

OKLAHOMA DEPARTMENT OF WILDLIFE CONSERVATION



FISH MANAGEMENT SURVEY REPORT

HEALDTON CITY LAKE

2025

EXECUTIVE SUMMARY

Gillnetting was conducted in fall of 2025 to evaluate the status of the crappie and saugeye fisheries at Healdton City Lake. Slow growing, stunted crappie were first noted in Healdton City Lake in 2005. This problem was addressed by stocking saugeye to biologically control the number of small crappie in the population.

Crappie catch rates have varied greatly across sampling years with the last survey in 2021 producing the highest recorded number of 32.4 fish/net-night compared to the lowest number recorded in 2025 with 7.7 fish/net-night (Table 1, Figure 1). However, 2025 produced the highest catch rate of crappie > 10 inches with 5.5 fish/net-night. Overall crappie relative weights were 101 and the highest recorded value. Crappie > 10 inches comprised 72% of the overall population resulting in exceptional PSD and PSD-P values (Figure 2, Table 2).

Recruitment appears to be consistent in recent years with contributions ranging from age-1 to age-5 individuals. Crappie growth rates in 2025 were exceptional and greatly exceeded the typical slow growth seen at Healdton City Lake in past decades (Table 3, Figure 3). Age-2 crappie averaged 11.1 inches and growth increases were noted in crappie ranging from 3 – 5 years old. It is difficult to determine the cause of this increase growth or to attribute it to the effect of saugeye as a biological control. However, the results are encouraging and the quality of the crappie population appears to be at a 20 year high. Mortality estimates (Table 4) for crappie at Healdton City Lake are highly variable and may not accurately reflect overall mortality rates.

Saugeye catch rates remain low and highly variable making trend assessments of the overall population difficult. However, catch rates in 2025 appear to fall within the range of fluctuation compared to past surveys (Table 5, Figure 4). Saugeye relative weight was 94 and has remained within acceptable levels across past surveys. Saugeye length frequency and Proportional Stock Density (PSD) metrics are included in Figure 5 and Table 6, respectively.

Saugeye growth rates are consistently above acceptable levels at Healdton City Lake and that trend continued in 2025. On average, saugeye reach 20 inches between years 2 and 3 (Table 7, Figure 6). Mortality estimates (Table 8) for saugeye at Healdton City Lake are highly variable and may not accurately reflect overall mortality rates. Historical stocking records are included in Table 9.

Table 1. Effort, overall fish per net night (CPUE), variability, relative weights (Wr), and CPUE by size groups of white crappie collected by gillnetting from Healdton City Lake.

Year	Net-nights	# Fish	Total CPUE	Range (U/L 95% CI)	RSE	Net-nights needed RSE = 20	Wr	CPUE < 5 in	CPUE ≥ 5 in	CPUE ≥ 10 in
2010	8	75	12.5	±3.5	14.4	4	94	1.0	11.5	4.7
2012	8	63	8.6	±5.0	29.4	17	98	1.0	7.6	2.9
2015	8	109	13.6	±2.9	10.9	2	96	0.3	13.4	3.1
2018	8	68	8.5	±3.1	18.3	7	93	-	8.5	3.1
2021	8	236	32.4	±13.6	21.4	9	97	2.3	30.1	2.6
2025	8	57	7.7	±2.0	13.1	3	101	-	7.7	5.5

Figure 1. Fish per net night (CPUE) trend data for white crappie and white crappie greater than 10 inches collected by gillnetting from Healdton City Lake. Error bars represent standard error estimates.

