LAKE LUCAS LARGEMOUTH BASS SURVEY, 2022

Federal Aid in Sport Fish Restoration
Project F-108
Report Type: Survey

Seth Mycko
District 5 Fisheries Biologist II

North Carolina Wildlife Resources Commission
Inland Fisheries Division
Raleigh NC

2022

Keywords: Largemouth Bass, Asheboro, Lake Lucas, Electrofishing, Relative Abundance, Size Structure, Age and Growth, Condition, Piedmont Region

This project was funded under the Federal Aid in Sport Fish Restoration Program utilizing state fishing license money and federal grant funds derived from federal excise taxes on fishing tackle and other fishing related expenditures. Funds from the Sport Fish Restoration Program are used for fisheries management and research, aquatic education, and boating access facilities. The program is administered cooperatively by the N.C. Wildlife Resources Commission and the U.S. Fish and Wildlife Service.

Study Site: Lake Lucas

Sample Date(s): April 11, 14, & 21, 2022

Species: Largemouth Bass

Gear: Boat Mounted Electrofishing

Effort: 4.5 hours

Sample Size: n = 238

RESULTS

Catch Per Unit Effort (Mean): 53 fish/hr (SE = 4)

Length (mm):	Minimum = 71	Maximum = 602	Mean = 358	
	%≥356 mm = 63	%≥457 mm = 30	PSD = 88	PSD-P = 68
Condition:	Mean *Wr* = 92	%≥2.3 kg = 6		
Growth:	Length at Age 2 (mm) = 271	Max Age (years) = 15		

BIOLOGICAL OBSERVATIONS

The Largemouth Bass population at Lake Lucas in Asheboro, NC has not been surveyed by NCWRC since 2010. The 2022 population size distribution is exceptional for a small reservoir where 12% of stock sized fish were of memorable size (510 mm) or greater (Figure 1). An abundance of younger fish indicates that the spawning stock of Lake Lucas is very robust (Figure 2). Approximately, 17% of the survey consisted of fish age eight and older. Body conditions were optimal for larger fish (>380 mm) and were slightly lower for smaller fish (Figure 3). Fish reach 380 mm by age 4 years and live up to 15 years (Figure 4). CPUE of 53 fish/hr is typical of a small reservoir comprised of larger than average Piedmont NC Largemouth Bass (Table 1). Overall, Lake Lucas supports a stable and balanced population of that also includes a higher percentage of larger individual Largemouth Bass compared to other similarly sized reservoirs.

MANAGEMENT RECOMMENDATIONS

1. Maintain current statewide harvest regulation for Largemouth Bass at Lake Lucas.
2. Promote harvest of the small Largemouth Bass within the Stock Density (200–300 mm) to maximize body condition within that range and reduce competition for the largest Largemouth Bass.

TABLES AND FIGURES

TABLE 1.—Catch per unit effort (CPUE), percent of fish that were 356 mm and longer, Proportional Size Distribution-Preferred (PSD-P), mean length (TL mm) at age 2, and mean relative weight (*Wr*) of preferred sized Largemouth Bass collected from Lake Lucas with electrofishing in April 2010 and 2022.

Year	CPUE (fish/h)	%≥356 mm	PSD-P	Mean length at age 2	Mean W_r
2010	89	72	67	241	95
2022	53	63	68	271	92

