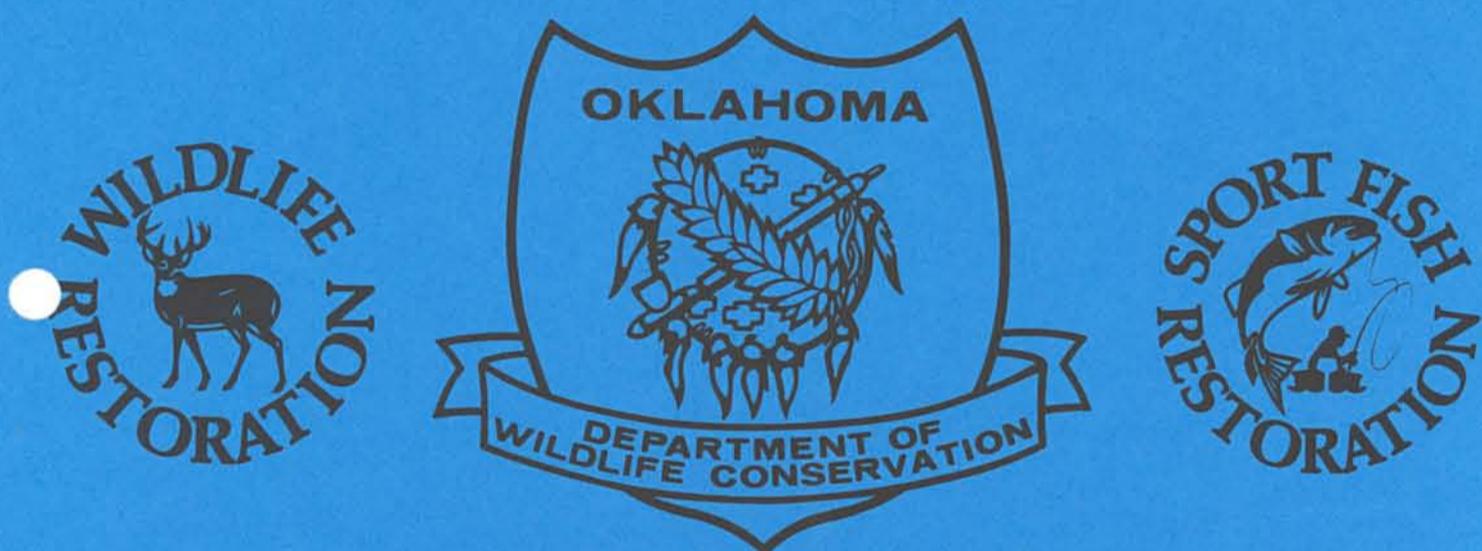


SURVEY REPORT

OKLAHOMA FISHERIES MANAGEMENT PROGRAM



FISH MANAGEMENT SURVEY AND RECOMMENDATIONS

FOR

WAYNE WALLACE RESERVOIR

1998

## Performance Report

**State:** Oklahoma **Project No.** F-44-D-13

**Project Title:** Oklahoma Fisheries Management Program

**Study Title:** Surveys and Recommendations- Wayne Wallace Reservoir

**Period Covered:** 1 January 1998 - 31 December 1998

### ABSTRACT

Wayne Wallace Reservoir was sampled by spring electrofishing in 1998 to determine fish population trends. Largemouth bass were in good abundance (C/f= 61.3) and was greater than the last three samples dating back to 1986. Spotted bass were high in abundance (C/f=76). Bluegill and longear sunfish were high in abundance (C/f=344 and 184) respectively. Species collected in low numbers include green sunfish and warmouth. Recommendations made include: 1. Stocking 3,760 channel catfish growouts in 1999. 2. Refurbish existing brush fish attractors as needed. 3. Spring electrofishing should be conducted in 2000 to determine population trends.

