1.6
33.0
42.4
47.3

SURVEY REPORT

OKLAHOMA FISHERIES MANAGEMENT REPORT

FISH MANAGEMENT SURVEYS AND RECOMMENDATIONS

FOR

SHAWNEE TWIN LAKE #2

2005

Performance Report

State: Oklahoma Project No. F-44-D-20

Project Title: Oklahoma Fisheries Management Program

Study Title: Surveys and Recommendations - Shawnee Twin Lake #2

Period Covered: 1 January 2005 - 31 December 2005

SHAWNEE TWIN LAKE #2

ABSTRACT

Shawnee Twin Lake #2 was sampled by fall, night electrofishing in 2005 to monitor success of the 2005 saugeye stocking. The C/f of 31.3 for saugeye <300 mm in length indicated good success of the 2005 stocking.

Recommendations were made to stock saugeye and channel catfish fingerlings in 2006 and to conduct periodic fish population surveys to monitor trends in fish populations. The minimum length limit of 356 mm on bass should be maintained.

INTRODUCTION

Shawnee Twin Lakes are located 11.3 km west of Shawnee in Pottawatomie County, Oklahoma (Figure 1). These two lakes impound South Deer Creek and are connected by a 3.0 m deep canal. Shawnee Twin Lake #2 covers 445.2 surface hectares and was constructed in 1960 by the City of Shawnee. Shawnee Twin Lake #2 has a mean depth of 5.0 m and a maximum depth of 13.7 m, a shoreline development ratio of 3.8 and a secchi disc visibility of around 102 cm in the main pool in August; turbidity is primarily from suspended clay. Fish habitat consists primarily of aquatic vegetation (water willow). Lake levels have been very low for the past two years.

Fingerling saugeye stockings made from 1988 to 1993 were unsuccessful in establishing a fishery perhaps because of immigration of these fish into Shawnee Twin #1. A stocking of saugeye fry in 1994 was also unsuccessful as none of these fish were collected in a subsequent survey. However, fingerling stockings made since 1995 have been successful, and a good fishery has developed.

Several stockings of various forage and game fish species have been made in past years; the most recent being that of saugeye and channel catfish fingerlings (Table 1). Three fish attractor habitat sites have been established and are maintained. A fishing and boating access project consisting of extension of a boat ramp; installation of a boat dock and fishing dock; and

renovation of the parking lot was completed in 1990. The parking lot was asphalted in 2000. Other fish management activities have included implementing a 356 mm minimum length limit on largemouth bass on July 30, 1987.

Shawnee Twin Lake #2 was sampled in 2005 by fall, night electrofishing to monitor success of the 2005 saugeye stocking.

RESULTS

Saugeye

1. Saugeye abundance in 2005 fall, night electrofishing (C/f=044.7) exceeded the minimum acceptable value for a quality fishery (C/f=≥15). Their abundance had increased since the prior survey (Table 2).
2. Abundances of saugeye of all size classes exceeded minimum desired levels (Table 2). The largest saugeye collected weighed 0.8 kg (1.8 lbs.).
3. Body condition values (W_r) were poor for all size classes (Table 2). However, poor body condition for saugeye collected in the fall is a common occurrence in Oklahoma reservoirs.
4. It appears that saugeye have become established through stockings, and that a decent fishery has developed. The catch rate for saugeye <300 mm indicated good success of the 2005 stocking.

RECOMMENDATIONS

Fish Stockings

1. It is recommended that 22,000 38 mm saugeye fingerlings (20/acre) be stocked in 2006 to maintain the fishery.
2. It is recommended that 22,000 178 mm channel catfish fingerlings be stocked in 2006 to supplement the population.

Fish Surveys

1. Periodic electrofishing and gill net surveys will be conducted to monitor trends in the fish populations.

Fishing Regulations

1. It is recommended that the 356 mm (14 inch) minimum length limit on bass be maintained.

Prepared by Garland Wright

Fish Supervisor

Table 1. Species, number and size of fish stocked in Shawnee Twin #2 Lake, 1974 - 2005.

DATE	SPECIES	NUMBER	SIZE
1974	Florida LMB	2,000	fry
1975	Hybrid LMB	20,000	fry
	Threadfin shad	10,000	adults
	Inland silversides	6,000	adults
1980	Threadfin shad	4,900	adults
1983	Threadfin shad	1,100	adults
1988	Saugeye	22,000	fingerlings
1989	Saugeye	22,000	fingerlings
1990	Saugeye	22,200	fingerlings
1993	Saugeye	22,000	fingerlings
1994	Saugeye	150,000	fry
1995	Saugeye	22,000	fingerlings
1997	Saugeye	22,000	fingerlings
1998	Saugeye	31,200	fingerlings
1999	Saugeye	22,550	fingerlings
2000	Saugeye	22,200	fingerlings
2001	Saugeye	24,000	fingerlings
2002	Saugeye	23,000	fingerlings
2003	Channel catfish	22,500	fingerlings
2004	Saugeye	22,000	fingerlings
	Channel catfish	11,066	fingerlings
2005	Saugeye	22,400	fingerlings
	Channel catfish	22,013	fingerlings

Table 2. Total number (No.), catch rates (C/f), and relative weights (W_r) by size groups of **saugeye** collected by night electrofishing from Shawnee Twin #2 Lake. Numbers in parentheses represent acceptable C/f values for a quality fishery. Acceptable W_r values are ≥90.

	Total (≥15)		<300 mm (≥10)		300-399 mm (≥3)		≥400 mm (≥2)	
Year	No.	C/f	C/f	W_r	C/f	W_r	C/f	W_r
1990	8	3.2	2.4	95	0.0	--	0.8	88
1993	8	4.0	3.5	97	0.0	--	0.5	88
1994	3	3.0	0.0	--	3.0	80	0.0	--
1995	33	22.0	20.7	92	0.0	--	1.3	81
1996	37	18.5	15.5	96	3.0	79	0.0	--
1997	69	34.5	29.0	85	5.0	73	0.5	74
1998	135	67.5	55.5	89	12.0	80	0.0	--
1999	106	53.0	42.5	85	10.5	76	0.0	--
2000	89	59.3	45.3	91	13.3	75	0.1	78
2001	51	34.0	22.7	90	11.3	75	0.0	--
2005	67	44.7	31.3	85	11.3	72	2.7	64