



## **BIOLOGICAL OBSERVATIONS**

The Largemouth Bass population at Tar River Reservoir (Tar Reservoir) continues to be in good condition. The North Carolina Wildlife Resources Commission Division of Inland Fisheries samples Largemouth Bass populations with electrofishing in Tar Reservoir on a biennial basis and normally conducts sampling in the spring on even years at Tar Reservoir, with the exception that the population was not sampled in 2020. In 2022, catch per unit effort (CPUE) was above average for a Piedmont reservoir and higher than the CPUE observed during the 2018 survey, yet lower than the CPUE obtained in 2016. All other values from the 2022 sample were close to previously observed ranges, yet slightly lower than ideal (Table 1). The current fishery is dominated by smaller, younger fish where approximately 30% of fish were above the minimum size limit (Figure 1) and approximately 85% of fish were age 4 and younger (Figure 2). These younger age classes should support the fishery for the next several years and continued good recruitment will be necessary to avoid a reduction in angler catch rates overall. Additionally, growth was slow to moderate with fish surpassing the minimum size limit by age 4 (Figure 3). Finally, relative weight values were good for the smaller fish, yet remained low for the larger size classes (Figure 4). Approximately 3,625 Threadfin Shad were stocked in Tar Reservoir in March 2016. Based on anecdotal observations, there appears to be a good supply of Threadfin Shad and Gizzard Shad at Tar Reservoir. Suboptimal relative weights and growth rates are most likely related to crowding in certain size classes coupled with more abundant and higher quality forage available for smaller fish. Increasing harvest will help to reduce competition and improve growth rates for this population.

Invasive catfish have been introduced to Tar Reservoir and Spotted/Alabama Bass have been reported by anglers. While no Spotted/Alabama Bass have been caught in our surveys similar situations have demonstrated a relatively rapid expansion with their introductions having negative implications on Largemouth Bass populations. The best approach is to encourage harvest of all Spotted/Alabama Bass and educate anglers on limiting the spread of invasive fish.

## **MANAGEMENT RECOMMENDATIONS**

1. Maintain current 356-mm minimum size limit (with two fish exemption) and 5 fish daily creel limit on Largemouth Bass at Tar Reservoir, and no limits on Spotted/Alabama Bass.
2. Continue to sample Largemouth Bass biennially at Tar Reservoir during the spring with electrofishing gear to examine temporal trends in the population and recruitment variability.

**TABLES AND FIGURES**

TABLE 1.—Catch per unit effort (CPUE), percent of fish that were 356 mm and longer, 457 mm and longer, proportional size distribution (PSD), proportional size distribution-preferred (PSD-P), percent of fish that were 2.3 kg and greater, length at age 3, maximum age, and average relative weight (*Wr*) of Largemouth Bass collected from Tar Reservoir with electrofishing, spring 2016, 2018 and 2022.

Year	CPUE	%≥ 356 mm	%≥457 mm	PSD	PSD-P	%≥2.3kg	Length age 3	Max age	<i>Wr</i>
2016	122	22	7	66	20	1	341	8	88
2018	66	28	7	56	20	1	n/a	n/a	91
2022	87	28	5	66	24	1	342	13	94