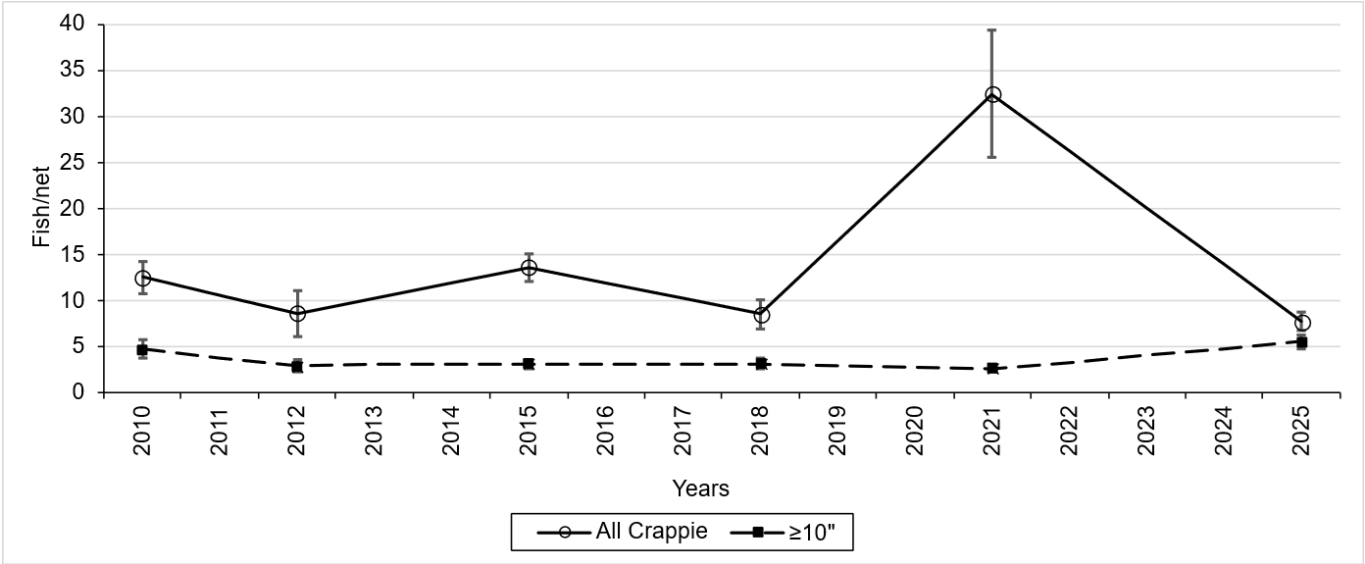


Figure 2. 2025 length frequency distribution for white crappie collected by gillnetting at Healdton City Lake. N = 57.

