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SURVEY REPORT
OKLAHOMA FISHERIES MANAGEMENT PROGRAM



FISH MANAGEMENT SURVEY AND RECOMMENDATIONS
FOR
STIGLER CITY LAKE
2004

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FISH MANAGEMENT SURVEY AND RECOMMENDATIONS
FOR
STIGLER CITY LAKE
2004

Job Performance Report
Oklahoma Fisheries Management Program
Federal Aid Project No. F-44-D-19
Fish Management Surveys and Recommendations
for
Stigler City Lake

Prepared By: Billy Fillman

PERFORMANCE REPORT

State: Oklahoma

Project No.: F44-D-19

Project Title: Oklahoma Fisheries Management Program

Study Title: Surveys and Recommendations - Stigler City Lake

Period Covered: 1 January 2004 - 31 December 2004

Lake: Stigler City Lake

ABSTRACT

Stigler City Lake (Lake John Wells) was sampled in 2004 by spring electrofishing to assess populations of largemouth bass and fall gillnetting to assess channel catfish populations. Largemouth bass were high in abundance, ($C/f = 76$) while relative weights were below acceptable values. Abundance of channel catfish decreased. No threadfin shad were collected. The threadfin shad population was decimated by the harsh winter of 2000. Recommendations are to continue to stock channel catfish and threadfin shad to increase food resources for sport fish.

INTRODUCTION

Stigler City Lake (Lake John Wells) is located 1 kilometer southeast of Stigler in Haskell County, Oklahoma and is an impoundment of a tributary of Sans Bois Creek (Figure 1). Stigler City Lake was constructed in 1936 by the City of Stigler for use as water supply. The reservoir covers 79 surface hectares and has a mean depth of 3 meters and a maximum depth of 15 meters. It is a moderately clear reservoir with a secchi disc visibility of around 2 meters; turbidity is primarily from plankton. Fish habitat consists primarily of aquatic vegetation and rock in the lower end and some flooded timber and submerged vegetation in the upper end. Habitat improvements include 21 catfish spawning containers and 4 brushpiles. Facilities include a concrete boat ramp and a small floating dock.

Threadfin shad have been stocked in the past to provide additional food resources for sport fish but died off due to the harsh winter of 2000. Other stockings have included channel catfish and white amur (Table 1).

There are no special regulations in effect at Stigler City Lake although a reduced creel for channel catfish may be necessary to protect the stock.

RESULTS

Largemouth Bass

1. Largemouth bass abundance from spring electrofishing ($C/f = 76$) was above the minimum acceptable value for a quality fishery ($C/f = 40$).
2. Catch rate of fish ≥ 356 was 2, which was below the acceptable level for a quality fishery ($C/f \geq 40$).
3. Body condition values (W_r 's) of largemouth bass in all length groups were below acceptable value for a quality fishery (Table 2).

Channel Catfish

1. Channel catfish catch rate from fall gillnetting ($C/f = 0.167$) was below the minimum acceptable level for a quality fishery ($C/f \geq .20$).
2. Catch rate of fish ≥ 300 mm was 0.12 which was considered acceptable for a quality fishery ($C/f \geq .10$).
3. Body condition values (W_r 's) of channel catfish in all length groups were below acceptable values (Table 3).

Crappie (combined)

1. The white crappie catch rate (0.1) was below the minimum acceptable values for a quality fishery ($C/f \geq .20$, only 10 were sampled in 2004) whereas the black crappie catch rate (0.26) was above the minimum for a quality fishery. (Table 4).
2. Body condition values (W_r) of white crappie were below acceptable limits for a quality fishery and black crappie (Table 4) in all length groups were acceptable.

RECOMMENDATIONS

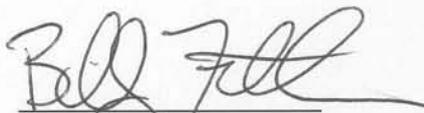
Fish Stockings

1. Stock threadfin shad as an additional food resource for sport fish when the threat of spreading LMBV is minimized.
2. Stock 4,000 fingerling channel catfish to supplement existing population.

