SURVEY REPORT

OKLAHOMA DEPARTMENT OF WILDLIFE CONSERVATION

FISH MANAGEMENT SURVEY AND RECOMMENDATIONS

FOR

Copan Lake

2024

SURVEY REPORT

State: Oklahoma

Project Title: Oklahoma Fisheries Management Program

Study Title: Surveys and Recommendations – Copan Lake

Period Covered: 1 January 2024 – 31 December 2024

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Date Prepared: November 2024

Copan Lake

ABSTRACT

Copan Lake was sampled in 2024 by fall gill netting to assess conditions, channel catfish and crappie condition and population trends, as well as assessment of fish community in the lake. Fall gill netting showed similar catch to previous years for white crappie, blue catfish, channel catfish and white bass. Crappie catch rates have remained stable, with the potential for large individuals being present. White bass and blue catfish catch rates are like previous samples but are trending down. Channel Catfish catch rates are trending up. Channel catfish and blue catfish are growing to moderate sizes and should provide adequate fishing opportunities. The abundance of crappie at Copan Lake is not great, but the potential for memorable and trophy fish is present.

INTRODUCTION

Copan Lake impounds the Little Caney River in Washington County, Oklahoma. Copan Lake covers 4850 surface acres and was constructed in 1972 by the Army Corps of Engineers. The lake has a mean depth of 7.9 ft and a maximum depth of 37 ft, a shoreline development ratio of 5.5, and a secchi disk visibility of around 17 inches in the main pool. The lake is classified as moderately turbid. Fish habitat consists primarily of aquatic vegetation, flooded timber, and rock. The major fisheries are Largemouth Bass, Crappie, Channel Catfish, and Blue Catfish.

Prior to this report Copan Lake was most recently sampled by fall experimental gill netting in 2021 to assess population trends and fish condition. Other recent samples include spring shoreline electrofishing in 2018 to monitor black bass population trends and fall trap netting for Crappie population age, growth, and mortality assessment in 2018.

RESULTS

Crappie

1. Crappie were sampled in 2024 by fall experimental gill netting to determine population trends and condition. Catch rates were similar to previous samples. Catch rate (C/f) for crappie in 2024 was 6.27 and was above the threshold for a quality fishery (C/f = 4.8) and was similar to previous samples (Table 2, Figure 3). It should be noted that gill net samples are not always the most reliable method for determining overall crappie abundance but an indicator of population trends.
2. Relative weights were adequate for all sizes, and overall was 103 (Table 2).
3. Copan Lake has a high number of small crappie; very few "keeper" sized crappie, but does have a few very large memorable sized crappie. This could be a good location for anglers looking to catch a very large fish, but may not catch great numbers of any size.

Channel Catfish

1. Channel Catfish were sampled in 2024 by fall experimental gill netting to determine population trends and condition. Catch rates (C/f = 5.17) was above the acceptable value for a quality fishery and slightly higher than previous samples (Table 2, Figure 3).
2. Overall relative weight was 85, was lower than average, and was lower than previous samples.
3. Most of the Channel Catfish in Copan Lake are between 12 and 15 inches, and could provide an adequate fishing experience.

Blue Catfish

1. Blue Catfish were sampled in 2024 by fall experimental gill netting to determine population trends and condition. Catch rates (C/f = 6.12) was above the acceptable value for a quality fishery, was lower than previous samples (Table 3, Figure 5).
2. Overall relative weight was 89, was near average, and was lower than previous samples.
3. Most of the Blue Catfish in Copan Lake are between 12 and 15 inches with a few individuals reach 20+ inches, and could provide an adequate fishing experience.
4. Blue Catfish are a popular sport fish in Copan Lake and these trends should continue to be monitored.

White Bass

1. White Bass were sampled in 2024 by fall experimental gill netting to determine population trends and condition. Catch rates (C/f) for White Bass in 2024 (C/f = 2.15) and were lower than the previous sample.
2. Relative weights for all size groups were above the acceptable value (Table 7), and overall were 95. This was also a decrease in relative weights at all sizes and overall.

