

**WILSON RESERVOIR FALL MANAGEMENT  
REPORT**

**2008**

**Prepared By**

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## Introduction

The reservoir management objective for Wilson Reservoir is to collect baseline biological data on the important sport fishes. From this data, length-at-age frequencies, growth, relative abundance and relative weight or condition will be obtained. This information will be analyzed and used to formulate management recommendations.

Wilson Reservoir supports a varied Morone population consisting of striped bass, *M. saxatilis* and white bass, *M. chrysops*. Hybrid striped bass were stocked from 1977 to 2002. The Morone species have provided a fishery below Wheeler Dam for many years. Each spring and during the summer white bass have migrated to the tailwaters to spawn and feed on the abundance of baitfish that congregate in the area in the summer. After successful stockings of hybrid striped bass, a limited fishery was developed for this species. Striped bass were stocked one time in 1976 and their population is supplemented by downstream migration of stocked fish.

Striped bass stockings were discontinued on the Tennessee River (Wheeler Reservoir) in 1999 due to limited use by anglers. Hybrid striped bass stockings were discontinued on the Tennessee River in 2002, again due to limited use by anglers. Since this time we have observed a decline in the number of hybrid striped bass within the reservoirs.

Although striped bass stockings were discontinued, we began to observe YOY striped bass on Wheeler and Wilson Reservoir in 2002. In 2005 one age 0+ ; nineteen age 1+ and one age 2+ striped bass were collected in gillnets from Wilson Reservoir (Floyd et al. 2005). This suggests varied immigration from upstream sources. All specimens collected in 2005 were identified as Atlantic Coast strain, not the Gulf Coast

Strain that is produced and stocked by Alabama's Wildlife and Freshwater Fisheries Division.

Fall gillnet sampling was conducted on Wilson Reservoir to monitor the continued immigration of striped bass into Alabama waters and monitor the white bass population.

### **Methods**

Wilson Reservoir was sampled on November 13 and 14, 2008. Gillnets were set overnight in various locations in Shoal Creek embayment. Each net consisted of five 12.2 m panels with mesh sizes of 2.54, 3.81, 5.08, 6.35, and 7.62 cm. All net sets were from the mouth of Shoal Creek to SCM 2. Target species included striped bass, white bass, and blue catfish. All target species were weighed and measured. Otoliths were removed from striped bass and white bass. A fin clip was removed from each striped bass and preserved in ethol alcohol for genetic purposes. Length and age specific data was summarized using the Alabama Division of Wildlife and Freshwater Fisheries data and report utilities 2.2 (Slipke, 2004).

### **Results**

Insufficient numbers of striped bass were collected to make an analysis of the population. We are still seeing immigration into Wilson Reservoir as six fish were age 2+ and one individual was age 3+. No age 1+ or age 0+ striped bass were collected.

Only 13 blue catfish were collected in five net nights of sampling. Lengths ranged from 334mm TL to 820mm TL. The majority of fish measured between 450 and 675mm TL. These size ranges are slightly larger than that reported by Holley (2006) for the Wheeler Dam tailwaters.

Seventy-seven white bass were collected during fall, 2008. This number is higher than that observed in 2002 (Floyd et al. 2005) and 2005 (Floyd and Ekema, 2005), which were 14 and 21, respectively. Population density varies but shows a trend of a strong year class every three years.

Six age classes were collected with the age 0+ comprising 76% of the sample (Table 1). Growth was satisfactory with fish obtaining a preferred size by age 1+ (Table 2). The RSD indices were dominated by the quality size category which was comprised of age 0+ individuals (Figure 2). Estimated annual mortality ranged from 47 to 49 percent for un-weighted and weighted estimates, respectively (Figure 4).

### **Conclusions**

White bass and striped bass provide seasonal fisheries on Wilson Reservoir. Anglers predominantly target both species in the spring during spawning migrations. The recruitment of the striped bass varies and is dependent on downstream migration into the reservoir. This recruitment will vary and may reduce the numbers available to anglers during periods of low migration.

