Abstract

Sanborn Lake is located within the city limits of Stillwater, Oklahoma on the north side of the town. This relatively secluded impoundment offers a close to home fishing opportunity with the feel of being outside of a larger town. The Lake is very clear and has abundant aquatic vegetation. During the hottest time of the summer the lake can almost be unfishable due to the aquatic vegetation.

Current Management Practices

The North Central region strives to provide good fishing opportunities within urban areas and close to small communities. The goal is to remove the constraint of travel time from the reasons that people do not fish. Staff needs to identify and prioritize species management at Sanborn Lake.

2023

Sanborn Lake was sampled to evaluate the Black Bass and Sunfish populations after a contamination spill occurred in the pond just upstream of the lake. Water levels were down, and the spill was cleaned up and signed off by OKDEQ. In the interest of the making sure no contamination entered Sanborn Lake a community sample was done to determine if any changes occurred to the fish communities since the last sampling event in 2021. Sanborn Lake was sampled using boat electrofishing equipped with an EST Electrofishing Systems Unit. Due to the lake being a small size and the water levels being down 3ft the entire shoreline was sampled. Each sample was 10 min in length and all Black Bass and Sunfish were collected. Black Crappie were found but in low abundances (N=6). No aging structures were collected from the fish sampled.

Black Bass:

A total of 59 Largemouth Bass were collected measured (mm) and weighed (g) then released back into the impoundment. Catch Per Unit Effort (CPUE) was 88.5± 30.13 with a C.V. of .17, and was not significantly different from 2021 (CPUE = 49.2± 15.86, C.V. = .16). Length frequencies indicate a normal distribution with a majority of LMB sampled ranging from 225mm to 324mm. The bimodal distribution we saw in 2021 is no longer present and is most likely due to the larger fish in 2021 reaching end of life (Figure 1). Proportional Size Distributions were not significantly different from 2021 with 52% of the population reaching quality size and 13% reaching preferred size Table 1. Relative weights (Wr) were significantly larger than in 2021 (2021, Wr = 88.88± 2.15, 2023, Wr = 94.65± 2.28).

Overall the Largemouth Bass population in Sanborn did not significantly change from 2021 with the exception of relative weight significantly increasing among the Substock, Stock and Quality size fish. This increase could be due the water levels of Sanborn Lake being low where forage fish are more congregated and predators have an easier time hunting. Collecting aging structures in the future could be beneficial in determining the growth of the LMB in Sanborn and if stunting is occurring or if this large group of fish around 9 to 13 inches is just young.

Sunfish:

Redear sunfish were the most abundant sunfish collected (N=101), followed by Bluegill (N=43), Hybrid Sunfish (N=3), and Green Sunfish (N=1). Catch Per Unit Effort (CPUE) of Redear Sunfish was 151.5 with a C.V. of .12. This was significantly higher then in 2021 (Table 2). CPUE of Bluegill was not significantly different with a CPUE= 64.5 and a C.V. of .21. Length frequencies indicate that most Redear Sunfish collected are between 125mm and 199mm (Figure 2). Bluegill length frequencies indicate more smaller sized fish than in 2021, with the largest length class being 100mm to 124mm (Figure 3). Proportional Size Distributions did not significantly increase with a PSD of 47± 9 compared to a PSD of 38± 9 in 2021 for Redear Sunfish and a PSD of 28± 14 compared to 51± 14 in 2021 for Bluegill. Relative Weights of Redear Sunfish did not significantly change between the 2 samples (2021 Wr = 102.12± 1.3, 2023 Wr = 103.16± 2.61), but did significantly increase for Bluegill (2021 Wr = 96.04± 2.44, 2023 Wr = 105.60± 5.84).

Overall the Sunfish populations in Sanborn lake have changed some in length but not enough to change PSD's significantly. Relative Weights did increase for Bluegill but not for Redear Sunfish. The population do not appear to have had any drastic change to them and thus lead me to believe the contamination spill upstream of the lake did not enter Sanborn Lake before it was cleaned up and if it did didn't do significant harm to the fish populations residing within the Lake.

RECCOMENDATIONS

1. Evaluate LMB populations in 2025, collect otoliths to determine growth of LMB
2. Evaluate Sunfish in 2025, collect otoliths of Redear Sunfish and Bluegill to determine growth.