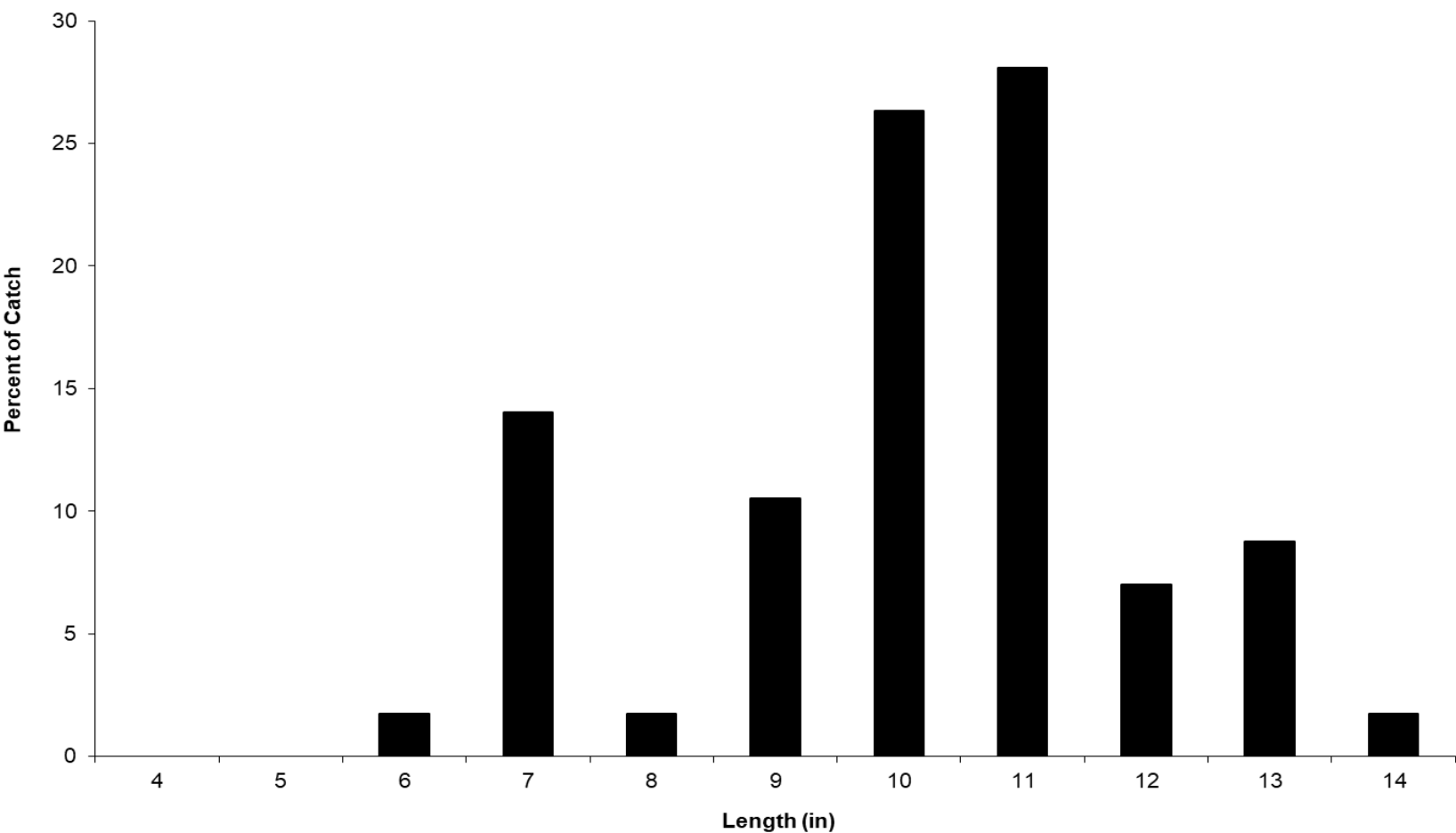


Table 2. Proportional Stock Density (PSD) categories and PSD metrics and variability for white crappie collected by gillnetting from Healdton City Lake.

Category	Stock	Quality	Preferred	Memorable	Trophy
Size (in)	5.1	7.9	9.8	11.8	15.0

Year	PSD	Range (U/L 95% CI)	PSD-P	Range (U/L 95% CI)	PSD-M	Range (U/L 95% CI)	PSD-T	Range (U/L 95% CI)
2010	53	±17	43	±17	34	±16	-	-
2012	53	±21	42	±21	25	±19	4	±7
2015	58	±13	26	±12	3	±4	-	-
2018	39	±17	37	±16	21	±14	-	-
2021	10	±7	10	±7	8	±6	1	±1
2025	86	±13	74	±17	18	±16	-	-

Table 3. Number of white crappie, mean length at age, and variability of white crappie collected by gillnetting from Healdton City Lake.

Year	# Aged	# Fish with Length-Age Key	Age-1 (N)	Range (U/L 95% CI)	Age-2 (N)	Range (U/L 95% CI)	Age-3 (N)	Range (U/L 95% CI)	Age-4 (N)	Range (U/L 95% CI)	Age-5 (N)	Range (U/L 95% CI)
2010	68	75	5.1 (3)	±0.3	5.7 (19)	±0.4	8.4 (16)	±0.9	9.5 (20)	±1.3	12.8 (7)	±0.7
2012	39	63	-	-	6.1 (41)	±0.6	9.9 (10)	±1.5	12.5 (1)	-	-	-
2015	86	107	8.2 (102)	±0.4	11.7 (2)	±0.1	12.3 (3)	±0.0	-	-	-	-
2018	64	67	5.5 (6)	±0.3	6.8 (20)	±0.7	9.0 (23)	±1.1	10.7 (18)	±1.2	-	-
2021	71	235	5.2 (179)	±0.0	6.5 (27)	±0.2	9.1 (18)	±1.2	-	-	12.2 (6)	±0.6
2025	57	57	8.9 (22)	±0.6	11.1 (25)	±0.3	12.8 (7)	±0.6	13.5 (1)	-	13.7 (2)	±0.8

Figure 3. 2025 Length at age data for white crappie collected from Healdton City Lake by fall gillnetting.