The white bass exhibit varied recruitment with a strong year class produced every three years. Growth rates are rapid with fish reaching a harvestable size in their first year.

No changes in management strategies are warranted at this time.

### **Literature cited**

Floyd, K.B., T.D. Berry, and J.C. Greene. 2005. Wilson Reservoir Management Report, 2002. Alabama Division of Wildlife and Freshwater Fisheries, Montgomery, AL.

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- Slipke, J.W. 2004. ADWFF data and report utilities: Version 2.2. Alabama Division of Wildlife and Freshwater Fisheries, Montgomery, AL.

**Appendix A**  
**Tables and Figures**

TABLE 1. WILSON RESERVOIR MORPHOMETRIC, PHYSICAL AND  
CHEMICAL CHARACTERISTICS.

Surface area	15,500 surface acres
Drainage area	30,750 square miles
Full pool elevation	507.5 feet-msl
Mean annual fluxuation	3 feet
Shoreline distance	166 miles
Shoreline development index	10.3
Mean depth	40.9 feet
Maximum depth	93 feet
Outlet depth	97.5 feet
Total dissolved solids	NA
Morphoedaphic index	NA
Growing season	220 frost free days (Jenkins 1967)
Date of Impoundment	1924

TABLE 2 . AGE COMPOSITION AND MEAN LENGTH OF WHITE  
BASS FROM WILSON RESERVOIR, FALL 2008.

Age	Year Class	Number	Percent	CPE	Mean TL	SE
0	2008	59	76.6	11.8	264.3	2.9
1	2007	4	5.2	0.8	340.5	11.8
2	2006	4	5.2	0.8	339.0	18.5
3	2005	7	9.1	1.4	370.0	16.4
4	2004	2	2.6	0.4	413.5	1.5
5	2003	1	1.3	0.2	366.0	
Total		77	100.0	15.4		