Shad

1. Gizzard Shad were last sampled by experimental gill netting in 2024 to determine population trends. Catch rates for Gizzard Shad (C/f = 14.92; Table 5). Shad are still very abundant in Copan Lake.
2. Gizzard Shad populations are known to fluctuate dramatically within reservoirs and usually not a concern unless there are multiple consecutive samples with below acceptable catch rates or sportfish populations are suffering from low W_r.
3. Since Gizzard Shad is the dominant forage for most sportfish in Copan Lake, sampling will continue in 2026 to continue monitoring population trends.

Summary

1. Copan Lake has been extremely low prior to this sample. Most species appear to have lower catch rates and lower relative weights than in previous samples. This could likely be attributed to low water levels and warm temperature. Efforts should be made to continue monitoring these populations to evaluate if trends rebound at the next sampling event.

RECOMMENDATIONS

Fish Stockings

1. No new fish stockings are currently recommended.

Fish Surveys

1. Electrofishing surveys should be conducted in 2026 and again within five years after that to monitor potential changes in the population.
2. Continue with fall experimental gill net surveys twice within the next five years to continue monitoring crappie, Channel Catfish and Blue Catifsh populations.
3. Continue with fall trap net surveys again within the next five years to continue monitoring crappie growth rates and mortality rates.

Table 1. Total number (No.), catch rates (C/f), and relative weights (Wr) by size groups of **White Crappie** collected by fall gill netting from Copan Lake. Numbers in parentheses represent acceptable C/f values for a quality fishery. Acceptable Wr values are ≥90.

	Total (≥4.8)			**Stock (1.2-7.2)**		**Quality (1.9)**		**Preferred or larger (>1.0)**	
Year	**No.**	**C/f**	**W_r**	**C/f**	**W_r**	**C/f**	**W_r**	**C/f**	**W_r**
2014	41	4.36	91	1.16	88	2.36	91	.42	84
2016	82	8.56	90	1.77	82	4.59	92	1.04	95
2018	66	7.16	97	1.86	81	.65	88	2.33	105
2021	51	5.39	106	.63	94	1.68	107	1.32	108
2024	64	6.27	103	.69	95	.19	91	1.13	106