## INTRODUCTION

Lake Wayne Wallace impounds the Fourche Maline Creek, 8 km north of Wilburton in Latimer County, Oklahoma (Figure 1) within the boundaries of Robbers Cave State Park. Wayne Wallace Reservoir covers 94 acres and was constructed by the Oklahoma Department of Wildlife Conservation (ODWC). Fish habitat consists primarily of rock and vegetation. Major fisheries include largemouth bass, spotted bass, white crappie and channel catfish.

Recent fish stockings are shown in (Table 1). Habitat improvements include a 3.3 to 6.6 foot water level drawdown in December, 1980, allowing ODWC Fish Division personnel to make improvements in lake access roads and fish habitat structures. On September 19, 1985, nine catfish spawning containers were installed to aid in natural reproduction and ten new containers were added in 1986. Also, in 1986, four brush fish attractors were placed into the lake. During the fall of 1990, a new gate valve stem was installed in the drain structure to replace one that was damaged during an attempted lake level drawdown. A 356 mm minimum length limit on black bass is currently in effect on Wayne Wallace lake.

Lake Wayne Wallace was sampled in 1998 by spring electrofishing to evaluate the black bass, sunfish and shad populations.

## RESULTS

### Largemouth Bass

1. Largemouth bass abundance from 1998 spring electrofishing ( $C/f=61.3$ ) was above the minimum acceptable value for a quality fishery ( $C/f \geq 40$ ). The total bass  $C/f$  has increased in recent sample years (Table 2).
2. In 1998 spring electrofishing, the abundance of bass between 200-299 mm,  $\geq 300$  mm and  $\geq 356$  mm were within acceptable values and those  $< 200$  mm were below desired levels. The abundance of bass  $\geq 300$  mm and  $\geq 356$  mm increased compared to the last sample conducted in 1995 (Table 2).
3. Body condition values ( $W_r$ ) were slightly below the acceptable value in all size groups. Body condition values have remained stable in recent samples (Table 2).
4. Abundance, size structure and body condition values were generally acceptable at lake Wayne Wallace, indicating a quality bass fishery. Angling for largemouth bass at lake Wayne Wallace should be good in 1999.

### Spotted Bass

1. Spotted bass abundance from 1998 spring electrofishing ( $C/f=76.0$ ) was above the minimum acceptable value for a quality fishery ( $C/f \geq 40$ ). The total spotted bass  $C/f$  has increased in recent sample years (Table 3).
2. In 1998 spring electrofishing, the abundance of bass  $< 200$  mm and between 200-299 mm were within or above acceptable values. The abundance of spotted bass  $\geq 300$  mm and  $\geq 356$  mm remained stable compared to recent samples and were below desired levels (Table 3).
3. Body condition values ( $W_r$ ) were unsatisfactory for spotted bass in all size groups, indicating competition for available forage is occurring. Body condition values have increased over recent samples (Table 3).
4. Size structure and body condition values were below acceptable values at lake Wayne Wallace indicating a low quality spotted bass fishery. Angling for small spotted bass at Wayne Wallace lake should be good in 1999.

### Bluegill

1. Bluegill abundance from 1998 spring electrofishing ( $C/f=344$ ) was above the minimum acceptable value for a quality forage supply ( $C/f \geq 45$ ). The total bluegill  $C/f$  has increased in recent sample years (Table 4).

2. In 1998 spring electrofishing, the abundance of bluegill < 75 mm and between 75-149 mm was above and within acceptable values respectively. The abundance of bluegill increased in recent samples (Table 4).
3. Body condition values ( $W_r$ ) were acceptable for bluegill  $\geq 150$  mm, but below desired levels for those between 75-149 mm. Body condition values have been stable in recent samples (Table 4).
4. Bluegill should continue to provide good forage in Wayne Wallace lake.