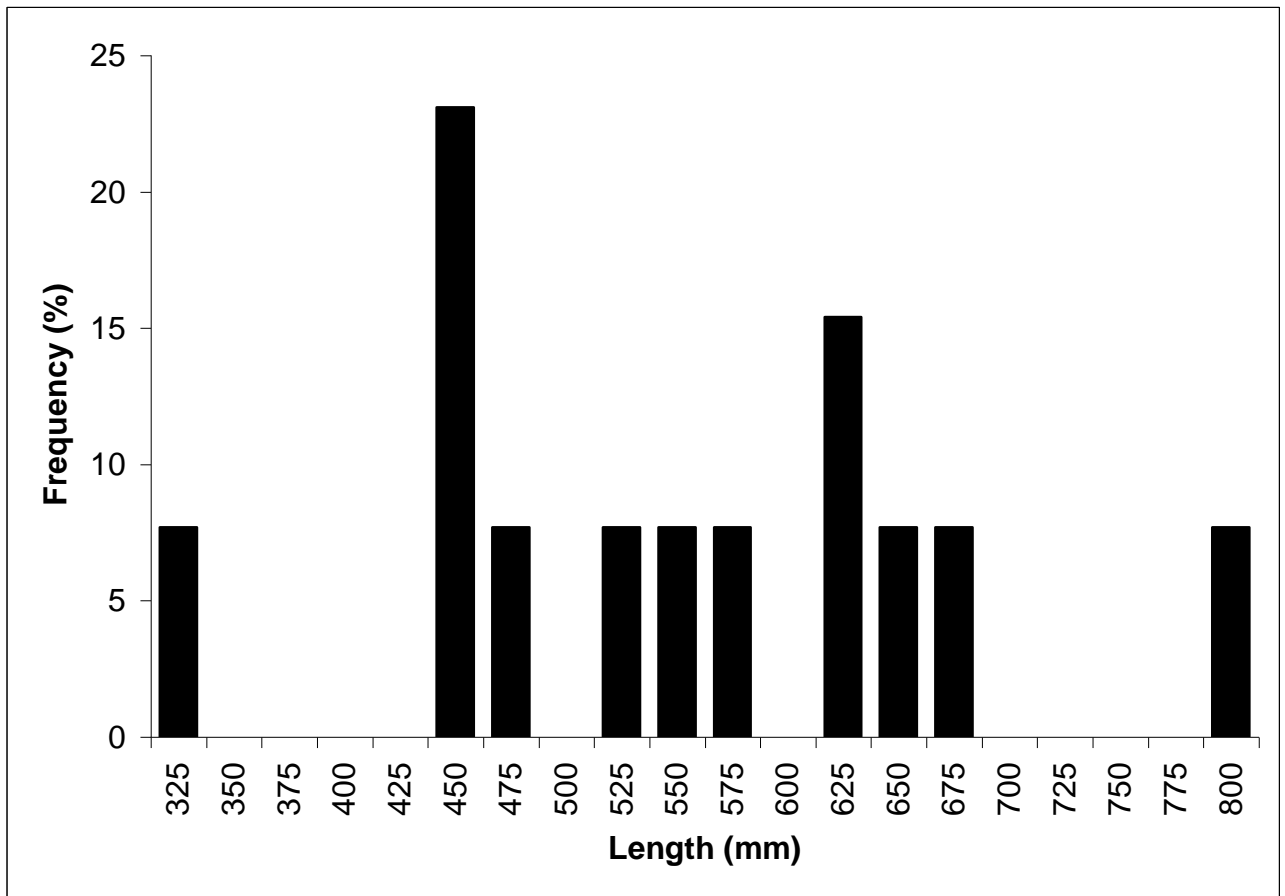


Figure 1. Length frequency distribution of blue catfish (n=13) from Wilson Reservoir, Fall 2008.