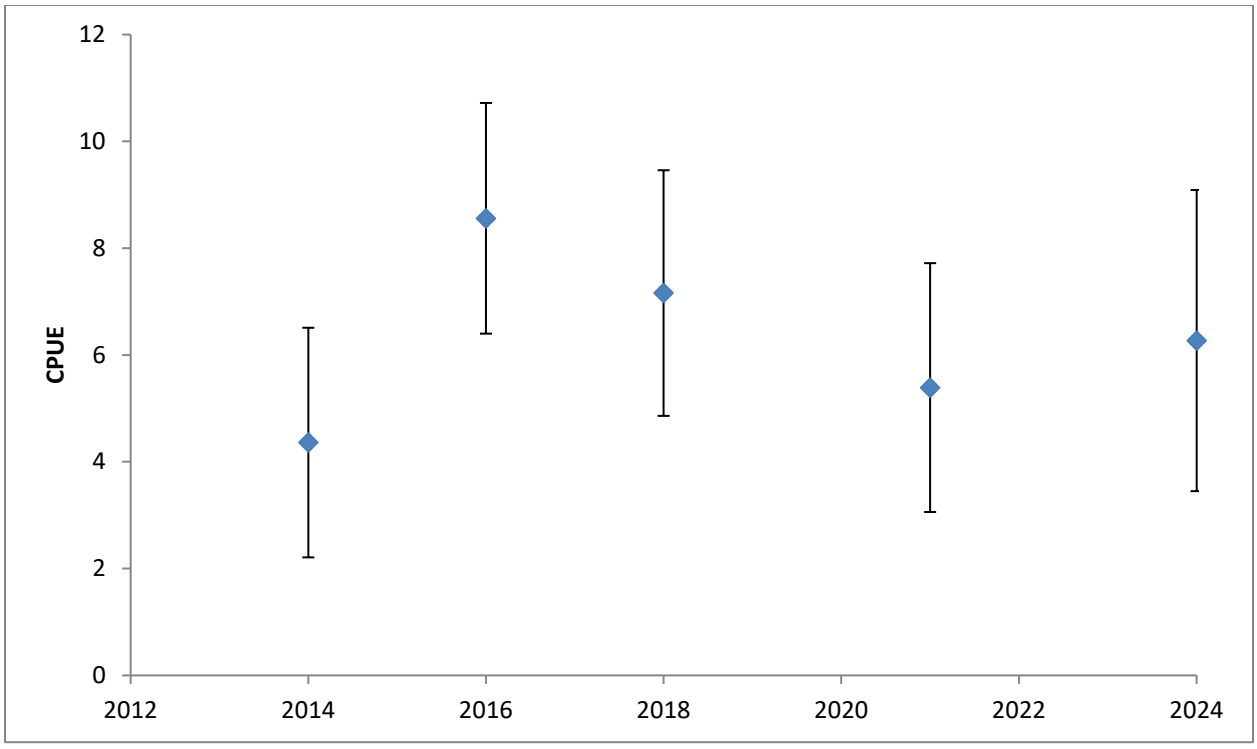

Figure 1. Total catch per unit effort (CPUE) for **White Crappie** in Copan Lake from fall experimental gill net surveys from 2014 – 2024.

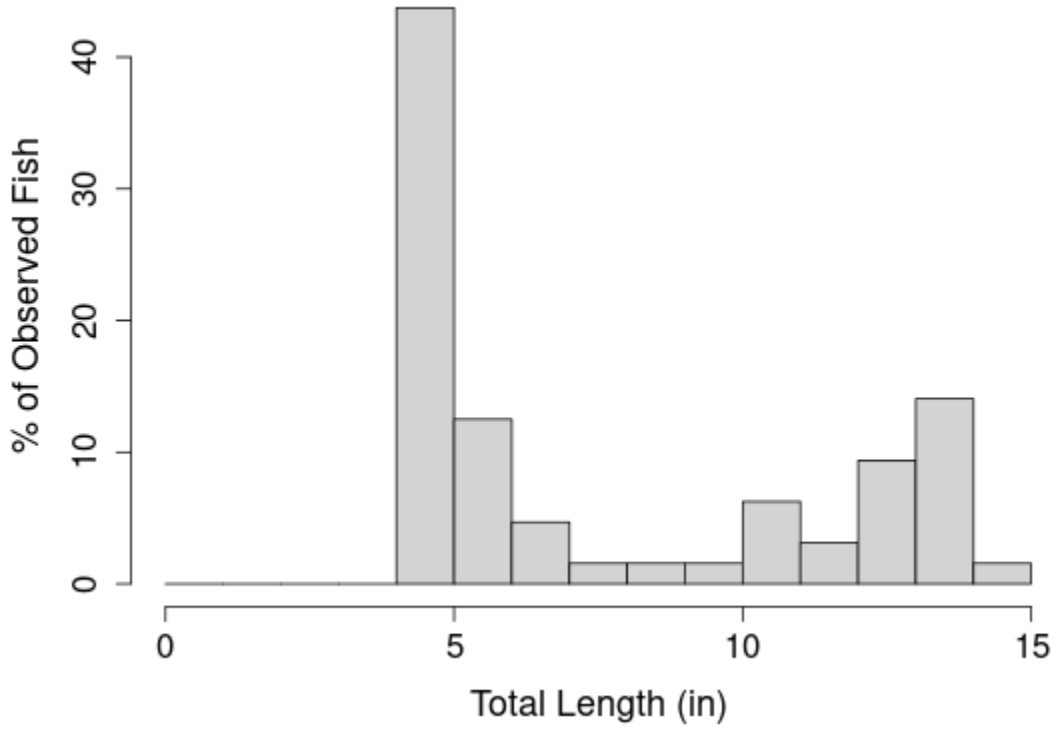

Figure 2. Length frequencies for **White Crappie** collected by fall experimental gill net survey from Copan Lake in 2024.

Table 2. Total number (No.), catch rates (C/f), and relative weights (W_r) by size groups of **Channel Catfish** collected by fall experimental gill netting from Copan Lake. Numbers in parentheses represent acceptable C/f values for a quality fishery. Acceptable W_r values are ≥90.