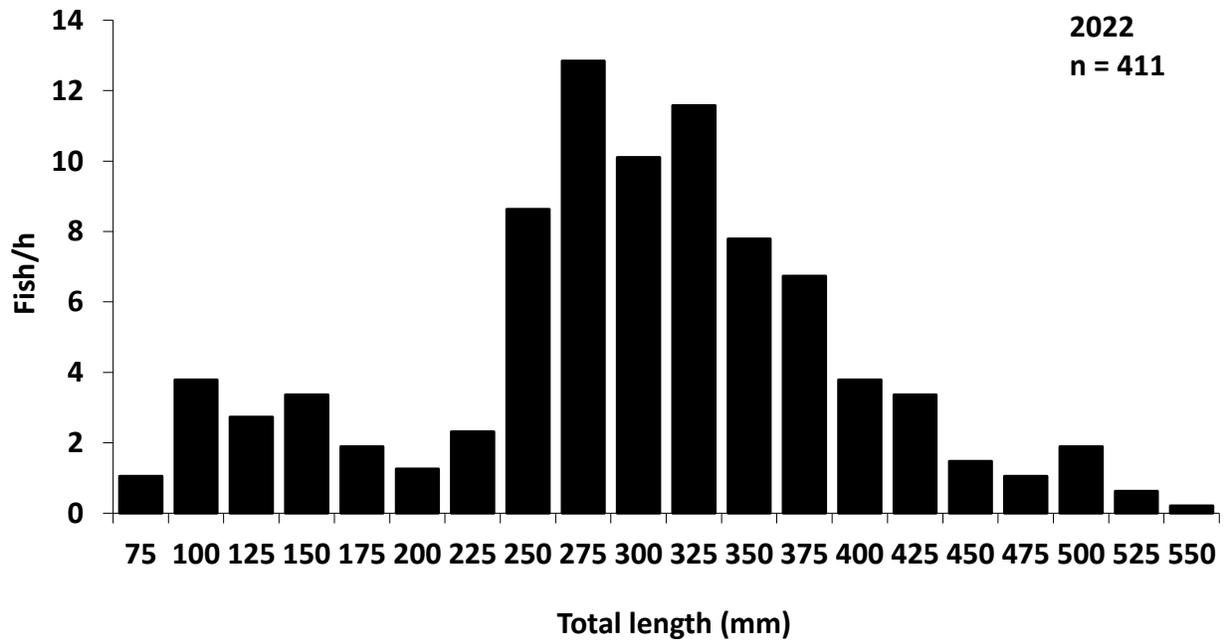


FIGURE 1.—Length frequency distribution of Largemouth Bass collected from Tar Reservoir with electrofishing, spring 2022.

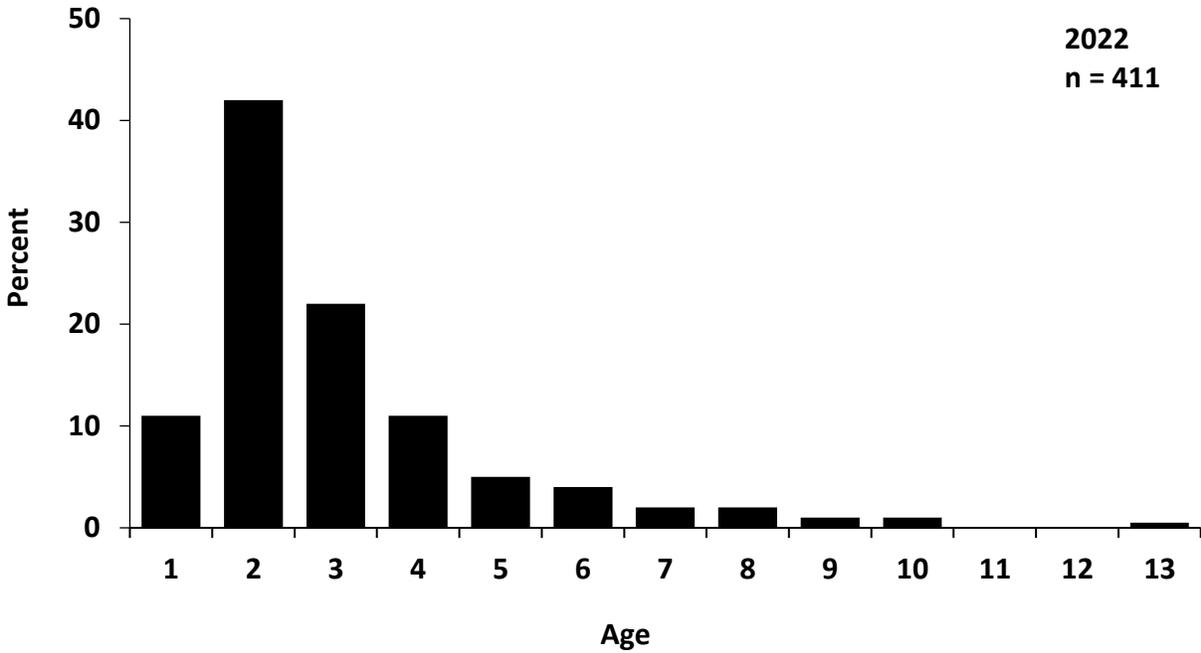


FIGURE 2.—Age frequency distribution of Largemouth Bass collected from Tar Reservoir with electrofishing, spring 2022.