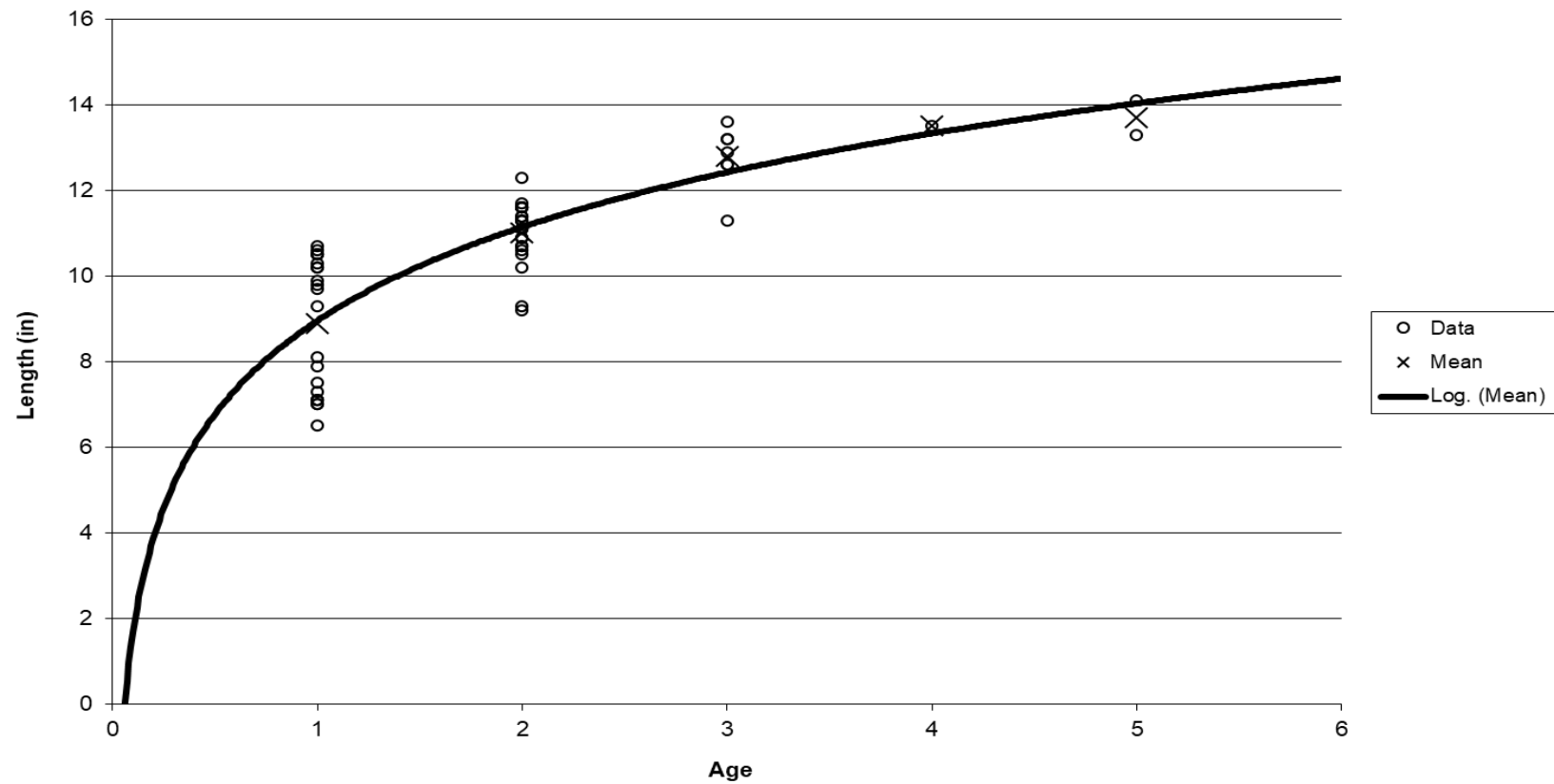


Table 4. Mortality estimates, variability, and maximum observed age of white crappie collected by gillnetting from Healdton City Lake.