	Total (≥4.8)			**Stock (≥2.4)**		**Quality (≥2.4)**		**Preferred or larger (≥1.2)**	
Year	**No.**	**C/f**	**W_r**	**C/f**	**W_r**	**C/f**	**W_r**	**C/f**	**W_r**
2014	10	1.06	85	.32	82	.10	88	-	-
2016	10	1.04	83	.21	78	-	-	-	-
2018	22	2.44	102	1.12	124	.10	92	-	-
2021	39	4.12	90	1.69	91	.64	88	.10	92
2024	52	5.17	85	2.08	82	.41	86	-	-

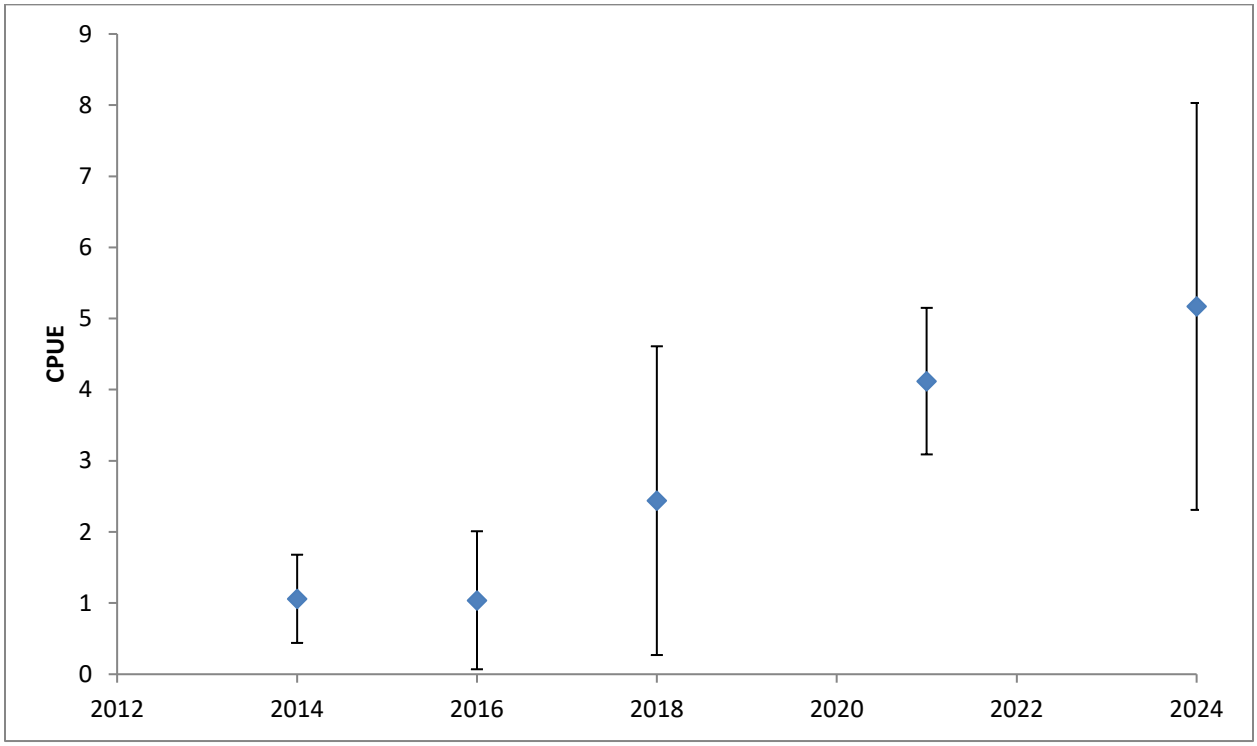

Figure 3. Total catch per unit effort (CPUE) for **Channel Catfish** in Copan Lake from fall experimental gill net surveys from 2014 – 2024.

