wr) by size group of White Bass collected in fall gill net surveys from Canton Lake.

Year	No	Total CPUE	Substock <150 mm		Stock 150 mm		Quality 230 mm		Preferred 300 mm		Memorable 380 mm		Trophy 460 mm	
		CPUE	CPUE	Wr	CPUE	Wr	CPUE	Wr	CPUE	Wr	CPUE	Wr	CPUE	Wr
2024	263	22.58	-	-	1.99	94.44	2.76	86.93	13.03	90.38	4.80	87.91	-	-
2022	221	18.62	2.53	92.38	2.53	93.16	1.52	91.11	8.42	89.56	3.62	88.89	-	-
2021	146	12.98	0.18	93.67	3.82	93.58	1.33	99.49	4.98	98.57	2.67	93.11	-	-
2020	59	2.77	0.19	90.12	0.56	83.67	0.61	84.48	0.52	88.08	0.89	84.44	-	-
2019	331	25.96	0.24	101.03	6.98	100.34	4.78	101.25	12.71	106.29	1.25	106.67	-	-
2018	140	13.18	0.09	102.07	6.02	86.7	0.94	90.71	5.27	92.39	0.85	94.35	-	-
2017	-	19.14	0.18	-	2.11	-	1.31	-	14.66	-	0.88	-	-	-
2016	-	10.14	0.18	-	5.78	-	3.82	-	0.18	-	0.18	-	-	-
2015	-	24.17	0.33	-	8.67	-	6.25	-	0.92	-	7.92	-	0.08	-

Table 10: Proportional Size Distribution (PSD), Proportional Size Distribution of Preferred (PSD-P) and Memorable (PSD-M) of White Bass collected from Canton Lake gillnet surveys.

Year	PSD	PSD-P	PSD-M
2024	91	79	21
2022	84	75	23
2021	70	60	21
2020	78	55	35
2019	73	54	5
2018	54	47	6
2017	89	82	5
2016	42	4	2
2015	64	37	34
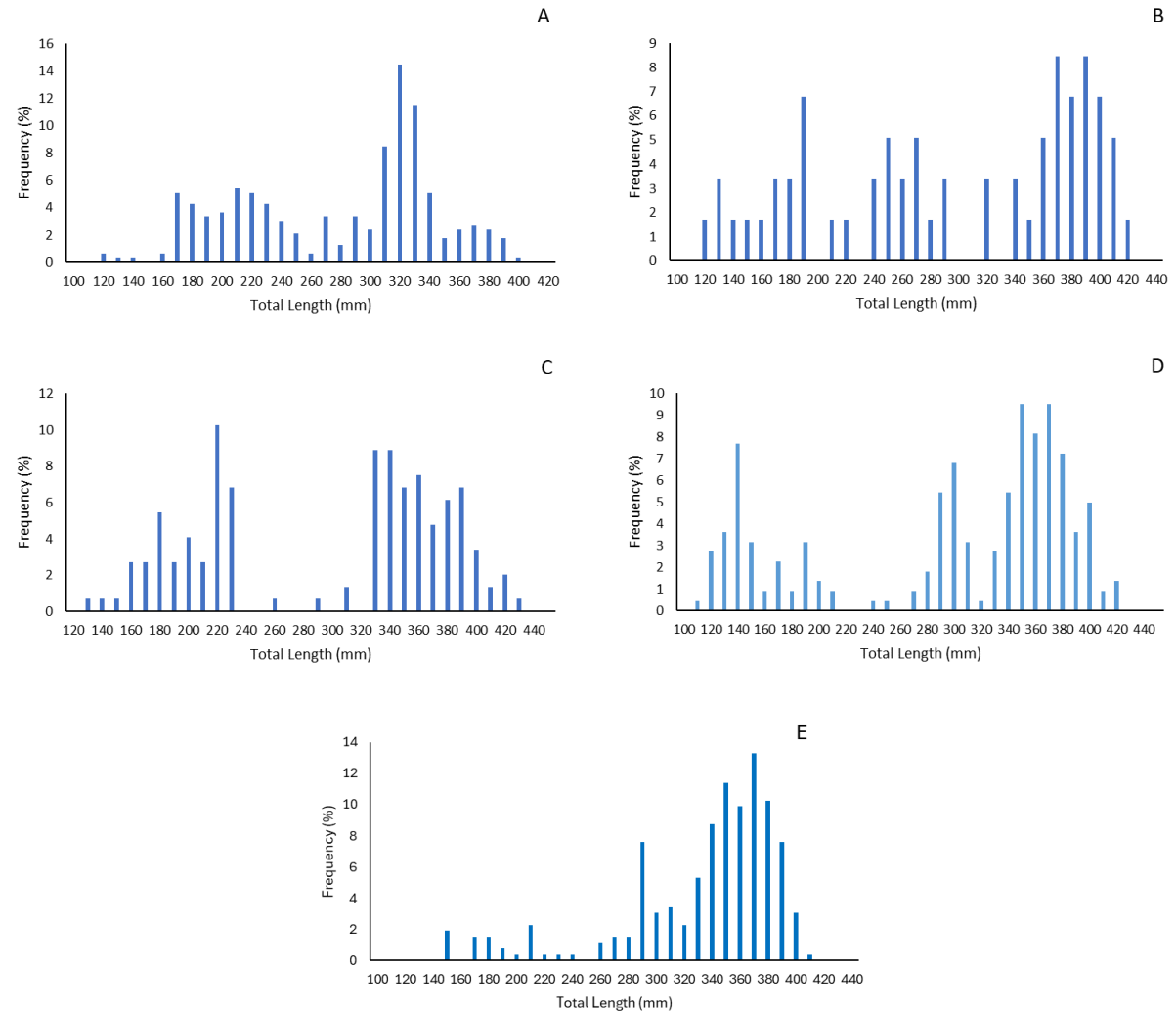
White Crappie

