

Performance Report

State: Oklahoma

Project Title: Fisheries Management Survey

Southwest Region Fisheries Management

Medicine Creek

Abstract

Medicine Creek was surveyed in 2025 via hoop netting for Channel Catfish to determine population structure and dynamics to evaluate the fishery for needs and possible improvements to the lake to enhance the channel catfish fishery. Medicine Creek is one of Southwest Regions (SWR) 3 Close to Home Fishing Areas and is considered as a high priority for both a viable fishery and desirable place for sportsman to visit. This year was the third sample for channel catfish via hoop nets since 2012 (2012, 2019, 2025), a standard sample for channel catfish should be routinely scheduled to monitor current trends in the population in Medicine Creek being a Close to Home area.

Medicine Creek is a fishing destination for anglers for all species but specifically for a wintertime trout fishery but also for a Sunfish and Channel Catfish in southwest Oklahoma. Channel Catfish and hoop net surveys were last conducted in 2019 to collect baseline information on the population but having high stocking rates of many sport fish and high pressure routine sampling is a high need to the area. SWR staff needed baseline hoop netting data to have comparative data to angler surveys to make best management practices with stocking and fish needs.

Introduction

Medicine Creek is a small, flow through system (1.8 miles long) that is downstream from Lake Lawtonka and a main water supply for JA Manning Fish Hatchery. This area lies at the foothills of the Wichita Mountains National Wildlife Refuge and Lawton/Ft Sill, which is the fifth largest city in Oklahoma while the Refuge host over 2.1 million visitors each year. This highly used fishery is managed by ODWC who conducts surveys and compiles data for Bass, Channel Catfish, and Sunfish. Medicine Creek is a clear stream with average depths of 5 feet with very diverse fish species found throughout the drainage, highly accessible fishing areas, along with the city of Medicine Park a tourist destination. SWR staff has made vast improvements to this area including annual trout stockings (November-March), ADA fishing platforms, new bank access, fishing benches and numerous stockings from JA Manning Hatchery.

Management issues that seem to be present is the water quality issues, a flow through system and providing enough stocked fish for anglers. In the fall of 2022 staff started and finished a creel survey of the entire trout fishery along with collecting angler input for all species present. Since then SWR staff have completed almost all concerns that anglers have (access, kayak launch area, benches, ADA facilities

and portable restrooms). SWR staff has completed a habitat project sinking over 40 spider blocks, 2 shelbyville cubes, 3 large hardwoods, 5 cedar trees, and gravel spawning areas that double as a kayak launch. Medicine Creek is a high use area for sportsman, sampling has shown to be moderate catch rates and acceptable ranges of fish health. Our management objectives have been geared towards maintaining a fishery by evaluating all species present along with angler surveys to allow sportsman an opportunity to catch sizeable fish and enjoy a recreational opportunity for both hunting and fishing.

Results

Our hoop netting samples were conducted in August of 2025 when water temperatures averaged 83°F which are suitable with fish division's standard sampling protocols (SSP). Being a smaller area, we were able to sample all available shoreline habitats which consisted of 9 sample sites with site being a 72 hour set unit of effort that included bare bank, proximity to rip rap or mixed vegetation, and deep pools. Nets were placed randomly in areas where 1) fish adequately for depth 2) areas with less aquatic vegetation and 3) avoid high traffic/fishing use areas. In the duration of the 4 day period sample we collected a total of 100 Channel Catfish with fish showing good health and averaging 17 inches.

Channel Catfish samples are measured in catch per unit effort (CPUE) and were moderately low with 33.33 (Figure 1) fish per net, comparatively 2019 samples CPUE was 0.11. When conducting this survey we did not collect any weight measurements. The length frequency of fish (Figure 2) fairly normally distributed with a high abundance of catchable size fish, average of 17" with two strong cohorts of 11" and 17" fish. Age and growth data was not collected from this sample set, rather a PSD metric was used to determine stock length categories. All previous surveys have not taken otoliths for aging of fish, only PSD metrics but it should be noted that a following sample should consider 1) use of smaller mesh nets to account for reproduction and 2) use of otolith collection for larger fish in the population. The size distribution of fish up to 30 inches show that fish are growing adequately along with abundance being moderate within a flow through system.

The population structures found from sampling and based on stocking regimes show the catfish within Medicine Creek are proficient in growing and catchable fish present but more samples are needed to get a better understanding of the fish in the population. The presence of smaller fish in hoop nets (<11") and larger fish found reflects recent hatchery stocking but the lack of fish less than 8 inches could reflect no natural recruitment happening but bias in samples could factor as well. Although, it should be noted that samples did show more fish than previous samples due to increased stocking rates with left over catfish (Figure 3).

The catfish dynamic at Medicine Creek represents a relatively small data set but does show a healthy population of all sizes of fish and that supplemental stockings are increasing opportunities to anglers. Stocking efforts within the last 10 years have increased and those efforts have shown improvements to population structures. Biologically we have noticed a change in water chemistry being more nutrient rich and higher water level fluctuations. The best management plan should utilize the stocking regimes along with possible habitat/spawning structures, and sample routinely for stocking recommendations in order to create a quality fishery.