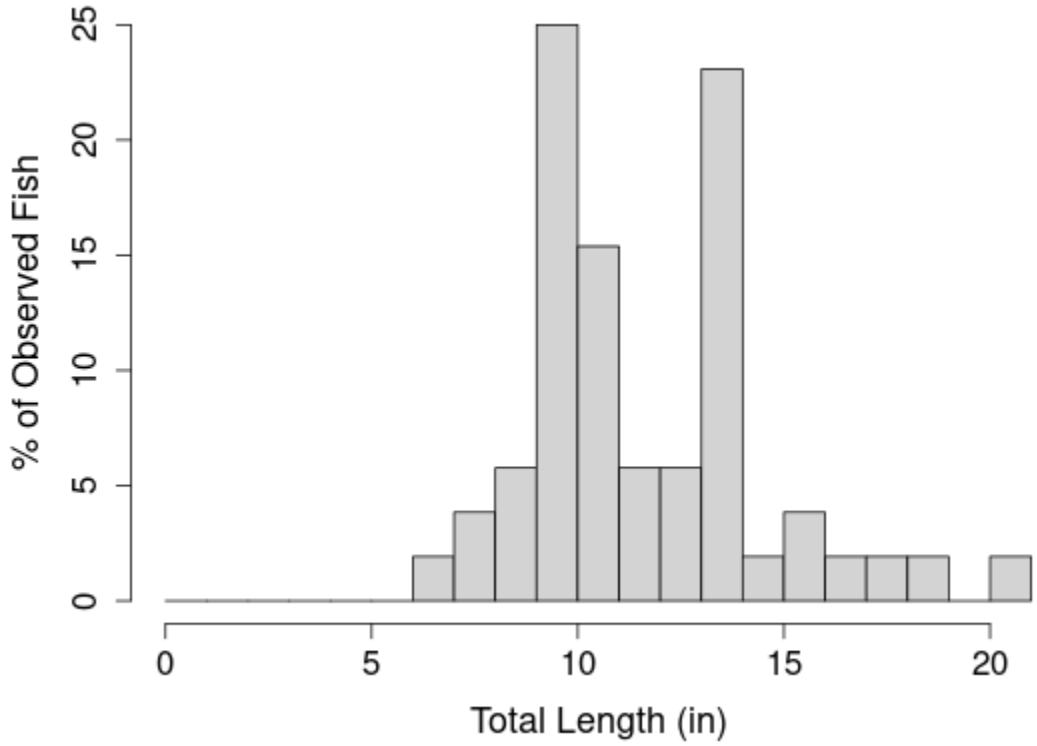

Figure 4. Length frequencies for **Channel Catfish** collected by fall experimental gill net survey from Copan Lake in 2024.

Table 3. Total number (No.), catch rates (C/f), and relative weights (W_r) by size groups of **Blue Catfish** collected by fall experimental gill netting from Copan Lake. Numbers in parentheses represent acceptable C/f values for a quality fishery. Acceptable W_r values are ≥90.

	Total			**Stock**		**Quality**		**Preferred or larger**	
Year	**No.**	**C/f**	**W_r**	**C/f**	**W_r**	**C/f**	**W_r**	**C/f**	**W_r**
2014	64	6.77	88	4.33	86	.42	86	-	-
2016	83	8.66	88	3.97	87	2.50	88	-	-
2018	136	14.85	91	9.29	91	1.99	93	-	-
2021	115	12.17	96	9.33	97	1.27	93	-	-
2024	61	6.12	89	3.52	90	1.17	90	-	-