White Crappie were surveyed using two different techniques in the past 10 years. These survey techniques include gill net sampling and trap net sampling. The trap net sampling was conducted in November of 2023 by examining two different trap net types. Square throat and crow foot were the two types of trap nets were examined. This sample was sets of trap nets set perpendicular to the shoreline with the lead end of the net on the shore, and a 300m^2 random gride was used around the shoreline of Canton Lake.

By having two different sampling methods, it is difficult to compare the data between the two methods. The catch per unit effort (CPUE) value for the trap net survey (CPUE=9.26) is much higher than gill net surveys (CPUE=0.42-2.08) (Table 11 and Table 14). The state average CPUE value for white crappie is CPUE=2.83. The trap net survey was well above the statewide average, whereas the gill net survey was below the state average. This could be due to targeting crappie with the trap net survey. The size ranges displayed in figure 5 show that during the trap net survey, smaller individuals were collected. This is due to the mesh size of the trap net being much smaller than that of the experimental gillnets. The larger mesh size allows for smaller individuals to pass through without being collected.

Relative weight (Wr) values for both survey types were very high. All values except one were over the favorable value of Wr=80. The state average Wr value for white crappie is Wr=95. The Wr values from the samples were over the state average in every sample except for the gillnet survey in 2020 (Table 11 and Table 14).

Proportional size distribution (PSD) values were high in both survey types. These high values demonstrated that there is a large portion of individuals that are of favorable size, or larger, for anglers to catch at Canton Lake. The state average PSD value for Oklahoma is PSD=64. Every year sampled except 2015 and 2016 were over the state average PSD value.

It is recommended that Canton Lake is sampled annually for white crappie to evaluate the status of the fishery.

Table 11: Total number (No), catch per unit effort (CPUE), and relative weights (Wr) by size group of White Crappie collected in trap net surveys from Canton Lake.

Year	No	Total CPUE	Substock <130mm		Stock 130mm		Quality 200mm		Preferred 250mm		Memorable 300mm	
		CPUE	CPUE	Wr	CPUE	Wr	CPUE	Wr	CPUE	Wr	CPUE	Wr
2023	270	9.26	6.24	100.22	0.49	109.66	0.44	107.7	1.09	108.47	0.99	109.01

Table 12: Mean total length at age (mm) and L infinity (estimated mean maximum length) for White Crappie collected from Canton Lake trap net surveys.

Year	Age 0	Age 1	Age 2	Age 3	L inf
2023	97.76	240.9	295.55	308	325.874

Table 13: Proportional Size Distribution (PSD), Proportional Size Distribution of Preferred (PSD-P) and Memorable (PSD-M) White Crappie collected from Canton Lake trap net surveys.