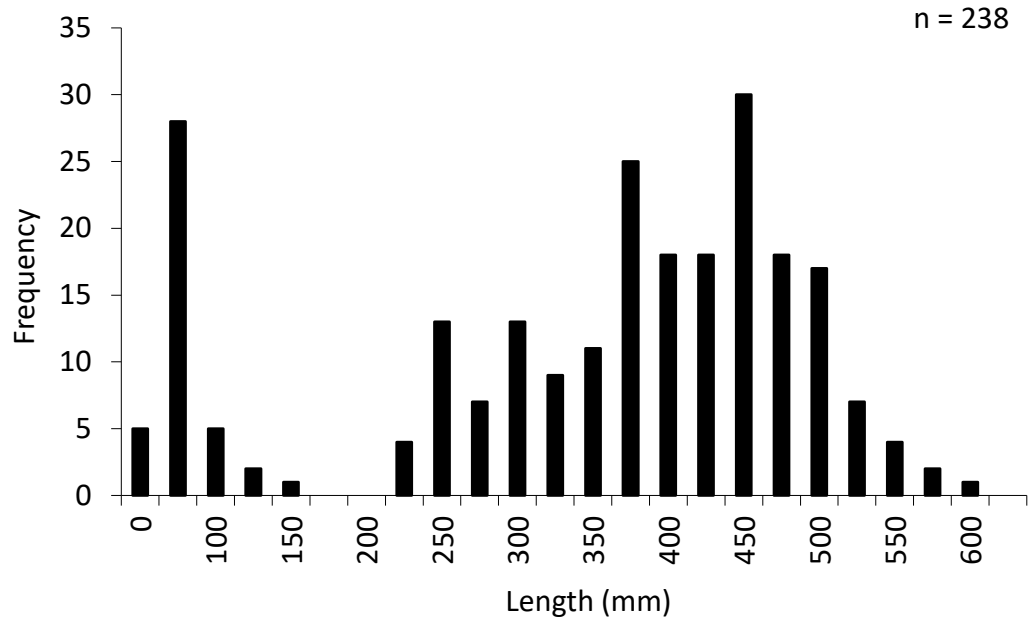

Figure 1.—Length frequency distribution of Largemouth Bass collected from Lake Lucas with electrofishing during April of 2022.

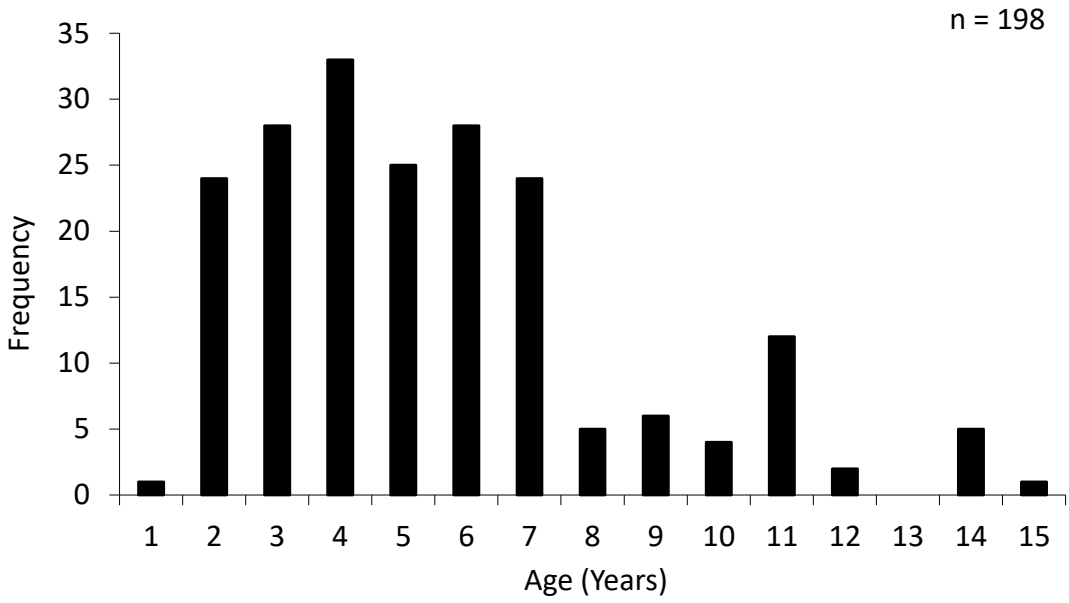

Figure 2.—Age frequency distribution of Largemouth Bass collected from Lake Lucas with electrofishing during April of 2022.