Year	Annual Mortality	Lower 95% CI	Upper 95% CI	Observed Max Age
2010	29.6	-7802	99	6
2012	29.4	-22	-59	8
2015	89.6	-29982241	100	3
2018	20.8	-	-	4
2021	49.6	28	65	7
2025	62.0	-13	87	5

Table 5. Effort, overall fish per net night (CPUE), variability, relative weights (Wr), and CPUE by size groups of saugeye collected by gillnetting from Healdton City Lake.

Year	Net-nights	# Fish	Total CPUE	Range (U/L 95% CI)	RSE	Net-nights needed RSE = 20	Wr	CPUE < 14 in	CPUE ≥ 14 in	CPUE ≥ 18 in
2010	8	16	2.7	±1.5	28.4	16	97	-	2.7	0.8
2012	8	20	2.7	±1.0	18.5	7	102	-	2.7	1.9
2015	8	11	1.4	±0.7	27.3	15	99	1.3	0.1	0.1
2018	8	24	3.0	±1.2	19.9	8	101	-	3.0	3.0
2021	8	8	1.1	±0.9	42.3	36	95	0.1	1	0.7
2025	8	11	1.5	±1.1	38.6	30	94	-	1.5	0.5

Figure 4. Fish per net night (CPUE) trend data for saugeye and saugeye greater than 18 inches collected by gillnetting from Healdton City Lake. Error bars represent standard error estimates.

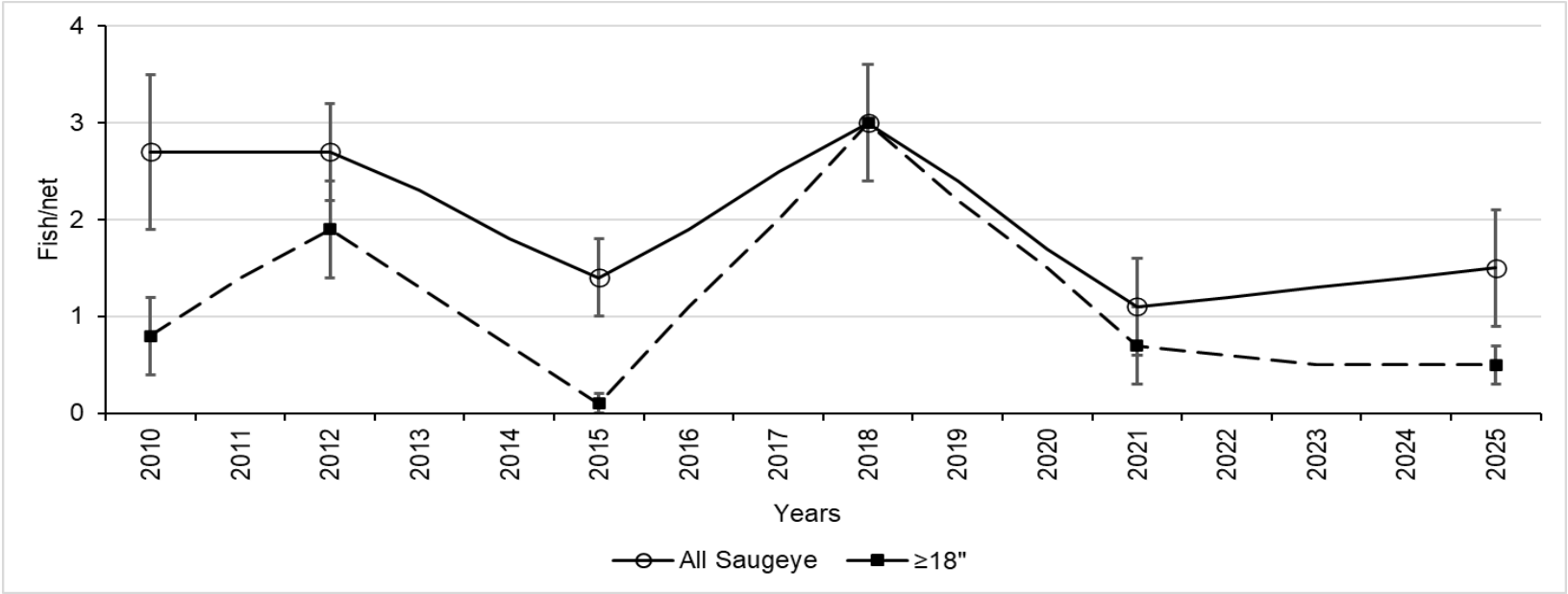


Figure 5. 2025 length frequency distribution for saugeye collected by gillnetting at Healdton City Lake. N = 11.