Year	PSD	PSD-P	PSD-M
2023	84	69	33

Table 14: Total number (No), catch per unit effort (CPUE), and relative weights (Wr) by size group of White Crappie collected in gillnet surveys from Canton Lake.

		Total CPUE	Substock <130mm		Stock 130mm		Quality 200mm		Preferred 250mm		Memorable 300mm	
Year	No	CPUE	CPUE	Wr	CPUE	Wr	CPUE	Wr	CPUE	Wr	CPUE	Wr
2024	24	2.08	0.25	86.60	0.26	94.44	0.26	99.29	0.53	114.97	0.78	108.63
2022	16	1.35	0.13	-	0.04	119.13	0.22	109	0.13	108.73	0.17	107.93
2021	22	1.96	-	-	-	-	0.18	105.96	0.8	109.62	0.98	105.63
2020	10	0.47	0.05	77.65	0.09	86	0.09	92.66	-	-	0.24	104.4
2019	28	2.2	-	-	-	-	0.24	105.39	0.24	114.23	1.73	110.48
2018	21	1.98	-	-	-	-	0.28	100.54	1.32	101.21	0.38	103.18
2017	16	1.36	-	-	0.08	106	0.17	115.82	0.94	113.6	0.17	115.47
2016	3	0.27	0.09	-	0.09	-	0.09	-	-	-	-	-
2015	5	0.42	-	-	0.25	136.27	0.08	96.2	0.08	111.08	-	-

Table 15: Mean total length at age (mm) and L infinity (estimated mean maximum length) for White Crappie collected from Canton Lake gillnet surveys.

Year	Age 0	Age 1	Age 2	Age 3	Age 4	Age 5	L inf
2024	123.33	234.82	305.33	326.86	-	-	364.481
2022	-	197.67	310	325	-	-	327.312
2021	-	260	304.45	-	337	361	360.341
2020	-	185	311.4	-	-	-	-
2019	-	251.33	321.5	342.5	-	-	351.469
2018	-	251.2	275.25	-	-	-	-

Table 16: Proportional Size Distribution (PSD), Proportional Size Distribution of Preferred (PSD-P) and Memorable (PSD-M) White Crappie collected from Canton Lake gillnet surveys.

