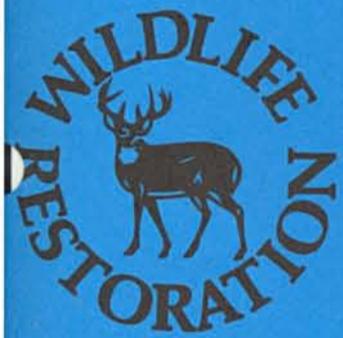


**SURVEY REPORT**

**OKLAHOMA FISHERIES MANAGEMENT PROGRAM**



**FISH MANAGEMENT SURVEY AND RECOMMENDATIONS**

**FOR**

**MOUNTAIN LAKE**

**2000**

## **Performance Report**

**State: Oklahoma**

**Grant. F-44-D-15**

**Project Title: Oklahoma Fisheries Management Program**

**Study Title: Surveys and Recommendations - Mountain Lake**

**Period Covered: 1 January 2000 - 31 December 2000**

### **Mountain Lake**

#### **ABSTRACT**

**Mountain lake was sampled in 2000 by spring electrofishing to determine fish population trends. Population levels of largemouth bass were very high. The catch per effort for bass  $\geq 350$  mm were above the minimum acceptable value for a quality fishery. The catch rate for bass  $< 200$  mm has increased from the last sample, indicating survival of young of the year bass is occurring. Body condition for all size groups were good. Fishing for quality size bass should be very good in 2001. The size structure of the bluegill population indicates that fish in all size groups are being heavily preyed upon by the larger bass in the lake.**

**Recommendations include: Stocking of adult threadfin shad in the lake to enhance the forage population; stock Florida bass**

**fingerlings to assist in promoting a quality fishery. Oklahoma Department of Wildlife Conservation (O.D.W.C.) Fisheries personnel should electrofish the lake in 2003 to assess the smallmouth bass and Florida bass stocking success.**

**Mountain lake was drained down to the creek channel in 1984 for repair of the flood gates on the dam. Florida largemouth bass were first stocked in 1985. A state record largemouth bass (14lbs 10oz ) was caught from the lake on March 25, 1993, it was a first - generation intergrade ( F<sub>1</sub> ) and was eight years old.**

## **INTRODUCTION**

**Mountain Lake impounds little Hickory Creek, 33.6 km northwest of Ardmore in Carter County, Oklahoma (Fig. 1). Mountain lake covers 93.2 surface hectares and was constructed in 1912 by the City of Ardmore. Mountain Lake has a mean depth of 2.5 m and a maximum of 15.4 m, a secchi disc visibility of around 600 cm in the main pool in August; turbidity is primarily from plankton. Fish habitat consists primarily of aquatic vegetation, rock and stump beds in the east arm of the lake. The lake was drained down to the creek channel in the summer of 1984 for repair of the gates on the dam. Florida largemouth bass were stocked in the lake in 1985. A State record largemouth bass weighing 14 pounds and 10 ounces was caught from the lake on March 25, 1993.**

**Fish species stocked in 2000 were C. Florida bass and threadfin shad (Table 1). The lake has a 330.2 mm to 609.6 mm slot length limit on black bass, which is enforced by the city of Ardmore.**

**Mountain lake was sampled in 2000 by spring electrofishing to evaluate largemouth bass and bluegill population trends.**

## **RESULTS**

### **Largemouth Bass**

- 1. Largemouth bass abundance from 2000 spring electrofishing (C/f=182.7) was above the minimum acceptable value for a quality fishery (C/f= 40). The total bass C/f has increased in recent sample years (Table 2).**
- 2. In 2000 spring electrofishing, the abundance of bass <200 mm increased from the last sample. Abundance for  $\geq 300$  mm and  $\geq 356$  mm bass were high, and the 200 - 299 mm declined the last two samples. No bass above  $\geq 540$  mm were collected in 2000.**
- 3. Body condition values ( $W_r$ ) were satisfactory for all length groups.**
- 4. Abundance, size structure and body condition values were acceptable at Mountain Lake, indicating a high quality bass fishery. Bass recruitment has increased from the last sample, The numbers of quality size bass  $\geq 356$  mm are high and should provide excellent fishing opportunities in the future. (O.D.W.C.) personnel should conduct a follow up electrofishing survey in 2003 to evaluate the largemouth bass population and check the genetics for Florida bass.**