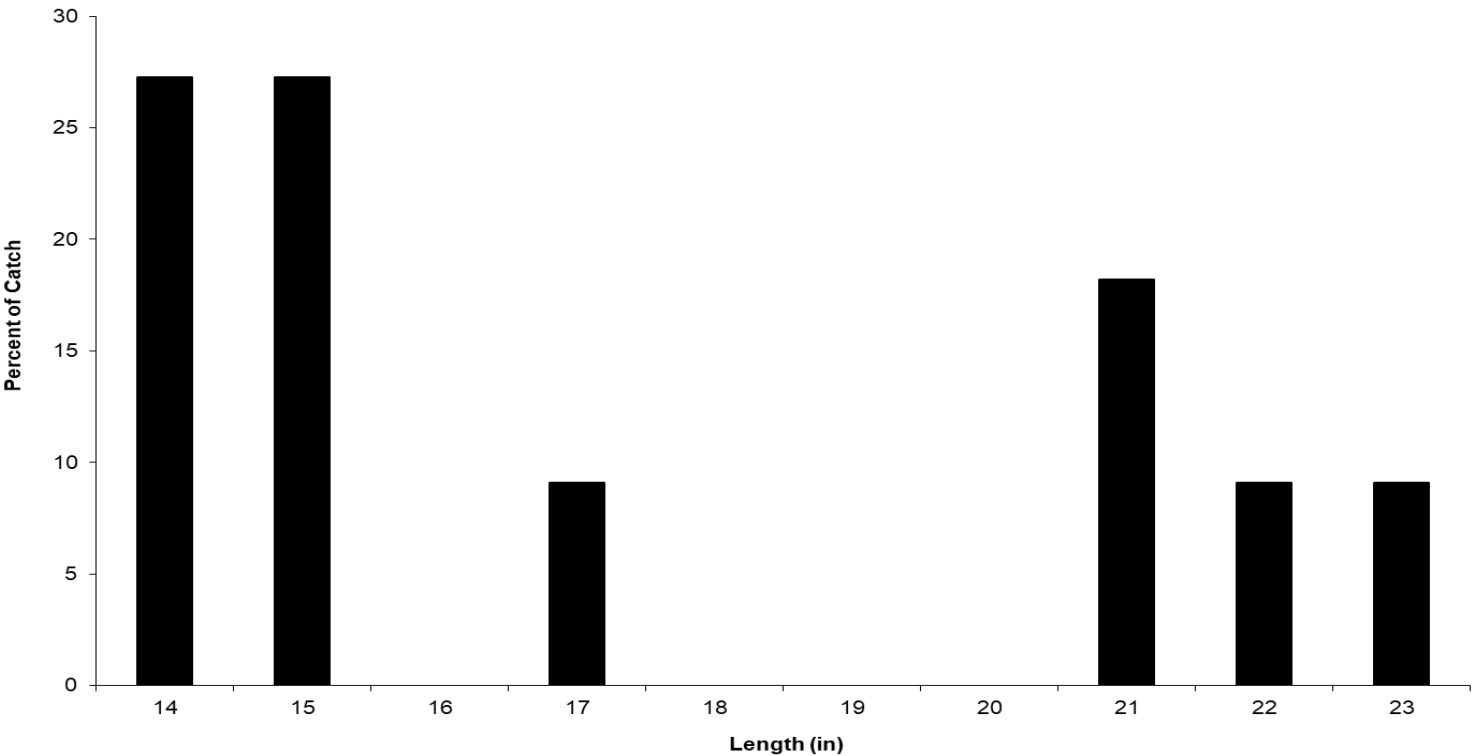


Table 6. Proportional Stock Density (PSD) categories and PSD metrics and variability for saugeye collected by gillnetting from Healdton City Lake.

