

Performance Report

State: Oklahoma

Project Title: Fisheries Management Survey

Southwest Region Fisheries Management

Tom Steed Lake

Abstract

Tom Steed Lake was surveyed via low frequency electrofishing in 2025 to better understand the population structure and dynamics of the Blue and Flathead Catfish fishery. This method of sampling in conjunction with gill netting allows us to evaluate the fishery for needs and possible improvements to the lake. Tom Steed Lake was last sampled specifically for catfish by electrofishing in 2011 but is sampled on a rotational basis with gill nets for supplemental catfish data. The need to sample this lake was a priority for 2025 to maintain up-to-date baseline data for future management goals.

Introduction

Tom Steed Lake is a large impoundment (6400 acres) located north of Snyder Oklahoma that is operated by the Bureau of Reclamation for water storage for the City of Altus and as a recreation area. Tom Steed was developed as a water supply for local municipalities and agriculture based practices while also supporting recreational activities which include a state park and wildlife management areas. This lake project was funded and built in 1975 by the damming of West Otter Creek and other small tributaries in the Mountain Park area.

The main objective is to provide a quality fishery for anglers in Southwest Oklahoma by means of best management practices. In the past 5 years we have completed two habitat project that include sinking of ~50 cedar trees throughout the lake and 30 spider blocks around the fishing dock. Tom Steed Lake is known to be a quality Saugeye, Hybrid Striped Bass, Blue Catfish, and Crappie fishery. The management goals of continuing a quality fishery include yearly stocking of saugeye (fry and fingerlings) and Hybrid Striped Bass.

Results

Our electrofishing samples were conducted in September of 2025 when water temperatures were 74°F and consistent with our low frequency electrofishing catfish standard sampling protocols (SSP). Being a larger lake, we needed ample sample sites to incorporate all available habitats and within SSP methodology, samples consisted of 9 sites with each timed site being a 5 minute units of effort that included flats, shallow, drops, timber, channel lines and near structures consistent of 8-14 feet deep. In the duration of the 45 minutes of sampling we collected a total of 298 Blue Catfish and 18 Flathead

Catfish. The sample sites were randomly selected throughout the lake and set accordingly to weather conditions for that day and following days.

Samples conducted at Tom Steed were focused on Blue and Flathead Catfish while excluding Channel Catfish. Electrofishing samples are measured in catch per unit effort (CPUE) and were extrapolated to each species to get a representation for abundance with 397 bluecatfish/hour and 24 flatheadcatfish/hour CPUE (Figure 1). The overall catch rates were moderate compared to other lakes in southwest Oklahoma. When measuring fish body condition (body mass/length) relative weight (Wr) is the metric that is used to describe how fit individuals are in a population; relative weight for Blue Catfish= 95 and Flathead Catfish= 91 (Figure 3) which is acceptable level to population present with an above average condition showing good growth of individuals. When taking all the previous metrics into consideration a conclusion that can be seen is Tom Steed reservoir is maintaining a healthy and sustainable catfish population.

The length frequency of fish (Figure 2) was normally distributed and having a higher abundance of Blue Catfish over the 15" range but also showing good recruitment of smaller fish, Flatheads reflect typical trends seen elsewhere with higher numbers of small individuals but also showing larger individuals present. Age and growth data was not collected for any catfish species while conducting samples but used PSD metrics to help determine growth among size distributions, both Blue and Flathead Catfish showed to have an abnormally high percentage of stock-quality size fish which follow trends of good up and coming cohorts of sustainable fish. When pairing relative weights, growth rates, and forage base Tom Steed is a healthy fishery with optimum potential for a sustainable catfish fishery in the future.

Since we have sampled, a follow up sampling plan for every 5 years needs to be implemented with substitutional sample methods (electrofishing, gill netting) since it's a priority and trophy fishery. A routine gill net sampling rotation is currently in place with all sportfish being sampled every 3-5 years which allows us to have supplemental data for all catfish present. This lake has the potential to remain a sought after fishery in southwest Oklahoma with the continuation of stocking regimes and improvement on habitats available. One such aspect that can be a leading factor with a quality catfish fishery is desirable habitats that are present (large rock and boulders) and a large forage base. The best management plan should utilize the forage present, provide more habitats, and sample routinely for stocking recommendations in order to create a quality fishery.

