

SURVEY REPORT

OKLAHOMA DEPARTMENT OF WILDLIFE CONSERVATION



FISH MANAGEMENT SURVEY AND RECOMMENDATIONS

FOR

GUTHRIE LAKE

2024

SURVEY REPORT

State: Oklahoma

Project Title: Guthrie Lake Fish Management Survey Report

Period Covered: 2024

Prepared by: Oklahoma Fishery Research Laboratory

Date Prepared: December 2024

Guthrie Lake

ABSTRACT

Guthrie Lake was surveyed by fall electrofishing in 2024 to assess Saugeye stockings that occurred in the spring of 2021 and 2023. The fishery consists of Largemouth Bass, various sunfish species, White Crappie, Channel, and Flathead catfish. It is recommended the City of Guthrie align city assigned Saugeye and Largemouth Bass regulations with statewide regulations.

INTRODUCTION

Guthrie Lake impounds Guthrie Creek and is located 1.5 miles west of I-35 on West Seward Road near Guthrie, Logan County, Oklahoma. It has a surface area of 205 acres, 5.1 miles of shoreline, a maximum depth of 22.5 feet, and was constructed in 1919. The lake has a secchi disc visibility of around 19 inches and is considered eutrophic. The lake serves a multiuse purpose as flood control and recreational use including fishing, boating, and camping, among other activities. Fish habitat consists of riprap, rocky points, some timber, and natural and artificial brush piles (predominately cedar trees with a few PVC structures around docks). Aquatic vegetation is limited. Primary forage species consist of Gizzard Shad and Inland Silversides.

City enforced fishing regulations include an 18-inch minimum length/5 fish per day limit for Largemouth Bass and Saugeye exists. Fishing is permitted through rod and reel or hand line methods only. A city permit for fishing or boating is required.

RESULTS

Fall Saugeye Electrofishing (Gear 49)

Saugeye were surveyed in the fall of 2024 by means of nighttime electrofishing. Sampling occurred in accordance with the Oklahoma Department of Wildlife Conservation's Standard Sampling Procedures (SSP). During sampling the water temperature was 15.5 C (60 F), and the lake was at a low level, roughly 10-11 feet low. Effort included 13 randomly selected sites around the perimeter of Guthrie Lake on November 14th. A total of 47 Saugeye were collected during sampling.

The median total length (TL) of all Saugeye sampled was 233 mm with a minimum TL of 158 mm and a maximum TL of 544 mm (Figure 1). Mean catch per unit effort (CPUE) of Saugeye was 25.64 (95% confidence interval (CI) 16.38-34.89) with a standard error (SE) of 4.72 and a relative standard error (RSE) of 18.43 (Table 1). A total of 47 Saugeye were aged. As expected, two age classes of fish were encountered: ages 1 and 3.

RECOMENDATIONS

1. Continue to monitor population dynamics for self-sustaining sportfish species (Largemouth Bass, Crappie spp., Saugeye, Catfish spp.).

2. We recommend the City of Guthrie remove the minimum length limit on Largemouth Bass and Saugeye to match statewide regulations put out by ODWC.

Table 1: Catch per unit effort of Saugeye in Guthrie Lake by size category.

Species	Size Category	Mean	RSE	SE	L 95% CI	U 95% CI	N RSE = 12.5 (25% range)	N RSE = 20 (40% range)
Saugeye	sub stock	12.55	31.89	4.00	4.70	20.39	72	28
Saugeye	stock	9.27	26.70	2.48	4.42	14.13	50	20
Saugeye	quality	0.55	100	0.55	-0.52	1.61	704	275
Saugeye	preferred	3.27	51.64	1.69	-0.04	6.59	188	73

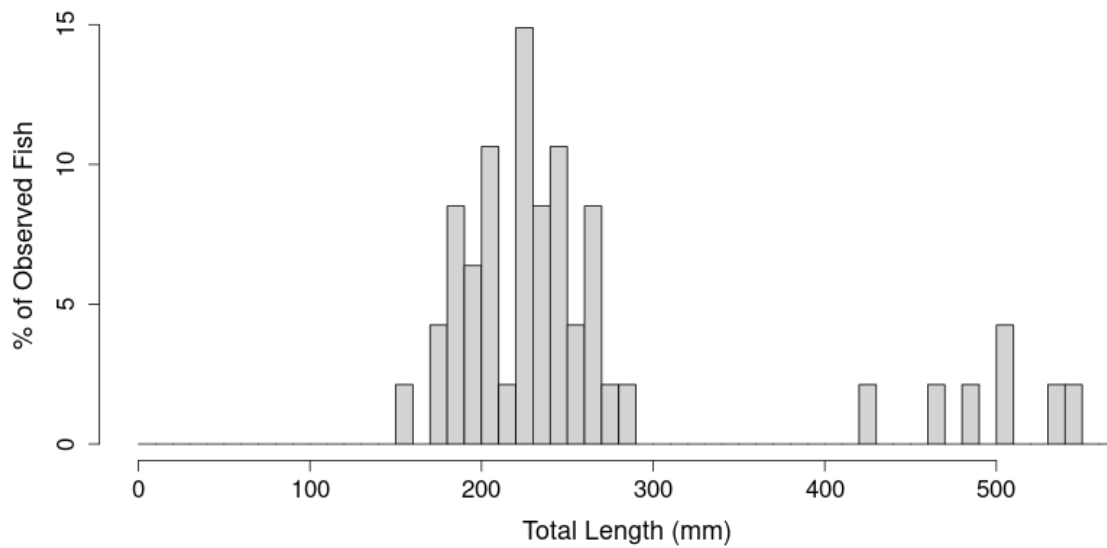


Figure 1: Length-Frequency distribution of Saugeye in Guthrie Lake.