Category	Stock	Quality	Preferred	Memorable	Trophy
Size (in)	9.1	13.8	18.1	22	27.2

Year	PSD	Range (U/L 95% CI)	PSD-P	Range (U/L 95% CI)	PSD-M	Range (U/L 95% CI)	PSD-T	Range (U/L 95% CI)
2010	100	-	31	±23	-	-	-	-
2012	100	-	70	±25	40	±27	-	-
2015	10	±19	10	±19	-	-	-	-
2018	100	-	100	-	33	±19	-	-
2021	88	±33	62	±47	25	±43	-	-
2025	100	-	36	±36	18	±29	-	-

Table 7. Number of saugeye, mean length at age, and variability of saugeye collected by gillnetting from Healdton City Lake.

Year	# Aged	# Fish with Length-Age Key	Age-0 (N)	Range (U/L 95% CI)	Age-1 (N)	Range (U/L 95% CI)	Age-2 (N)	Range (U/L 95% CI)	Age-3 (N)	Range (U/L 95% CI)	Age-4 (N)	Range (U/L 95% CI)	Age-5 (N)	Range (U/L 95% CI)	Age-6 (N)
2010	16	16	-	-	15.4 (8)	±0.7	18.5 (8)	±1.2	-	-	-	-	-	-	-
2012	20	20	-	-	15.5 (6)	±0.6	-	-	22.3 (9)	±0.5	22.3 (5)	±1.2	-	-	-
2015	11	11	10.5 (10)	±0.8	-	-	-	-	-	-	22.0 (1)	-	-	-	-
2018	24	24	-	-	-	-	19.4 (6)	±0.6	21.7 (18)	±0.6	-	-	-	-	-
2021	8	8	9.9 (1)	-	-	-	18.9 (4)	±1.7	-	-	-	-	22.9 (2)	±1.8	24.2 (1)
2025	11	11	-	-	15.4 (7)	±0.8	-	-	21.3 (1)	-	22.9 (2)	±0.7	-	-	21.5 (1)

Figure 6. 2025 Length at age data for saugeye collected from Healdton City Lake by fall gillnetting.