## **Bluegill**

- 1. Bluegill abundance from 2000 spring electrofishing (C/f=22.7) was below the minimum acceptable value for a quality forage supply. The total bluegill C/f has decreased the past two samples (Table 3).**
- 2. In 2000 spring electrofishing, the abundance of bluegill  $\leq 75$  mm and  $\geq 150$  mm was unsatisfactory, while those 75 - 149 mm were acceptable. The abundance of bluegill in the  $\geq 150$  mm length group has increased in recent samples.**
- 3. Body condition values ( $W_t$ ) were satisfactory for all length groups.**
- 4. The size structure of the bluegill population indicates that fish in all the size groups are being heavily preyed up on by the larger bass in the lake. Supplemental stocking of adult threadfin shad in the spring of 2001 may help ease some of the predation on the bluegill population.**

## RECOMMENDATIONS

### Fish Stockings

1. **O.D.W.C. Fisheries personnel should stock 1,000 threadfin shad adults in the lake to enhance the forage population.**
2. **A total of 4,600 C. Florida bass should be stocked in 2001 to help maintain the Florida bass genetics within the lake.**

### Fish Surveys

1. **O.D.W.C. Fisheries personnel should spring electrofish the lake in 2003 to assess the largemouth bass and smallmouth bass population.**

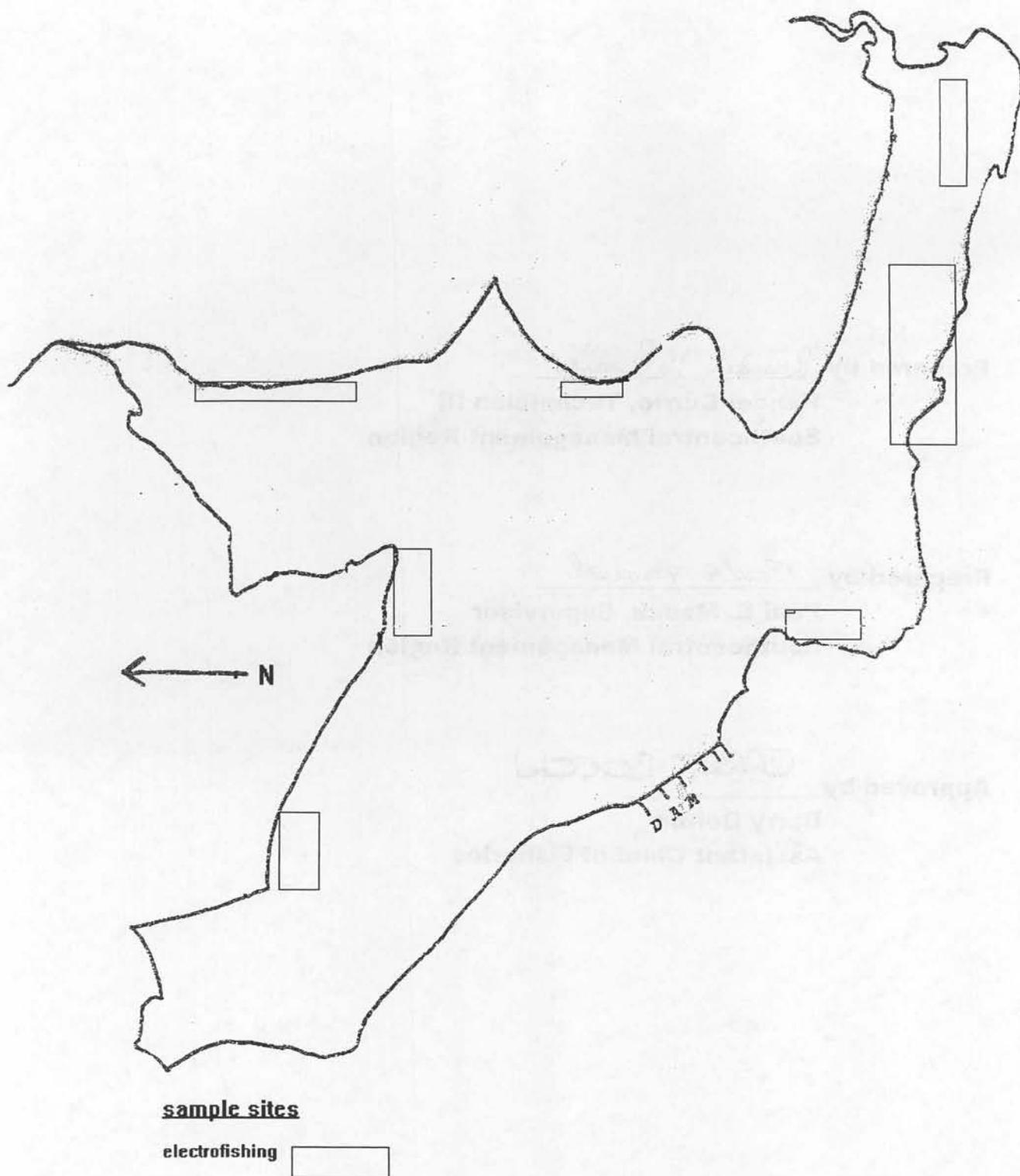
Prepared by Randel H Currie  
**Randel Currie, Technician III**  
**Southcentral Management Region**