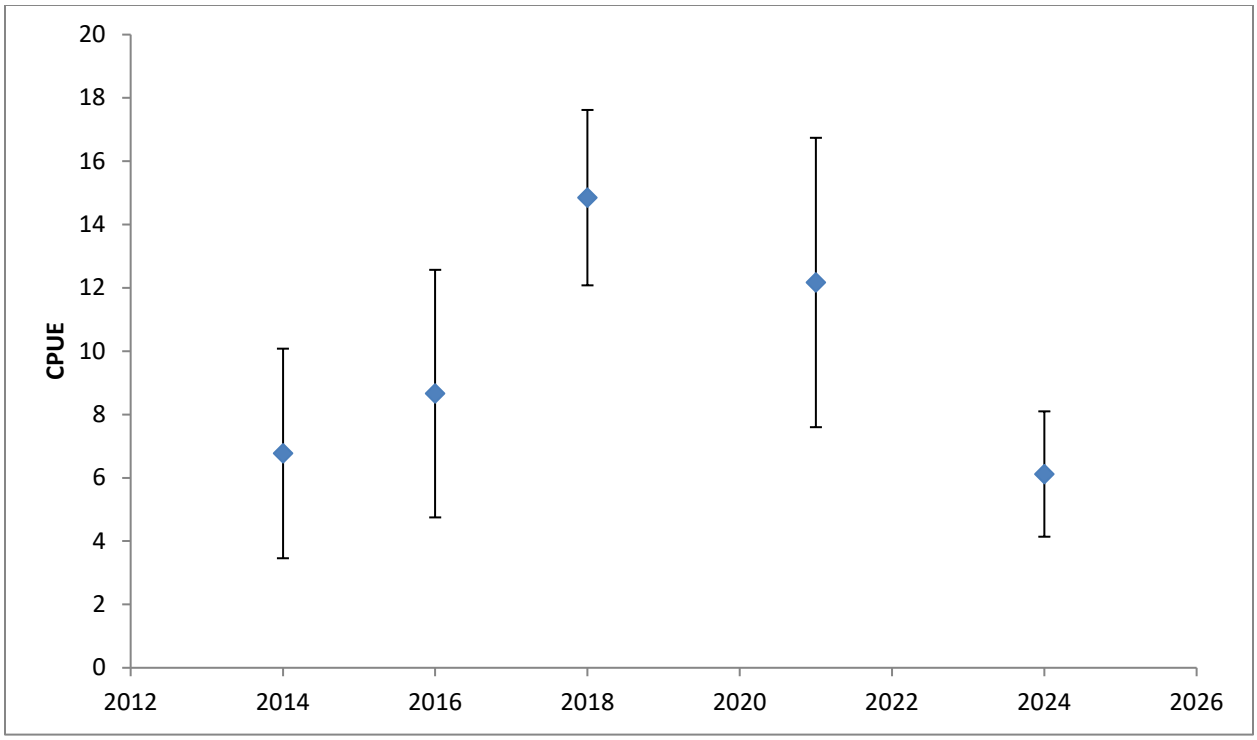

Figure 5. Total catch per unit effort (CPUE) for **Blue Catfish** in Copan Lake from fall experimental gill net surveys from 2014 – 2024.

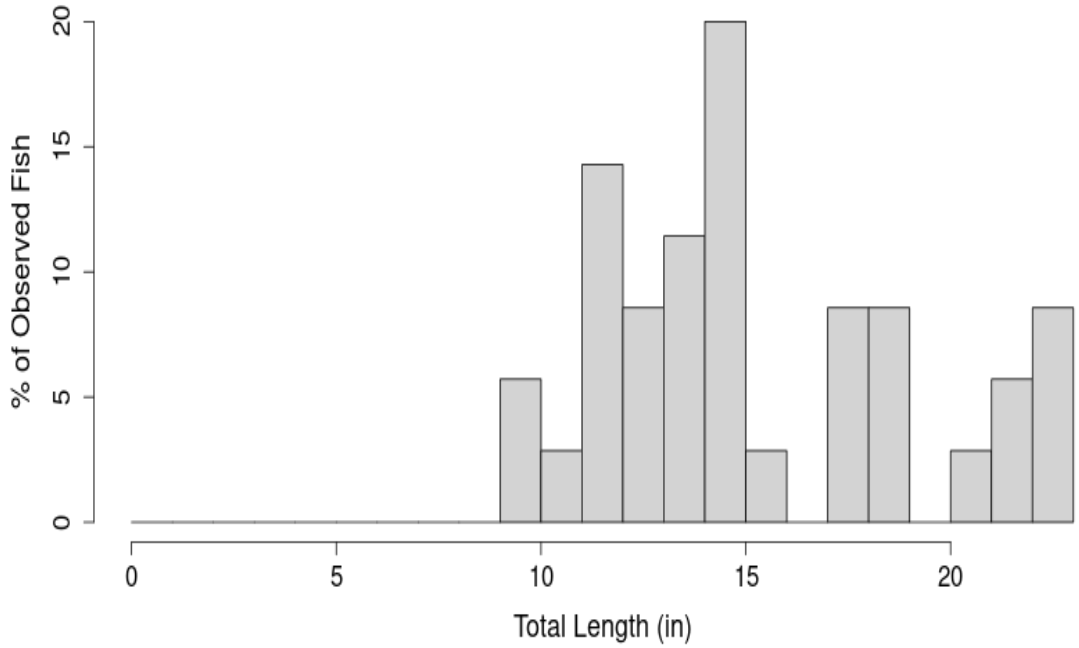

Figure 6. Length frequencies for **Blue Catfish** collected by fall experimental gill net survey from Copan Lake in 2024.

Table 4. Total number (No.), catch rates (C/f), and relative weights (W_r) by size groups of **White Bass** collected by fall gill netting from Copan Lake. Numbers in parentheses represent acceptable C/f values for a quality fishery. Acceptable W_r values are ≥90.