Year	PSD	PSD-P	PSD-M
2024	86	71	43

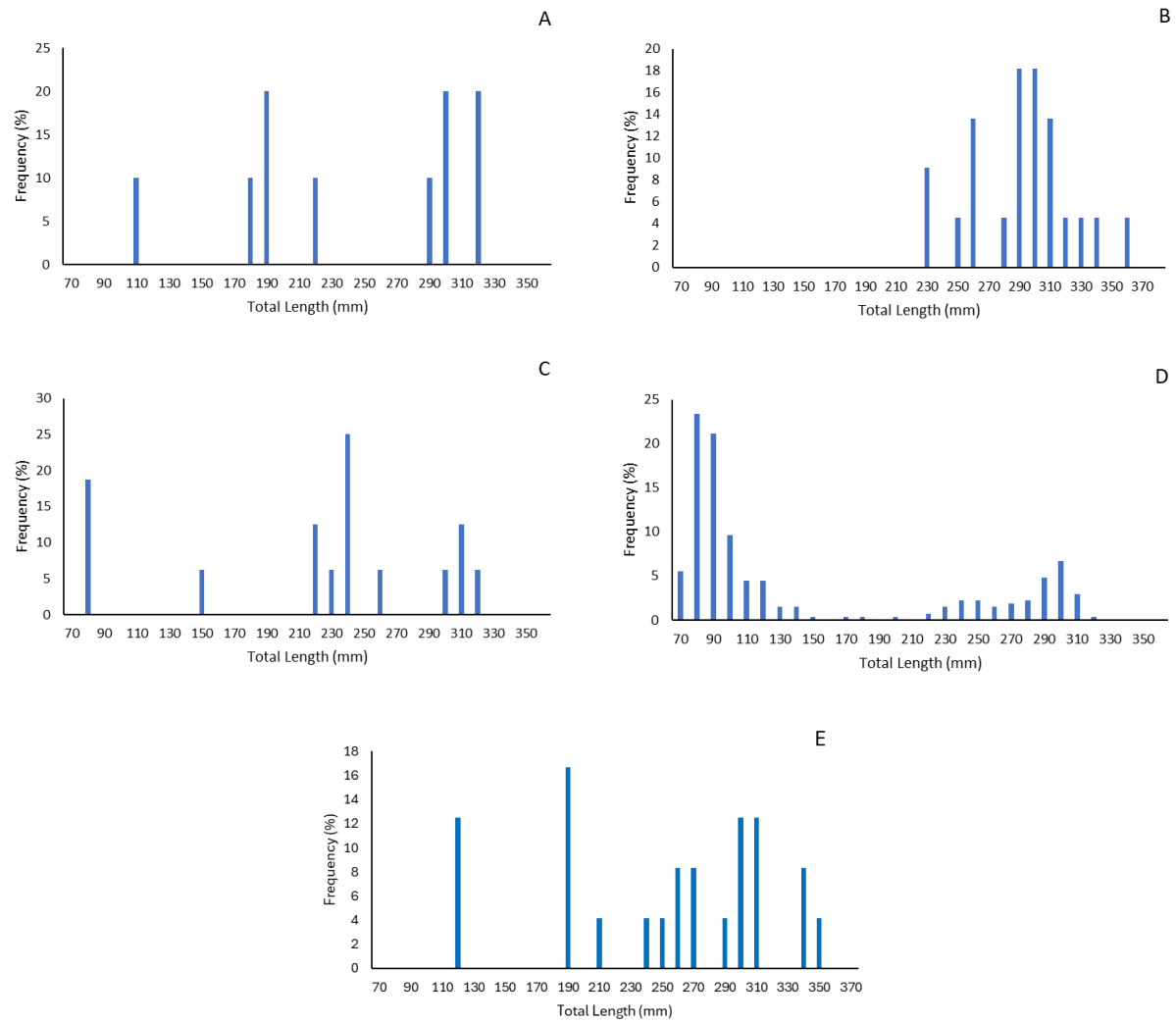|			
2022	92	54	31
2021	100	91	50
2020	78	56	56
2019	100	89	79
2018	100	86	19
2017	94	81	12
2016	50	-	-
2015	40	20	-

Figure 5: White Crappie Length Frequencies for Canton Lake 2020(A), 2021(B), 2022(C), 2023(D), and 2024(E).

Black Crappie

Black Crappie were surveyed using two different techniques in the past 10 years. These survey techniques include gill net sampling and trap net sampling. The trap net sampling was conducted in November of 2023 by examining two different trap net types. Square throat and crow foot were the two types of trap nets examined. This sample was sets of trap nets set perpendicular to the shoreline with the lead end of the net on the shore, and a 300m^2 random grid was used around the shoreline of Canton Lake.

The catch per unit (CPUE) value for both trap net surveys and gillnet surveys were similar with the trap net survey value being 0.48 and the gillnet survey value being 0.17-1.25 (Table 13 and Table 16). The statewide average CPUE value for black crappie is CPUE=0.33. The trap net survey conducted produced a CPUE value higher than the state average, whereas the gill net surveys in in 2024, 2022, 2020, and 2015 produced CPUE values below the average. The size ranges displayed in figure 6 show that during the trap net survey, smaller individuals were collected. This is due to the mesh size of the trap net being much smaller than that of the experimental gillnets. The larger mesh size allows for smaller individuals to pass through without being collected.

Relative weight (Wr) values for black crappie were over the Wr=80 mark that is favorable for good body condition except for the trophy size class individuals in 2017. The statewide average for black crappie in Oklahoma is Wr=99. The Wr values for the black crappie surveys on Canton Lake were around this Wr=99 mark with some falling below and others above. In the 2023 trap net survey, two class sizes were above this value, and two were below. The gillnet surveys of 2022 and 2021 saw one class size above and one below (Table 17 and Table 19).

Proportional size distribution (PSD) values for all surveys of black crappie were very high. These high values indicate that a large portion of individuals collected were of a favorable size for anglers to interact with.

It is recommended that Canton Lake is surveyed annually to evaluate the status of the black crappie fishery.

Table 17: Total number (No), catch per unit effort (CPUE), and relative weights (Wr) by size group of Black Crappie collected in trap net surveys from Canton Lake.