Catch per Unit Effort								
Total CPUE								
Species	Mean (fish/hr)	# of Samples	RSE	SE	L 95% CI	U 95% CI	N RSE = 12.5 (25% range)	N RSE = 20 (40% range)
Blue Catfish	397.33	9	15.70	62.40	275.03	519.64	14	6
Flathead Catfish	24.00	9	48.59	11.66	1.14	46.86	136	53

CPUE by PSD Size Category								
Species	Size Category	Mean (fish/hr)	RSE	SE	L 95% CI	U 95% CI	N RSE = 12.5 (25% range)	N RSE = 20 (40% range)
Blue Catfish	< Stock	44.00	46.13	20.30	4.22	83.78	123	48
Blue Catfish	S-Q	256.00	18.67	47.79	162.33	349.67	20	8
Blue Catfish	Q-P	97.33	24.44	23.79	50.71	143.95	34	13
Blue Catfish	P-M	0.00						
Blue Catfish	M-T	0.00						
Blue Catfish	Trophy+	0.00						
Flathead Catfish	< Stock	10.67	73.69	7.86	-4.74	26.07	313	122
Flathead Catfish	S-Q	9.33	46.84	4.37	0.76	17.90	126	49
Flathead Catfish	Q-P	2.67	100.00	2.67	-2.56	7.89	576	225
Flathead Catfish	P-M	0.00						
Flathead Catfish	M-T	1.33	100.00	1.33	-1.28	3.95	576	225
Flathead Catfish	Trophy+	0.00						

Sample Size and Effort			
Sample Sizes			
Species	# of fish		
Blue Catfish	298		
Flathead Catfish	18		
Total Effort			
Gear Code	Gear Name	Total effort (min)	# Stations
98	Electrofishing - flathead/blue catfish	45.0	9

Figure 1: Catch per unit effort and sample effort for Tom Steed 2025 Catfish electrofishing

