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**SURVEY REPORT**

**OKLAHOMA FISHERIES MANAGEMENT REPORT**



**FISH MANAGEMENT SURVEYS AND RECOMMENDATIONS**

**FOR**

**Wes Watkins Lake**

**2005**

## Performance Report

State: Oklahoma

Project No. F-44-D-20

Project Title: Oklahoma Fisheries Management Program

Study Title: Surveys and Recommendations - Wes Watkins Lake

Period Covered: 1 January 2005 - 31 December 2005

### LAKE WES WATKINS

#### ABSTRACT

Wes Watkins lake was sampled in 2005 by spring electrofishing and summer seining to monitor trends in the largemouth bass population. Largemouth bass abundance was increased considerably from the previous survey as a result of good recruitment of the 2004 year-class. Results of seining indicated good largemouth bass reproductive success in 2005. Of age 1 largemouth bass collected for electrophoretic testing, 16% were either pure strain Florida bass or  $F_1$  hybrids.

A largemouth bass fish kill was observed in 2003, and tissue samples collected confirmed the kill was due to largemouth bass virus. Approximately 58% of the bass tested were found to be positive for the virus.

Recommendations made include stocking Florida bass fingerlings in 2006. The regulation of catch and release only for bass should be maintained. Introduced aquatic vegetation will continue to be monitored.

## INTRODUCTION

Wes Watkins Lake was constructed in 1997 and was opened to fishing in August, 1999 with a catch and release regulation in effect on all species. In October, 1999, harvest of all species except largemouth bass was allowed. State fishing regulations were implemented for species other than crappie which have a creel limit of 15 per day and a minimum length limit of 254 mm (10 inches).

Lake Wes Watkins impounds North Deer Creek 0.9 km south of McCloud in Pottawatomie County, Oklahoma (Fig. 1). Wes Watkins covers 457 surface hectares and was constructed in 1997 by the Pottawatomie County Development Authority. Timber was mostly cleared from the lake bottom during construction except for the upper third of the lake. Wes Watkins Lake has a mean depth of 3.3 m and a maximum depth of 9.5 m, a shoreline length of 21.7 km, a water exchange rate of 0.39, and a secchi disc visibility of around 91 cm in the main pool in August; turbidity is primarily from plankton. Fish habitat consists primarily of aquatic vegetation. Standing timber is abundant in the west end of the lake and some coves on the south side of the lake.

Initial fish stockings were made in 1997, 1998 and 1999. Florida largemouth bass fingerlings were stocked in 2000, 2001, 2002 and 2004 (Table 1). Aquatic vegetation (water willow and

coontail) was introduced in 1997 and 1998. Also, two welded wire enclosures were constructed in 1999 and planted with coontail. Additional planting of water willow were made in 2000 in areas susceptible to shoreline erosion. Boating access work participated in has consisted of two boat ramps, two parking lots, two boat docks and restrooms.

## RESULTS

### Largemouth Bass

1. Largemouth bass abundance from 2005 spring electrofishing ( $C/f=47.1$ ) was above the minimum acceptable value for a quality fishery ( $C/f \geq 40$ ). Their abundance had increased considerably from the previous survey (Table 2).
2. In 2005 spring electrofishing, abundance of bass  $< 200$  mm was high and indicated excellent recruitment of the 2004 year-class. Abundances of size classes 200-299 mm and  $\geq 300$  mm were lower than the desired ranges, while abundance of those  $\geq 356$  mm was adequate (Table 2). The largest largemouth bass collected in 2005 weighed 2.4 kg (5.2 lbs.).
3. Results of summer seining ( $C/f=7.8$ ) indicated good largemouth bass reproductive success in 2005. Reproductive success has been good for the past four years (Table 2).

4. Body condition values ( $W_r$ ) were good for all size classes and were improved from those seen in previous surveys (Table 2).
5. Results of electrophoretic testing indicate that, of the 2004 year-class, 2% were pure Florida strain, 14% were  $F_1$  hybrids, 24% were  $F_x$  hybrids and 60% were pure northern strain bass.
6. Largemouth bass abundance had increased considerably from the previous survey mainly as a result of a strong 2004 year-class. Abundance of bass  $\geq 356$  mm in length was adequate for a quality fishery. Results of electrophoretic testing indicates only marginal success of Florida bass stockings.

## **RECOMMENDATIONS**

### **Fish Stockings**

1. Florida largemouth bass are being stocked on an every other year basis, and it is recommended that 22,840 (20/a) Florida largemouth bass fingerlings (3 inch) be stocked in 2006 to continue introducing Florida bass genes in the bass population to improve trophy potential.

### **Fishing Regulations**

1. The regulation of catch and release only for bass should be maintained for 2006.

**Habitat improvement**

1. Success of aquatic vegetation introductions made in recent years will be monitored.

**Fish Surveys**

1. Spring electrofishing will be conducted periodically to monitor the largemouth bass population and determine success of Florida bass stockings.

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Table 1. Species, number and size of fish stocked in Wes Watkins Lake, 1997 - 2005.

DATE	SPECIES	NUMBER	SIZE
1997	Northern LMB	112,500	fingerlings
	Channel catfish	71,319	fingerlings
	Bluegill	405,250	fingerlings
	Redear	145,106	fingerlings
1998	Northern LMB	114,200	fingerlings
	Channel catfish	11,976	fingerlings
	Bluegill	232	adult
1999	Northern LMB	115,220	fingerlings
	Channel catfish	11,500	fingerlings
2000	Florida LMB	23,360	fingerlings
2001	Florida LMB	22,950	fingerlings
2002	Florida LMB	23,012	fingerlings
2003	Threadfin shad	10,000	fingerlings
2004	Florida LMB	22,930	fingerlings
	Inland silversides	15,000	adult

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

Year	Total		Spring Electrofishing						Seining		
	No.	C/f	<200 mm (15-45)	200-299 mm (15-30)	>300 mm (≥15)	>356 mm (≥10)	Age 0 (≥1.0)				
1998	99	99.0	71.0	90	23.0	87	5.0	112	1.0	115	
1999	146	44.9	4.3	88	11.4	90	29.2	94	10.5	98	
2000	93	46.5	8.0	87	2.5	89	36.0	95	25.0	99	
2001	165	55.0	11.0	91	8.3	88	35.7	96	32.3	96	
2002	160	53.3	13.3	97	12.0	93	28.0	94	23.0	96	11.8
2003											106.4
2004	67	14.1	1.7	--	0.0	--	12.4	87	12.4	87	23.9
2005	212	47.1	32.2	111	1.3	102	13.6	98	12.0	97	7.8