Species	# Samples 3			CONFIDENCE INTERVALS				NUMBER OF SAMPLES NEEDED TO DETECT A				Relative Weight W_r
	CPUE	Standard Deviation	Standard Error	Lower 80%	Upper 80%	Lower 95%	Upper 95%	CV $\bar{x}$	50% change (CV $\bar{x}$ =.25)	25% change (CV $\bar{x}$ =.125)	Target CV $\bar{x}$ =.2	

Channel Catfish	33.33	24.03	13.87	7	59	0	93	0.42	8	33	13	-
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MEDCRK Tandem Hoop Net - Channel Catfish Summary Statistics

August

2025

Species	# Samples 3			CONFIDENCE INTERVALS				NUMBER OF SAMPLES NEEDED TO DETECT A				Relative Weight W_r
	CPUE	Standard Deviation	Standard Error	Lower 80%	Upper 80%	Lower 95%	Upper 95%	CV $\bar{x}$	50% change (CV $\bar{x}$ =.25)	25% change (CV $\bar{x}$ =.125)	Target CV $\bar{x}$ =.2	

Channel Catfish <12	10.00	10.15	5.86	0	21	0	35	0.59	16	66	26	-
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Channel Catfish >=8<16	18.67	10.60	6.12	7	30	0	45	0.33	5	21	8	-
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Channel Catfish >=12	23.33	29.50	17.03	0	55	0	97	0.73	26	102	40	-
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Channel Catfish >=16	14.67	22.81	13.17	0	39	0	71	0.90	39	155	60	-
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Figure 1: Catch per unit effort of Channel Catfish at Medicine Creek 2025 hoop net samples

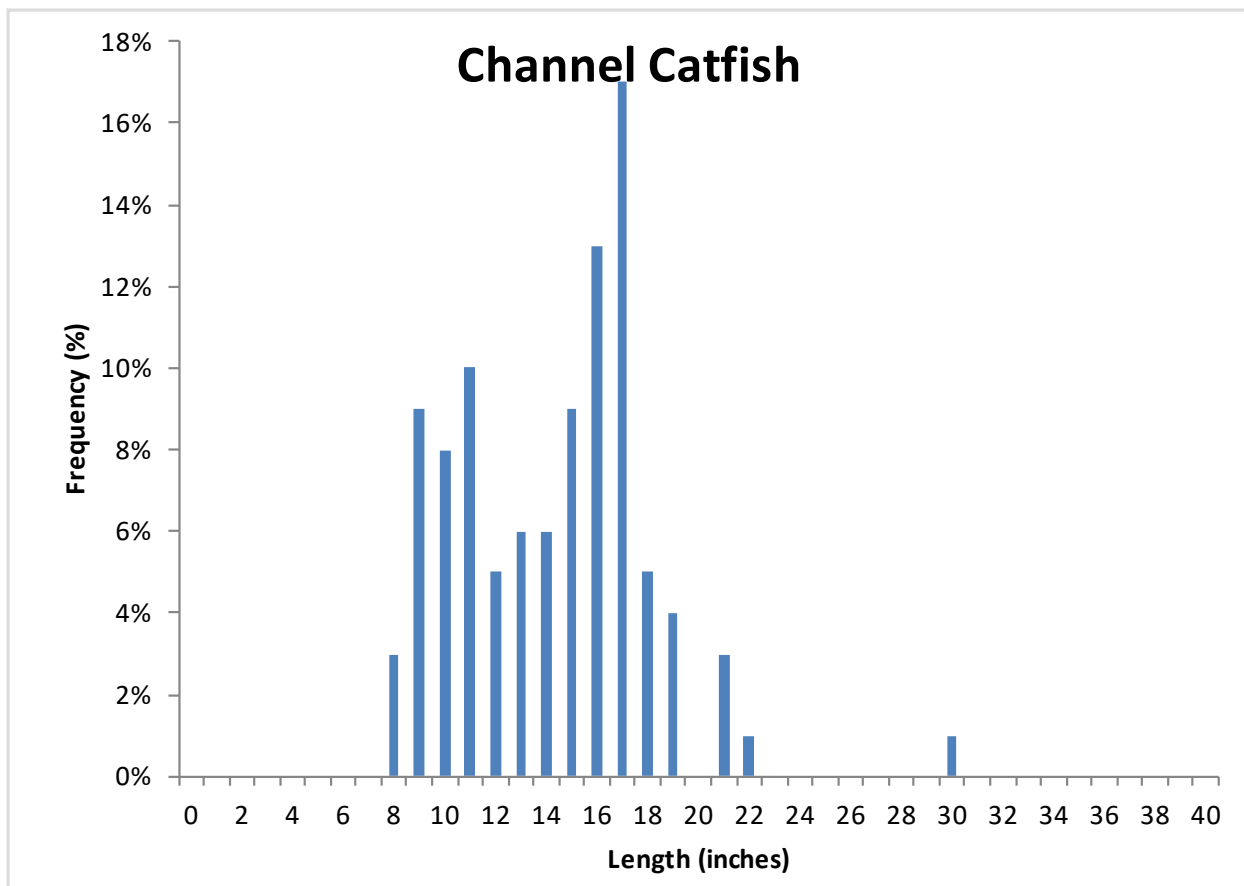


Figure 2. Length Frequency size structure of Channel Catfish Medicine Creek 2025 samples

Year	Yearly Stocking
2016	400
2018	1,010
2019	650
2020	1,450
2021	2,226
2022	2,000
2025	2,000

Figure 3. Yearly stocking rate if Channel Catfish in Medicine Creek; fish sizes vary between 4" left overs-14" hold overs).