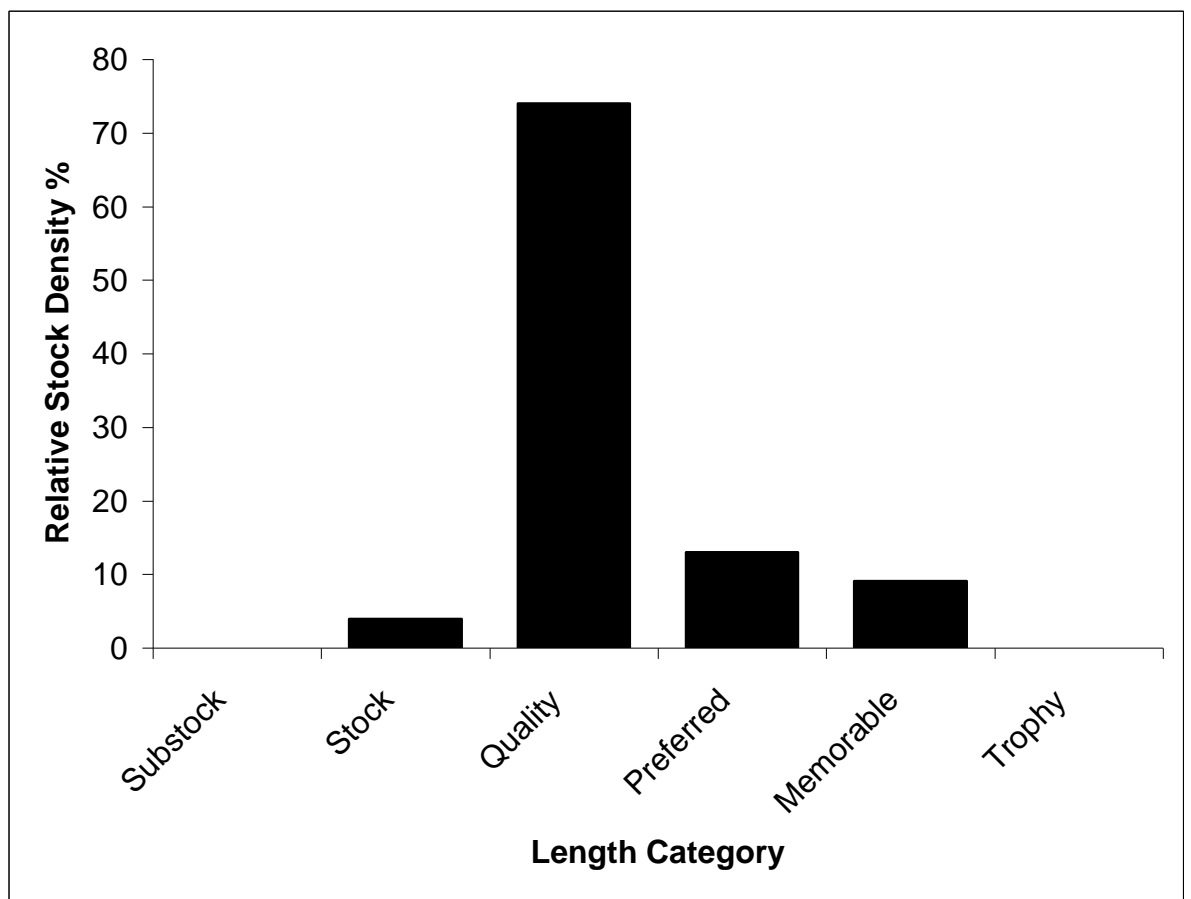


Figure 2. Relative stock density category for white bass from Wilson Reservoir, fall 2008.