Year	No	Total CPUE	Substock <130mm		Stock 130mm		Quality 200mm		Preferred 250mm		Memorable 300mm	
		CPUE	CPUE	Wr	CPUE	Wr	CPUE	Wr	CPUE	Wr	CPUE	Wr
2023	14	0.48	0.31	125.96	0.04	93.14	-	-	0.07	99.46	0.07	95.78

Table 18: Mean total length at age (mm) and L infinity (estimated mean maximum length) for Black Crappie collected from Canton Lake trap net surveys.

Year	Age 0	Age 2	Age 3	Age 4	L inf
2023	110.8	281	310	309	319.325

Table 19: Proportional Size Distribution (PSD), Proportional Size Distribution of Preferred (PSD-P) and Memorable (PSD-M) Black Crappie collected from Canton Lake trap net surveys.

Year	PSD	PSD-P	PSD-M
2023	80	80	40

Table 20: Total number (No), catch per unit effort (CPUE), and relative weights (Wr) by size group of Black Crappie collected in gillnet surveys from Canton Lake.

Year	No	Total CPUE	Substock <130mm CPUE	Wr	Stock 130mm CPUE	Wr	Quality 200mm CPUE	Wr	Preferred 250mm CPUE	Wr	Memorable 300mm CPUE	Wr	Trophy 380mm CPUE	Wr
2024	2	0.18	-	-	-	-	0.09	108.44	-	-	0.09	114.32	-	-
2022	3	0.25	-	-	-	-	-	-	0.04	103.45	0.09	95.36	-	-
2021	6	0.53	-	-	-	-	-	-	0.44	104.78	0.09	98.74	-	-
2020	4	0.19	-	-	-	-	0.09	-	0.09	-	-	-	-	-
2019	16	1.25	-	-	0.16	101.83	0.94	104.02	0.16	104.95	-	-	-	-
2017	8	0.69	-	-	-	-	0.52	109.69	0.08	101.38	-	-	0.09	30.11
2015	2	0.17	-	-	0.17	115.01	-	-	-	-	-	-	-	-

Table 21: Proportional Size Distribution (PSD), Proportional Size Distribution of Preferred (PSD-P), Proportional Size Distribution of Memorable (PSD-M), and Trophy (PSD-T) Black Crappie collected from Canton Lake gillnet surveys.