#### Longear sunfish

1. Longear sunfish abundance from 1998 spring electrofishing ( $C/f=184$ ) was above the minimum acceptable value for a quality forage supply ( $C/f \geq 45$ ), (Table 5).
2. In 1998 spring electrofishing, the abundance of longear < 75 mm and between 75-149 mm was above acceptable values (Table 5).
3. Longear should continue to provide good forage in lake Wayne Wallace.

### Gizzard Shad

1. Shad abundance from 1998 spring electrofishing ( $C/f=0.0$ ) was greatly below the minimum acceptable value for a quality forage supply ( $C/f \geq 40$ ). The total shad  $C/f$  has declined in recent sample years (Table 6).
2. In spring electrofishing, no shad were collected, indicating a poor forage supply. The abundance of shad  $< 200$  mm decreased compared to recent samples (Table 6).
3. In spring electrofishing body condition values ( $W_r$ ) were not determined since no gizzard shad were sampled.
4. The gizzard shad population should remain in low numbers and provide little forage in 1999.

### Species collected in low numbers

1. Channel catfish were not collected during spring electrofishing. However, the catfish population is maintained by stocking approximately 1,890 to 5,812 channel catfish growouts annually.
2. Other species collected in low numbers include green sunfish (26) and warmouth (2).

## RECOMMENDATIONS

### Fish Attractor Structures

1. All existing structures should be refurbished as needed.

### Fish Stockings

1. Stock 3,760 channel catfish growouts in 1999.

### Fish Surveys

1. Spring electrofishing should be conducted in 2000 to determine population trends.

### Fishing Regulations

1. The 356 mm minimum length limit on black bass should continue.

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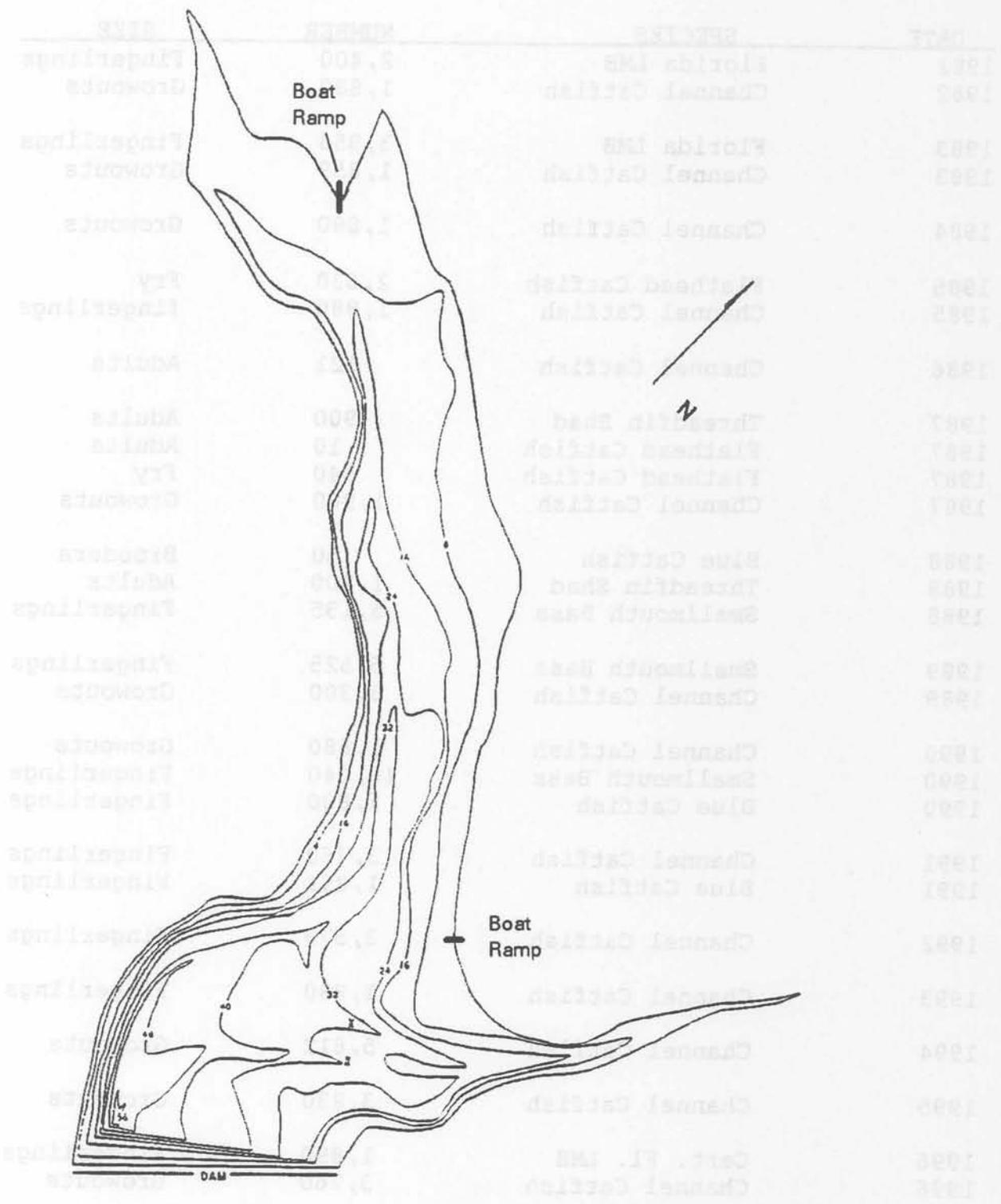
Southeast Regional Fisheries Technician II