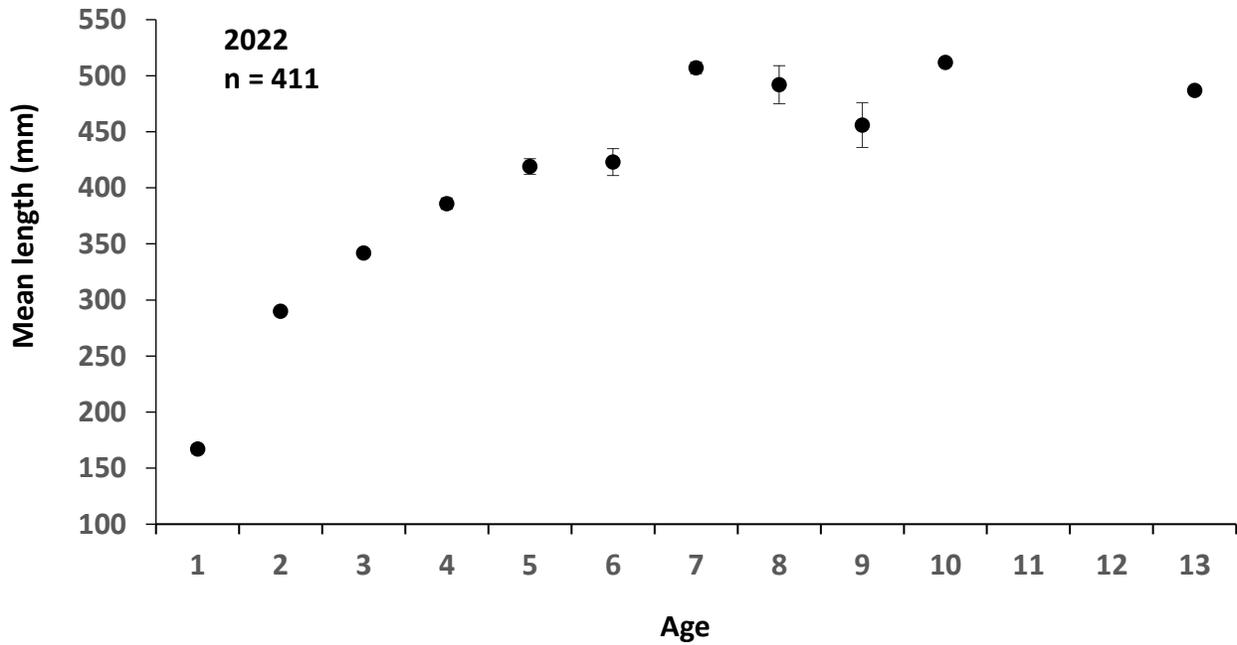


FIGURE 3.—Average length at age for Largemouth Bass collected from Tar Reservoir with electrofishing, spring 2022. Error bars indicate  $\pm 1$  standard error.

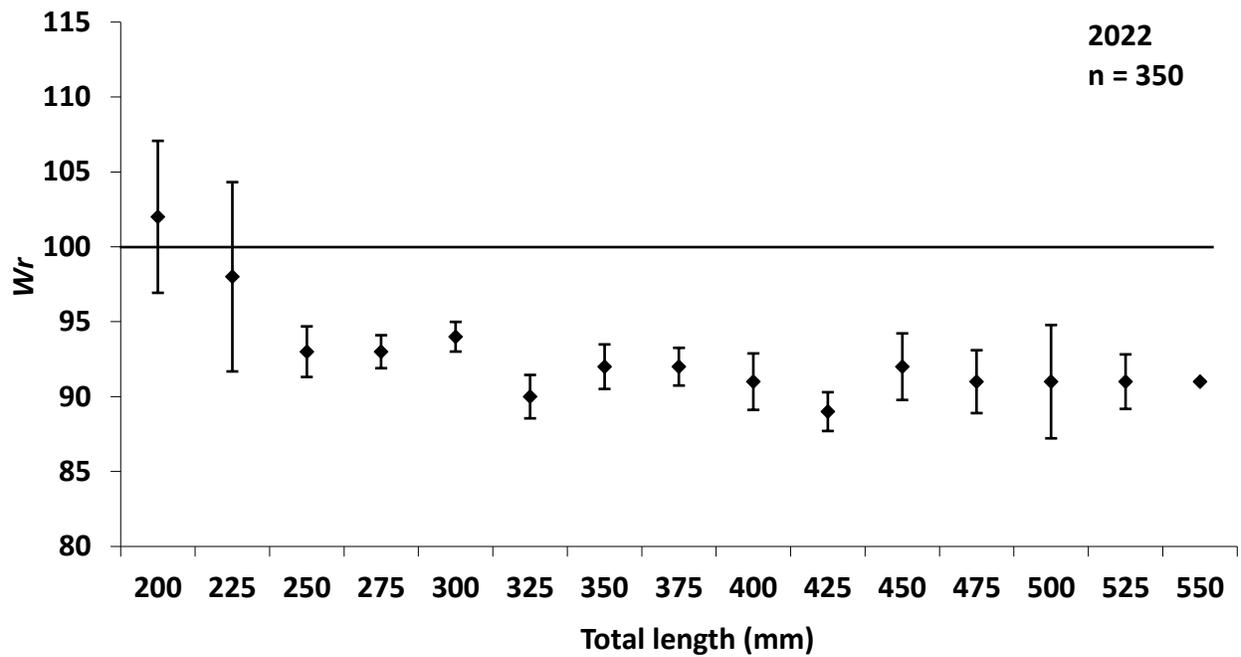


FIGURE 4.—Relationship between length and relative weight ( $W_r$ ) of Largemouth Bass  $\geq 200$  mm collected from Tar Reservoir with electrofishing, spring 2022. Error bars indicate  $\pm 1$  standard error.