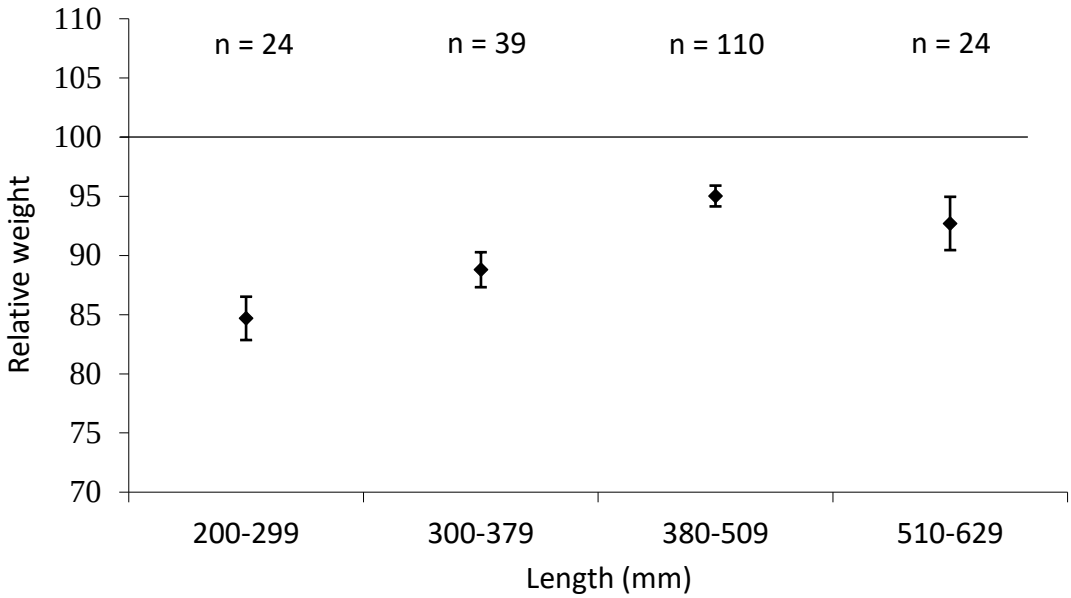

Figure 3.—Relationship between size class and relative weight (*Wr*) of Largemouth Bass captured from Lake Lucas with electrofishing during April of 2022.

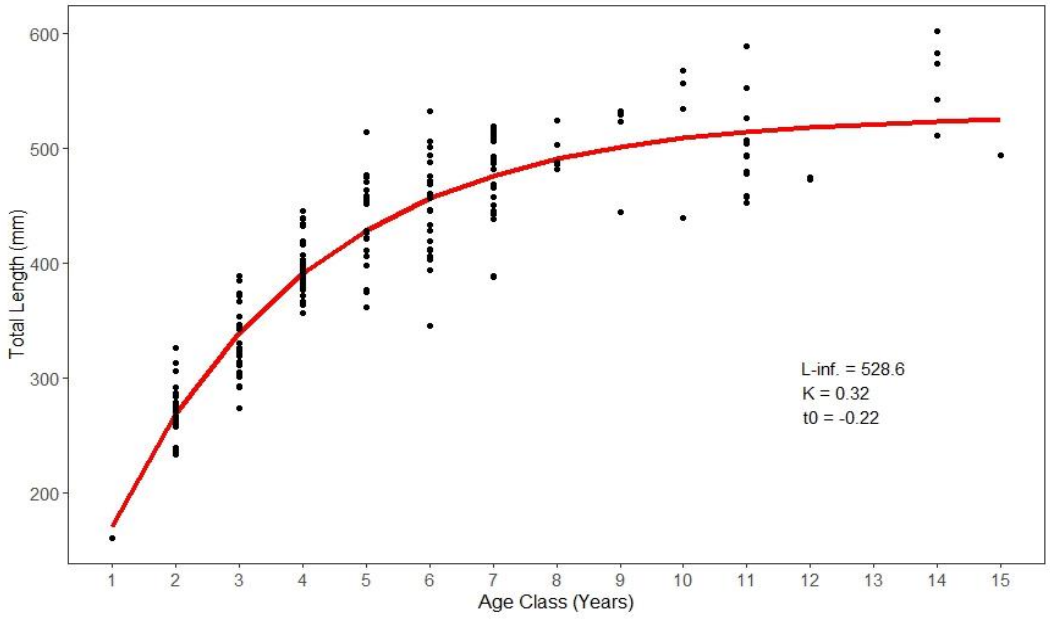

Figure 4.—von Bertalanffy growth curve for of Largemouth Bass collected from Lake Lucas with electrofishing during April of 2022.