Approved by Barry Bolton

Barry Bolton

Assistant Chief of Fisheries

# FIGURE 1: LAKE WAYNE WALLACE



**SAMPLING SITES:**

**SPRING ELECTROFISHING: ENTIRE SHORELINE**

Table 1. Species, number and size of fish stocked in Wayne Wallace Reservoir from 1982-1998.

DATE	SPECIES	NUMBER	SIZE
1982	Florida LMB	2,400	Fingerlings
1982	Channel Catfish	1,880	Growouts
1983	Florida LMB	3,956	Fingerlings
1983	Channel Catfish	1,859	Growouts
1984	Channel Catfish	1,880	Growouts
1985	Flathead Catfish	2,630	Fry
1985	Channel Catfish	1,880	fingerlings
1986	Channel Catfish	121	Adults
1987	Threadfin Shad	900	Adults
1987	Flathead Catfish	10	Adults
1987	Flathead Catfish	940	Fry
1987	Channel Catfish	1,900	Growouts
1988	Blue Catfish	50	Brooders
1988	Threadfin Shad	1,900	Adults
1988	Smallmouth Bass	5,135	Fingerlings
1989	Smallmouth Bass	5,525	Fingerlings
1989	Channel Catfish	3,300	Growouts
1990	Channel Catfish	1,880	Growouts
1990	Smallmouth Bass	10,240	Fingerlings
1990	Blue Catfish	1,800	Fingerlings
1991	Channel Catfish	3,760	Fingerlings
1991	Blue Catfish	1,891	Fingerlings
1992	Channel Catfish	3,579	Fingerlings
1993	Channel Catfish	1,880	Fingerlings
1994	Channel Catfish	5,812	Growouts
1995	Channel Catfish	3,830	Growouts
1996	Cert. Fl. LMB	1,890	Fingerlings
1996	Channel Catfish	3,760	Growouts
1997	Channel Catfish	3,760	Growouts
1998	Channel Catfish	3,760	Growouts

Table 2. Total number (No.), catch rates (C/f), and relative weights ( $W_r$ ) by size groups of largemouth bass collected by spring electrofishing from Wayne Wallace Reservoir. Numbers in parentheses represent acceptable C/f values for a quality fishery. Acceptable  $W_r$  values are  $\geq 90$ .