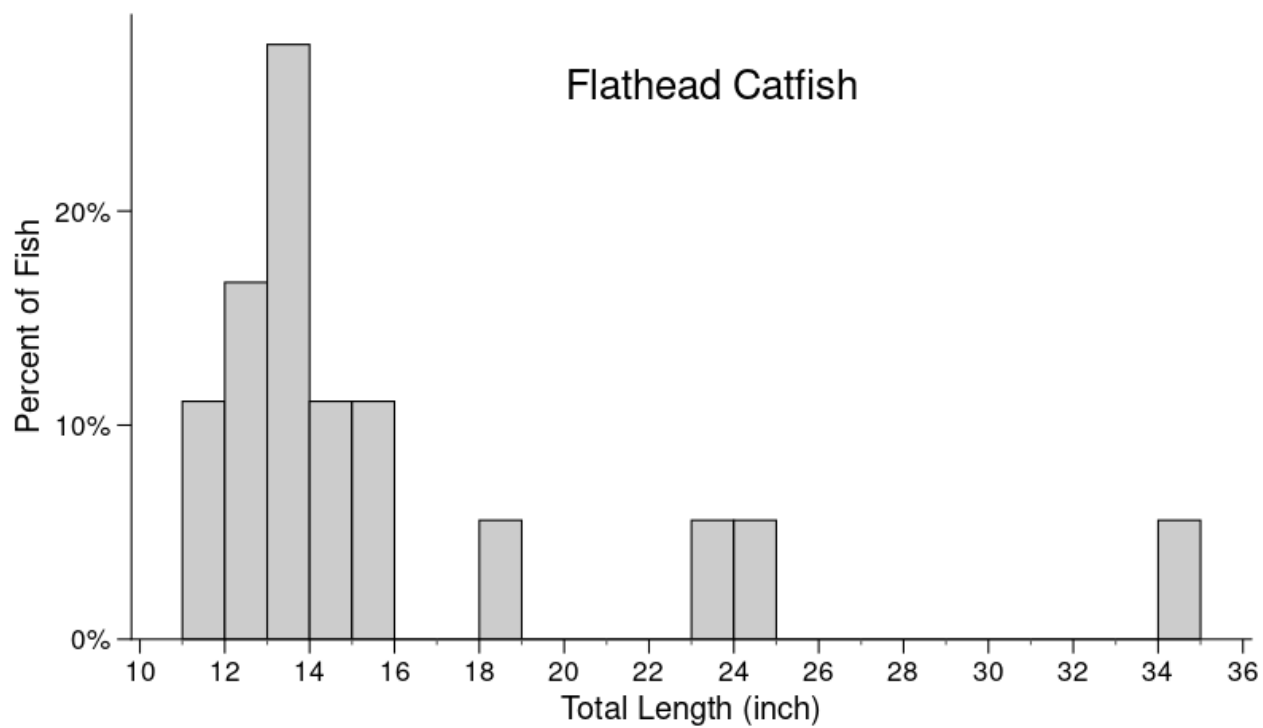
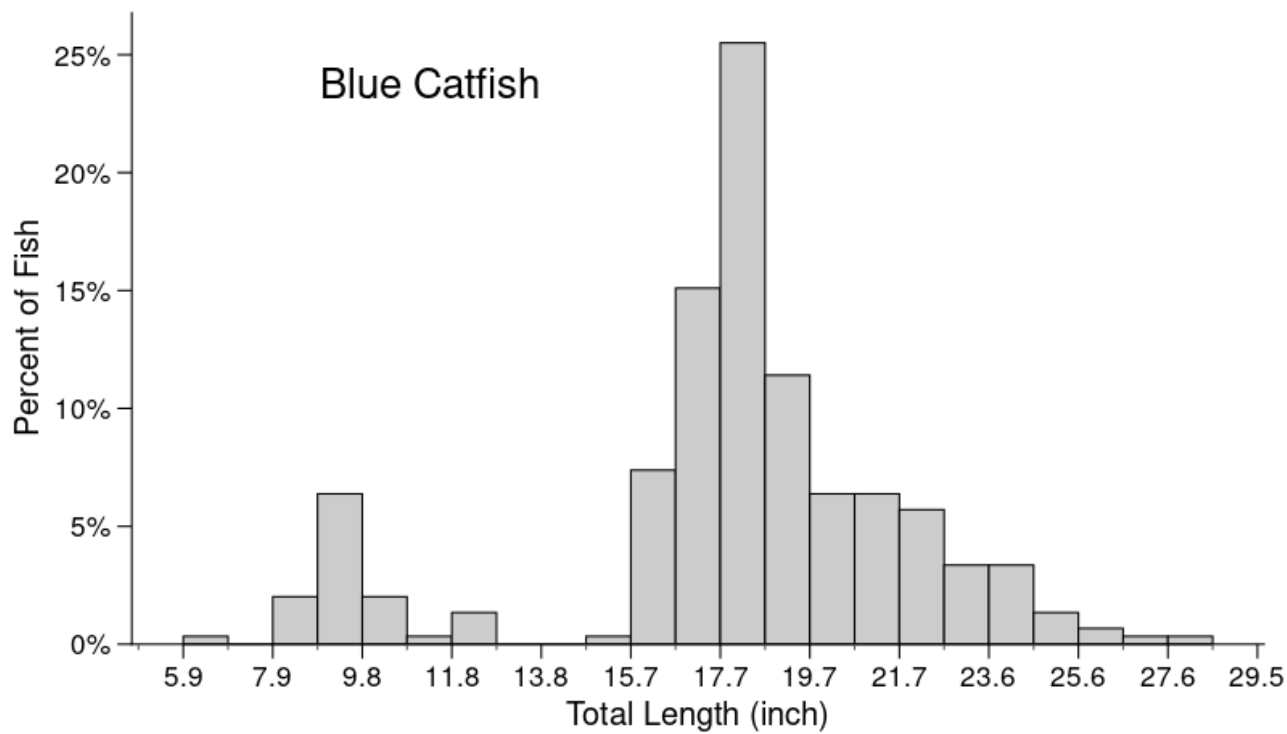


Figure 2. Length frequency and size structure of Blue and Flathead Catfish at Tom Steed 2025.

Relative Weight (Wr)

Size Category	Mean Wr	Count	CV	SE	L 95% CI	U 95% CI
Overall	95.41	297	15.19	0.84	93.76	97.05
substock	114.40	32	21.45	4.34	105.90	122.90
stock	93.84	192	11.46	0.78	92.32	95.36
quality	91.20	73	11.62	1.24	88.77	93.63

Relative Weight (Wr)

Size Category	Mean Wr	Count	CV	SE	L 95% CI	U 95% CI
Overall	91.16	18	14.37	3.09	85.11	97.22
substock	96.87	8	14.38	4.92	87.22	106.52
stock	84.36	7	14.77	4.71	75.13	93.59
quality	89.64	2	4.24	2.69	84.37	94.90
memorable	96.19	1	NA	NA	NA	NA

Figure 3: Relative weight tables for Blue Catfish (top) and Flathead Catfish (bottom) Tom Steed 2025