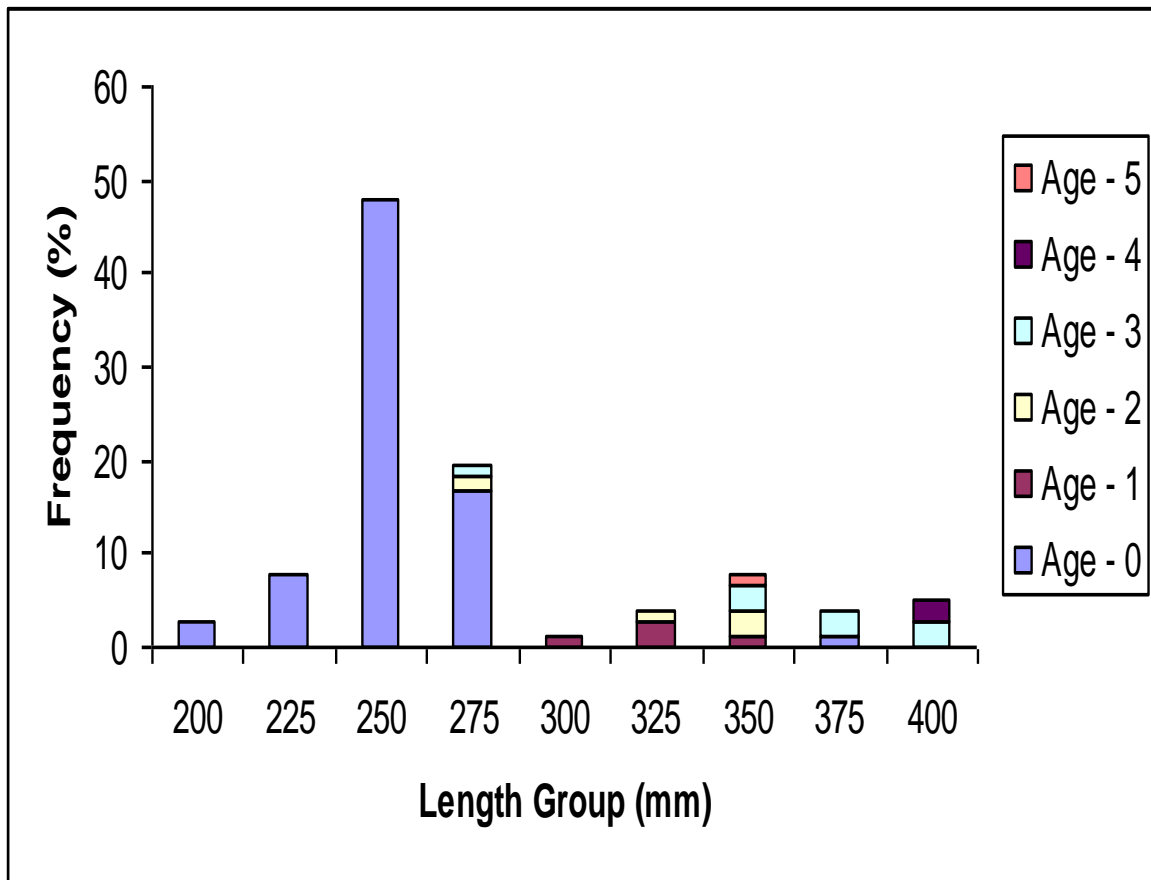


Figure 3. Length-at-age frequency for white bass (n=77) from Wilson Reservoir, fall 2008.

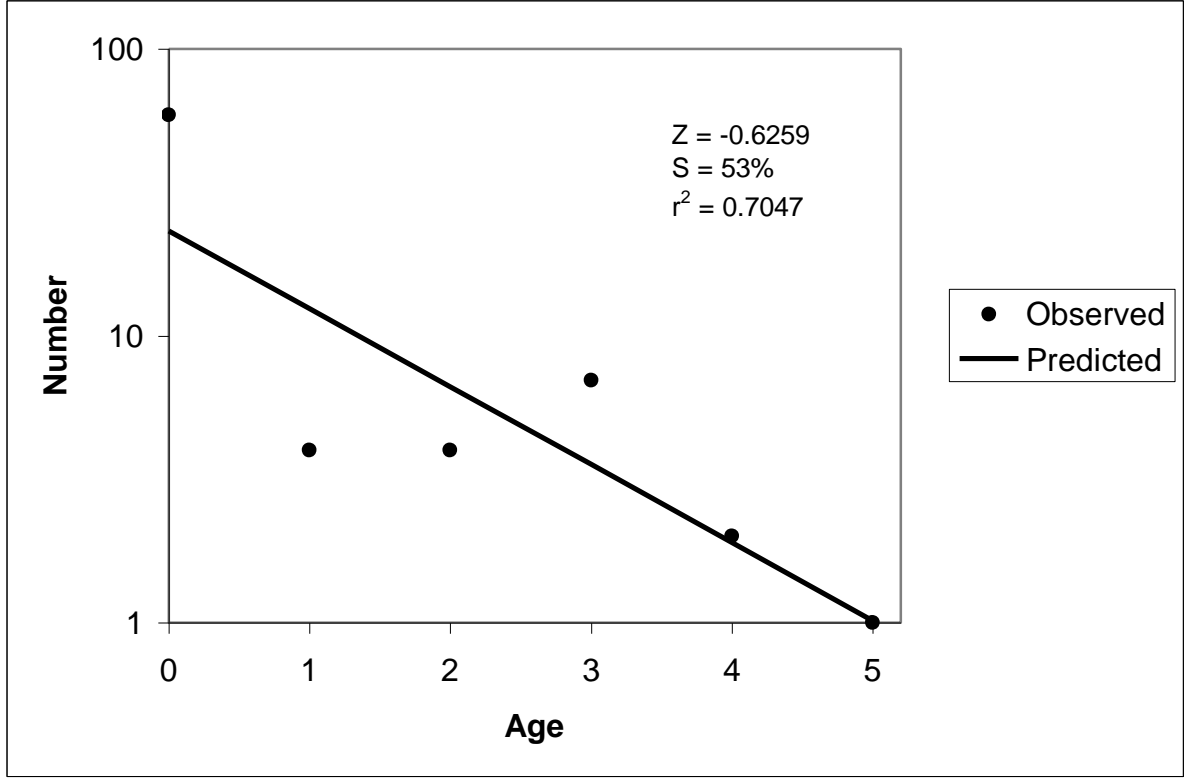


Figure 4. Catch curve regression (un-weighted) for white bass Age 0+ to Age 5+ from Wilson

Reservoir, fall 2008.