	Total (≥4.8)			Stock (1.2-7.2)		Quality (1.2-7.2)		Preferred or larger (>2.4)	
Year	No.	C/f	W_r	C/f	W_r	C/f	W_r	C/f	W_r
2014	34	3.58	98	1.06	98	.84	92	.78	103
2016	60	6.26	97	4.38	95	1.77	99	.10	116
2018	43	4.69	99	1.21	99	.97	99	.98	100
2021	83	8.85	108	1.39	107	1.71	109	5.75	108
2024	22	2.15	95	-	-	1.07	91	.54	98

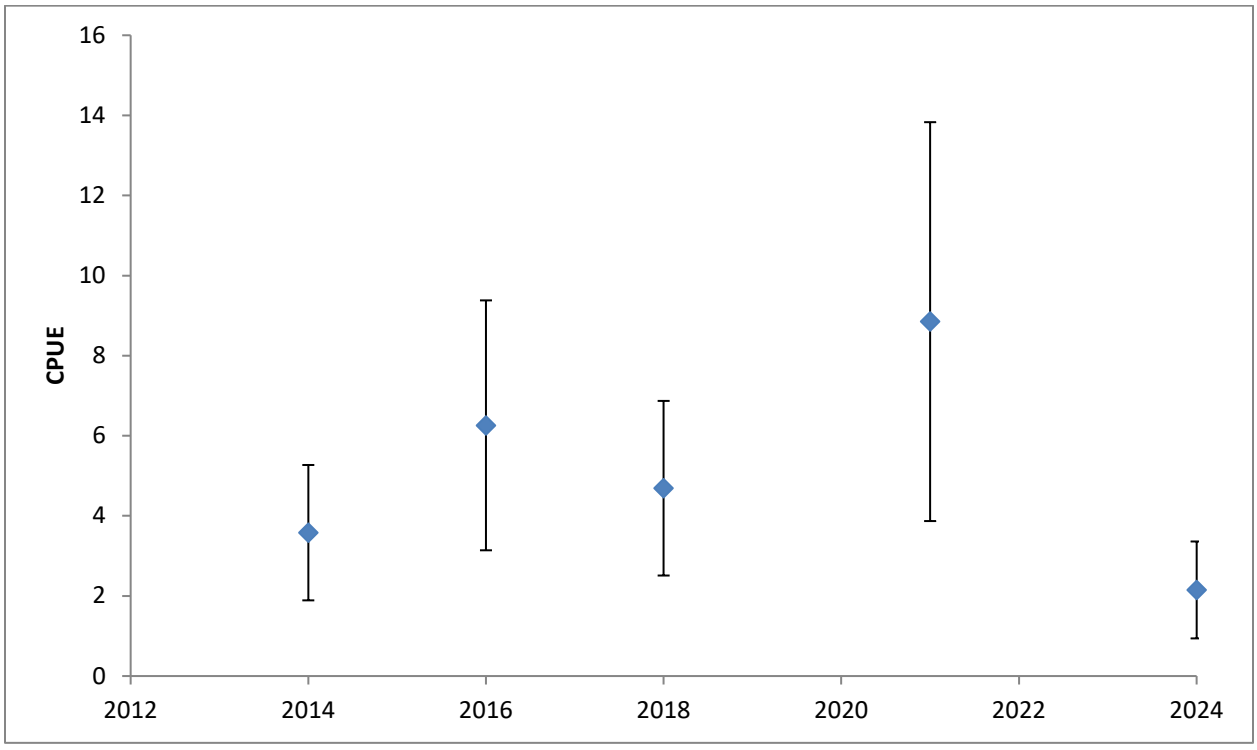

Figure 7. Total catch per unit effort (CPUE) for **White Bass** in Copan Lake from fall experimental gill net surveys from 2014 – 2024.

Table 5. Total number (No.), catch rates (C/f) **Gizzard Shad** collected by fall gill netting from Copan Lake. Numbers in parentheses represent acceptable C/f values for a quality fishery.

	Total (≥4.8)	
Year	**No.**	**C/f**
2014	53	5.58
2016	198	20.66
2018	145	15.77
2021	85	9.06
2024	152	14.92