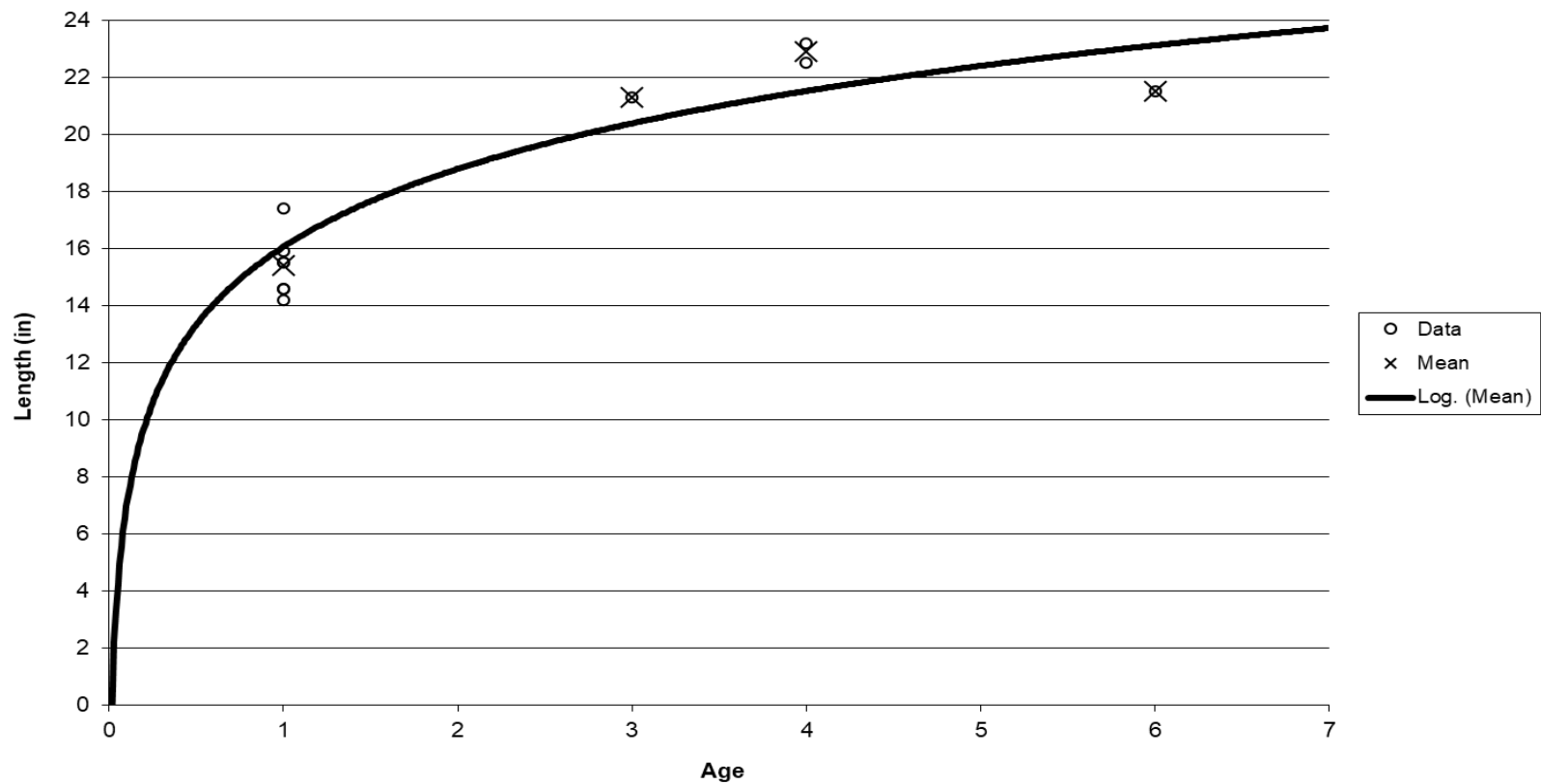


Table 8. Mortality estimates, variability, and maximum observed age of saugeye collected by gillnetting from Healdton City Lake.

Year	Annual Mortality	Lower 95% CI	Upper 95% CI	Observed Max Age
2010	-	-	-	2
2012	40	-	-	4
2015	-	-	-	3
2018	-	-	-	3
2021	18.8	-36	52	6
2025	26.7	-40	62	6

Table 9. Species, number and size of fish stocked in Healdton City Lake from 1980 to 2025.

DATE	SPECIES	NUMBER	SIZE
1980	Largemouth bass	7,623	Fingerlings
1980	Florida largemouth	7,500	Fingerlings
1985	Channel catfish	7,418	Fingerlings
1986	Channel catfish	7,135	Fingerlings
1987	Channel catfish	2,200	Fingerlings
1987	Grass carp	818	Sub-adults
1988	Channel catfish	4,469	Fingerlings
1989	Grass carp	547	Sub-adults
1992	Threadfin shad	3,000	Adults
1992	Channel catfish	17,800	Fingerlings
1996	Cert. Florida LMB	7,200	Fingerlings
1997	Cert. Florida LMB	7,200	Fingerlings
1998	Cert. Florida LMB	3,607	Fingerlings
2005	Cert. Florida LMB	5,923	Fingerlings
2006	Saugeye	18,676	Fingerlings
2008	Saugeye	17,500	Fingerlings
2009	Saugeye	18,756	Fingerlings
2011	Saugeye	18,600	Fingerlings
2013	Saugeye	18,500	Fingerlings
2015	Saugeye	20,460	Fingerlings
2016	Saugeye	31,680	Fingerlings
2018	Saugeye	37,123	Fry
2019	Saugeye	93,240	Fry
2019	Saugeye	9,638	Fingerlings
2021	Saugeye	??	??
2022	Saugeye	21,195	Fingerlings
2024	Saugeye	18,863	Fingerlings