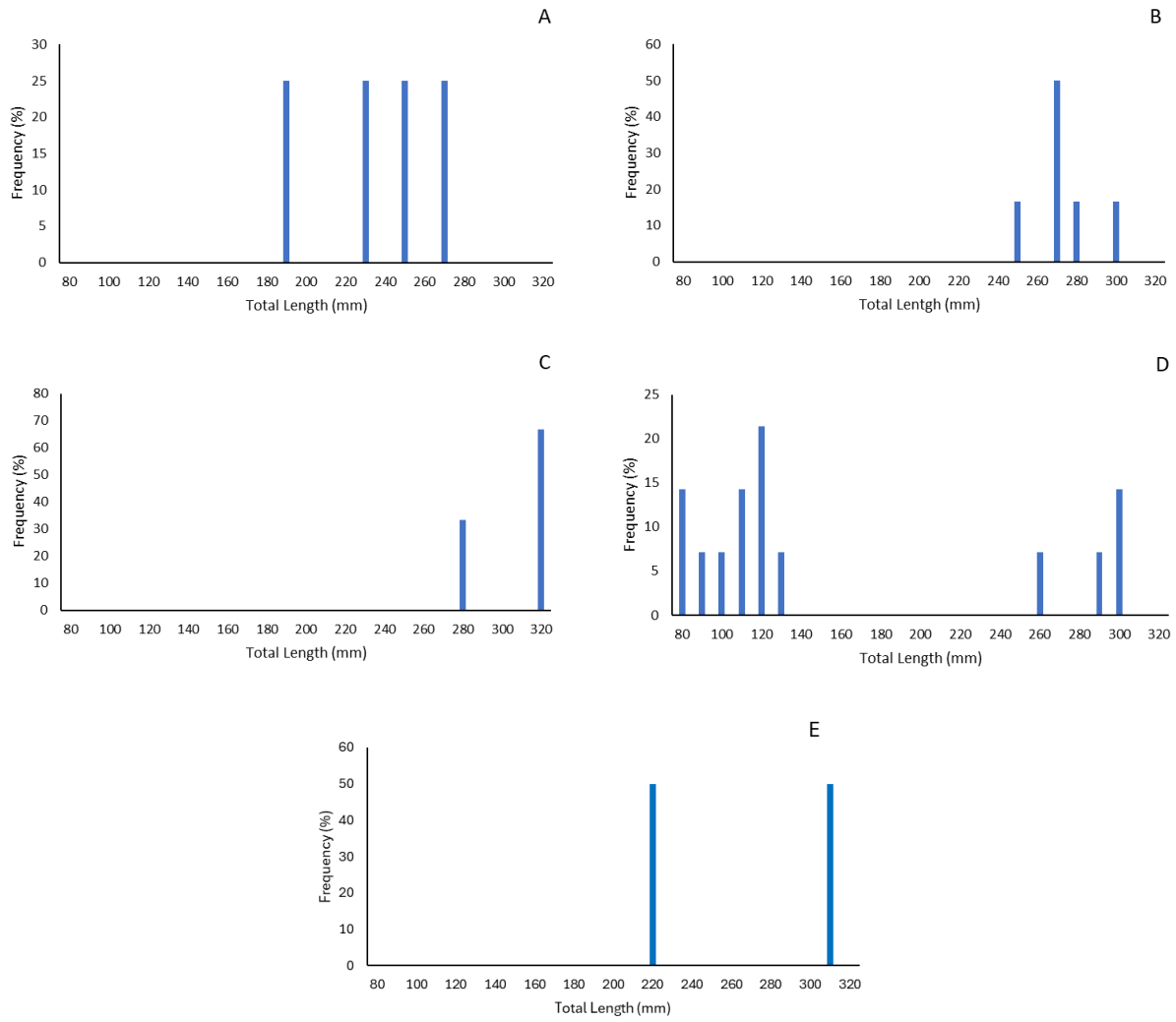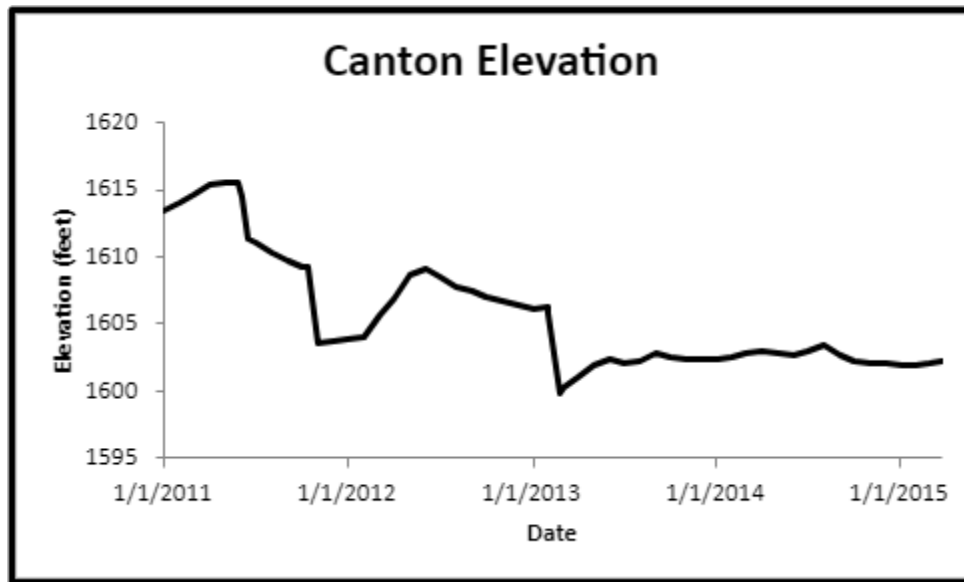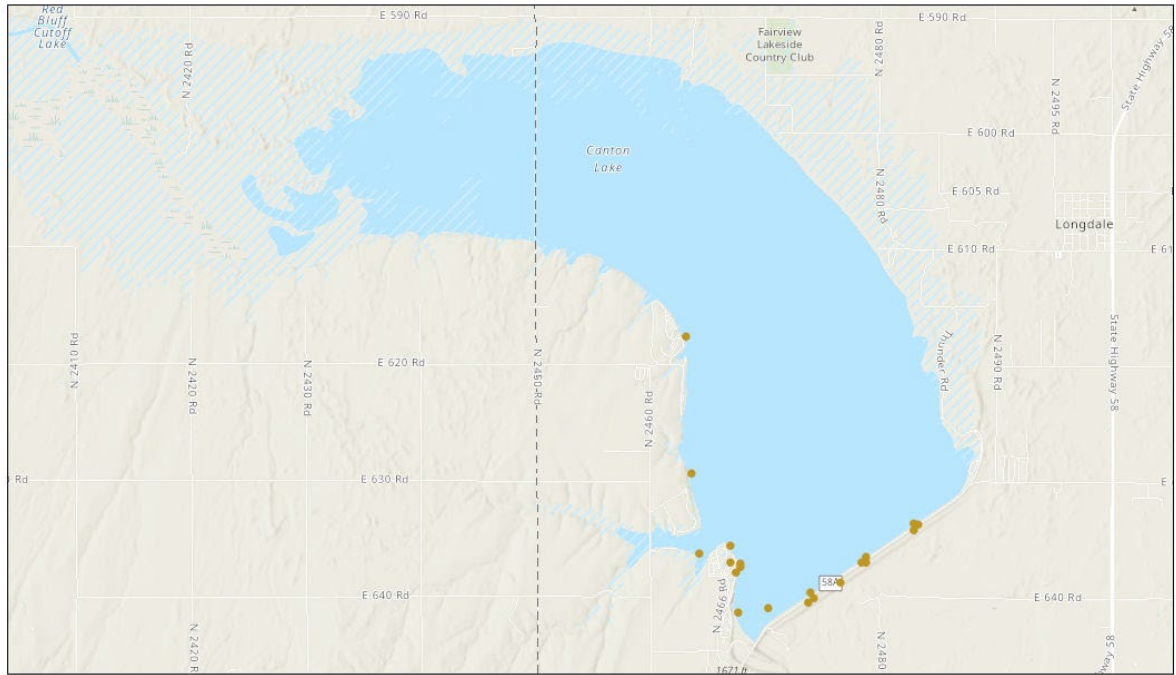| Year	PSD	PSD-P	PSD-M	PSD-T
2024	100	50	50	-
2022	100	100	67	-
2021	100	100	17	-
2020	100	50	-	-
2019	88	12	-	-
2017	100	25	12	12