Prepared by Paul E. Mauck  
**Paul E. Mauck, Supervisor**  
**Southcentral Management Region**

Approved by Barry Bolton  
**Barry Bolton**  
**Assistant Chief of Fisheries**

FIGURE 1

MOUNTAIN LAKE



**Table 1. Species, number and size of fish stocked in Mountain Lake 1985 - 2000.**

<b>DATE</b>	<b>SPECIES</b>	<b>NUMBER</b>	<b>SIZE</b>
1983	F. Largemouth bass	20,884	Fingerlings
1985	Bluegill sunfish	100,000	Fry
1985	Channel Catfish	20,100	Fingerlings
1986	Inland silversides	2,100	Adults
1986	Threadfin shad	61	Adults
1988	Threadfin shad	1,500	Adults
1990	Channel catfish	5,060	Fingerlings
1991	Smallmouth bass	4,000	Fingerlings
1991	Threadfin shad	1,700	Adults
1992	Channel catfish	6,400	Growouts
1992	Threadfin shad	3,000	Adults
1995	Threadfin shad	2,000	Adults
1996	C. Florida bass	4,600	Fingerlings
1996	Smallmouth bass	2,300	Fingerlings
1997	Smallmouth bass	3,000	Fingerlings
1998	Smallmouth bass	2,310	Fingerlings
1999	Largemouth bass	4,620	Fingerlings
2000	Threadfin shad	3,000	Adults
2000	C. Florida bass	4,800	Fingerlings

**Table 2. Total number (No.), catch rates (C/f), and relative weights (W<sub>r</sub>) by size groups of largemouth bass collected by spring electrofishing from Mountain Lake. Numbers in parentheses represent acceptable C/f values for a quality fishery. Acceptable W<sub>r</sub> values are  $\geq 90$ .**

Year	No.	Total ( $\geq 40$ )	<200 mm (15-45)		200-299 mm (15-30)		$\geq 300$ mm ( $\geq 15$ )		$\geq 356$ mm ( $\geq 10$ )		$\geq 540$ mm ( $\geq 2$ )	
		C/f	C/f	W <sub>r</sub>	C/f	W <sub>r</sub>	C/f	W <sub>r</sub>	C/f	W <sub>r</sub>	C/f	W <sub>r</sub>
1988	104	69.3	-	-	54.7	-	14.6	-	6.7	-	-	-
1993	163	108.7	22.7	97	38.7	102	47.3	90	13.3	83	0.67	102
1996	146	146	1.0	70	21.0	104	124	93	54.0	89	-	102
2000	137	182.7	16.0	104	18.7	107	148	92	137.3	92	-	-

**Table 3. Total number (No.), catch rates (C/f), and relative weights (W<sub>r</sub>) by size groups of bluegill collected by spring electrofishing from Mountain Lake . Numbers in parentheses represent acceptable C/f values for a quality fishery. Acceptable W<sub>r</sub> values are  $\geq 90$ .**

Year	Total ( $\geq 45$ )		<75 mm ( $\geq 10$ )		75-149 mm (20-100)		$\geq 150$ mm ( $\geq 15$ )	
	No.	C/f	C/f	W <sub>r</sub>	C/f	W <sub>r</sub>	C/f	W <sub>r</sub>
1988	37	24.7	1.3	-	1.3	-	22.0	-
1993	116	77.3	51.3	-	23.3	70	2.7	98
1996	49	49.0	25.0	-	22.0	72	2.0	91
2000	17	22.7	1.3	-	16.0	92	5.3	103

Table 2. Total number (N), catch rates (CR), and relative weight (RW) by size class (mm) of *Microgadomus microlepis* in the lower Chesapeake Bay, 1982-1983. Values are means  $\pm$  standard error (SE). N = number of hauls; CR = number of fish per haul; RW = relative weight (%).

Year	Haul No.	Total (N)		Catch Rate (CR)		Relative Weight (RW)	
		N	SE	CR	SE	W	SE
1982	87	247	15.4	4.3	0.03	2.0	0.1
	88	116	7.3	2.3	0.1	2.7	0.3
1983	89	490	29.4	7.9	0.03	2.0	0.1
	90	281	17.3	10.0	0.3	2.3	0.2