Figures

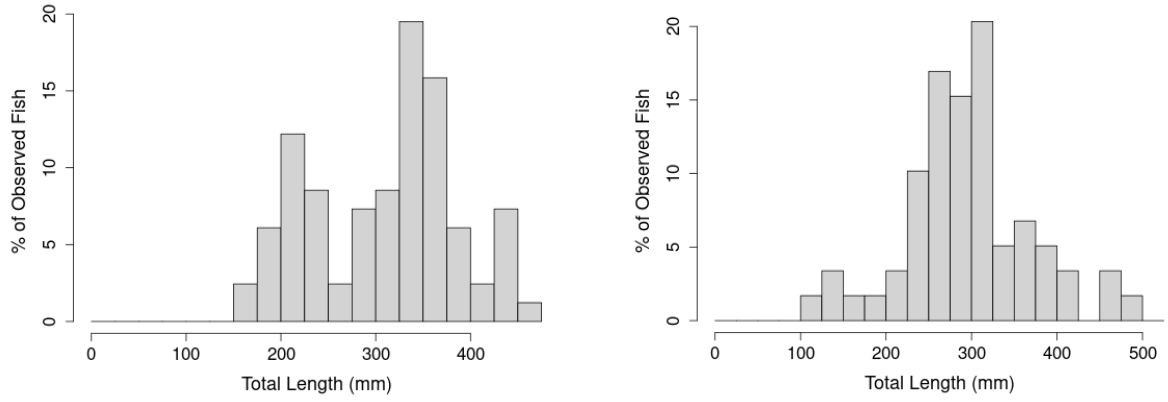

Figure 1. Length frequencies of Largemouth Bass in Sanborn Lake 2021 (left) and 2023 (right).

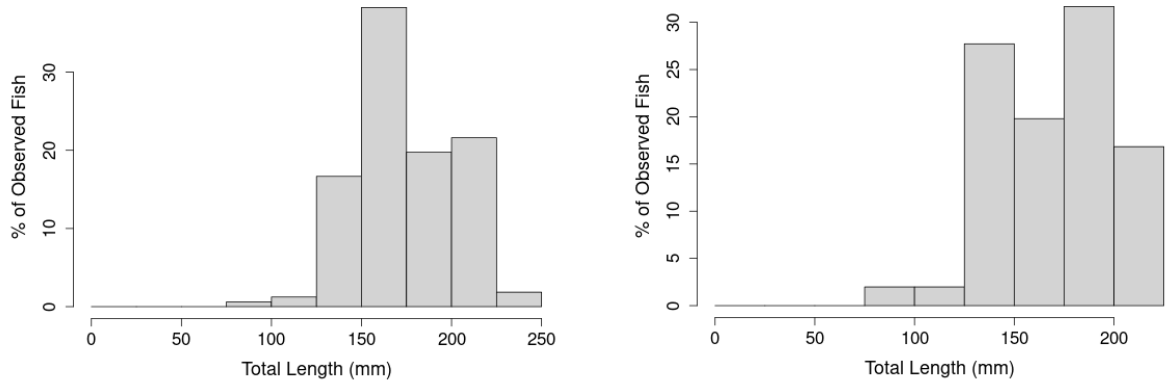

Figure 2. Length frequencies of Redear Sunfish in Sanborn Lake 2021 (left) and 2023 (right).

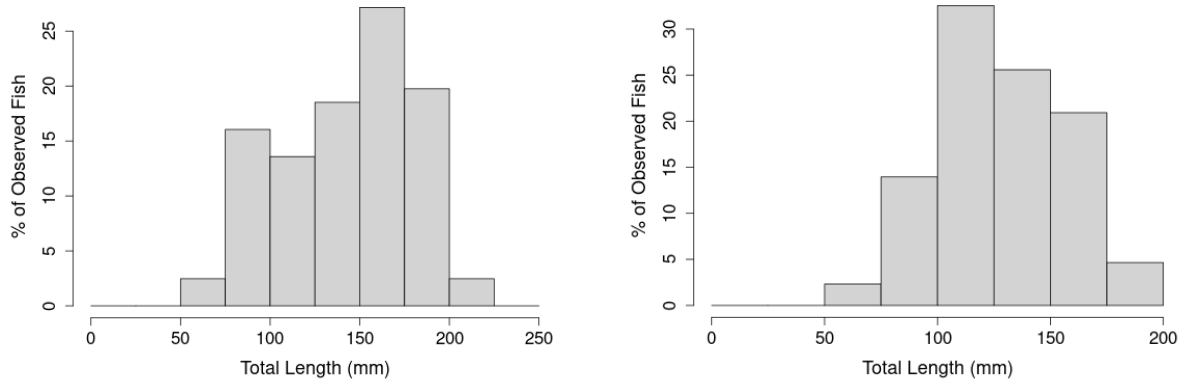

Figure 3. Length frequencies of Bluegill Sunfish in Sanborn Lake 2021 (left) and 2023 (right).

Table 1. Proportional Size Distributions of Largemouth Bass in Sanborn Lake.

	PSD	**PSD-P**
2021	69± 13	17± 11
2023	52± 16	13± 11

Table 2. Catch Per Unit Effort of Sunfish in Sanborn Lake.

	REDEAR SUNFISH	**BLUEGILL**
2021	97.20± 17.07	48.60± 18.09
2023	151.50± 34.41	64.50± 26.46