Figure 6: Black Crappie Length Frequencies for Canton Lake 2020(A), 2021(B), 2022(C), 2023(D), and 2024(E).

Appendix 1

Canton Lake Fish Attractors
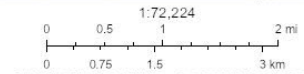

10/19/2023, 10:16:15 AM

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

1:72,224

0   0.5   1   2 mi
0   0.75   1.5   3 km

Esri, NASA, NGA, USGS, FEMA, Texas Parks & Wildlife, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA

Web AppBuilder for ArcGIS

Esri, NASA, NGA, USGS, FEMA | Texas Parks & Wildlife, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA |

Appendix 2

Year	Species	Number	Size(mm)
2014	Walleye	2,050,000	6.35
	Hybrid S.B.	3,478	38.1
2015	Walleye	2,000,000	6.35
	Hybrid S.B.	700,000	6.35
	Hybrid S.B.	21,120	38.1
2016	Walleye	2,200,000	6.35
	Walleye	129,960	38.1
	Hybrid S.B.	54,040	44.45
2017	Walleye	3,160,000	6.35
2018	Walleye	4,339,000	6.35
	Walleye	39,270	31.75
	Redear SF	256,560	19.05
2019	Walleye	4,931,071	6.35
	Hybrid S.B.	39,550	38.1
	Redear SF	157,560	31.75
2020	Hybrid S.B.	41,776	43.18
	Redear SF	71,550	38.1
2021	Walleye	4,195,119	6.35
	Striped Bass	250,000	6.35
	Hybrid S.F.	44,550	38.1
2022	Walleye	4,128,074	6.35
	Walleye	111,190	38.1
2023	Walleye	5,193,950	6.35
	Hybrid S.B.	40,508	44.45
2024	Walleye	4,300,000	6.35
	Walleye	93,951	35.56

Appendix 3