Year	Total		<200 mm		200-299 mm		>300 mm		>356 mm	
	No.	C/f	C/f	$W_r$	C/f	$W_r$	C/f	$W_r$	C/f	$W_r$
	( $\geq 40$ )		(15-45)		(15-30)		( $\geq 15$ )		( $\geq 10$ )	
1986	133	40.9	17.8	86	17.8	81	5.2	87	3.4	89
1990	111	34.2	1.8	95	10.8	86	21.5	84	7.7	85
1995	104	52.0	17.0	86	17.0	83	18.0	83	5.5	87
1998	46	61.3	4.0	-	16.0	86	41.3	85	13.3	87

Table 3. Total number (No.), catch rates (C/f), and relative weights ( $W_r$ ) by size groups of **spotted bass** collected by spring electrofishing from Wayne Wallace Reservoir. Numbers in parentheses represent acceptable C/f values for a quality fishery. Acceptable  $W_r$  values are  $\geq 90$ .

Year	Total ( $\geq 40$ )		<200 mm (15-45)		200-299 mm (15-30)		$\geq 300$ mm ( $\geq 15$ )		$\geq 356$ mm ( $\geq 10$ )	
	No.	C/f	C/f	$W_r$	C/f	$W_r$	C/f	$W_r$	C/f	$W_r$
1986	19	5.8	1.2	86	3.7	80	0.9	83	0.0	-
1990	59	18.2	1.8	85	13.8	81	2.5	81	0.0	-
1995	58	29.0	7.5	69	13.5	75	8.0	79	0.0	-
1998	57	76.0	22.7	89	45.3	81	8.0	84	1.3	-

Table 4. Total number (No.), catch rates (C/f), and relative weights ( $W_r$ ) by size groups of **Bluegill** collected by spring electrofishing from Wayne Wallace Reservoir. Numbers in parentheses represent acceptable C/f values for a quality fishery. Acceptable  $W_r$  values are  $\geq 90$ .

Year	No.	Total	<75 mm	75-149 mm		$\geq 150$ mm		
		( $\geq 45$ )	( $\geq 10$ )	(20-100)		( $\geq 15$ )		
		C/f	C/f	$W_r$	C/f	$W_r$	C/f	$W_r$
1986	148	45.5	5.8	-	35.4	97	4.3	80
1990	96	29.5	4.6	-	20.0	99	4.9	91
1995	58	116.0	62.0	-	54.0	98	0.0	-
1998	86	344.0	284.0	-	52.0	81	8.0	98

Table 5. Total number (No.), catch rates (C/f), and relative weights ( $W_r$ ) by size groups of **longear** collected by spring electrofishing from Wayne Wallace Reservoir. Numbers in parentheses represent acceptable C/f values for a quality fishery. Acceptable  $W_r$  values are  $\geq 90$ .

		Total ( $\geq 45$ )	<75 mm ( $\geq 10$ )	75-149 mm (20-100)	$\geq 150$ mm ( $\geq 15$ )
Year	No.	C/f	C/f	C/f	C/f
1986	86	26.5	3.1	23.4	0.0
1990	7	2.2	0.3	1.8	0.0
1995	53	106.0	32.0	64.0	0.0
1998	46	184.0	76.0	108.0	0.0

Table 6. Total number (No.), catch rates (C/f), and relative weights ( $W_r$ ) by size groups of **gizzard shad** collected by spring electrofishing, gill netting, and seining from Wayne Wallace Reservoir. Numbers in parentheses represent acceptable C/f values for a quality fishery. Acceptable  $W_r$  values are  $\geq 90$ .

Year	Spring Electrofishing				Fall Gillnetting				Age 0	
	No.	C/f	C/f	$W_r$	No.	C/f	C/f	$W_r$	No.	C/f
1986	66	20.3	13.5	87						
1990	11	3.4	1.5	86						
1995	2	4.0	0.0	-						
1998	0	0.0	0.0	-						