Fish Surveys

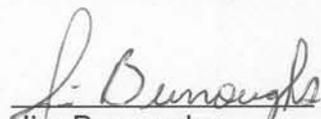
1. Conduct fall gillnetting survey in 2006 to monitor changes in channel catfish and crappie population *if* we are able to stock threadfin shad as an additional food source.

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Table 1. Species, number and size of fish stocked in Stigler City Lake, 1983-2001.

Year	Species	Number	Size
1983	White Amur	320	8-14
1983	White Amur	679	10-16
1984	Channel Catfish	15,000	3
1984	Channel Catfish	4,950	3
1984	Channel Catfish	450	6-12
1985	Channel Catfish	15,000	3.5
1987	Channel Catfish	14,875	4
1988	Channel Catfish	15,000	3
1989	Channel Catfish	15,000	3
1992	Channel Catfish	7,761	6.5
1994	Channel Catfish	8,000	7.0
1995	Channel Catfish	8,000	7.0
1995	Threadfin Shad	250	3.0
1996	Channel Catfish	8,000	7.0
1997	Channel Catfish	4,085	7.0
1999	Threadfin Shad	1,000	3.0
2000	Channel Catfish	4,000	7.0
2001	Channel Catfish	4,004	7.0

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 Stigler City Lake. Numbers in parentheses represent acceptable C/f values for a quality fishery. Acceptable W_r values are ≥ 90 .

Year	Total (≥ 40)		<200 mm (15-45)		200-299 mm (15-30)		>300 mm (≥ 15)		>356 mm (≥ 10)	
	No.	C/f	C/f	W_r	C/f	W_r	C/f	W_r	C/f	W_r
1992	100	100	25	76	67	74	8	70	1	67
1996	124	99.2	20.8	85	69.6	77	8.8	77	0.8	80
2004	76	76	1	--	64	80	11	80	2	80

Table 3. Total number (No.), catch rates (C/f), and relative weights (W_r) by size groups of channel catfish collected during Fall gillnetting surveys from Stigler City Lake. Numbers in parentheses represent acceptable C/f values for a quality fishery. Acceptable W_r values are ≥ 90 .

Year	Total ($\geq .20$)		< 300 mm ($\geq .10$)		≥ 300 mm ($\geq .10$)		≥ 400 mm ($\geq .05$)	
	No.	C/f	C/f	W_r	C/f	W_r	C/f	W_r
1996	23	0.20	0.09	93	0.12	85	0.05	82
1999	27	0.23	0.02	92	0.21	84	0.11	83
2001	23	0.35	0.12	98	0.24	92	0.19	91
2004	18	0.17	0.05	87	0.12	85	0.04	86

Table 4. Total number (No.), catch rates (C/f), and relative weights (W_r) by size groups of black crappie collected during Fall gillnetting surveys from Sallisaw City Lake. Numbers in parentheses represent acceptable C/f values for a quality fishery. Acceptable W_r values are ≥ 90 .

Year	Total ($\geq .20$)		< 200 mm (.05-.30)		≥ 200 mm ($\geq .08$)		≥ 250 mm ($\geq .04$)	
	No.	C/f	C/f	W_r	C/f	W_r	C/f	W_r
1994	25	0.22	0.18	129	0.03	88	0.03	88
1999	11	0.09	0.00	---	0.09	96	0.06	95
2001	28	0.19	0.1	92	0.09	86	0.08	84
2004	26	0.26	0.04	91	0.22	90	0.05	91

OKLAHOMA RESERVOIR FACT SHEET

YEAR OF SURVEY: 2004

LAKE NAME: Stigler SURFACE ACRES: 222 AVG DEPTH (ft.): 7

LOCATION: Southeast of Stigler COUNTY: Haskell

DATE IMPOUNDED: 1963 OPERATOR: City of Stigler PHONE:

PRIMARY USES: Recreation

PUBLIC USE FACILITIES: Swimming beach and picnic areas

NOTABLE CHARACTERISTICS OF LAKE OR FISHERY: Moderately clear, soft water with stands of water willow around the shoreline.

STATUS OF FISHERY

SPORT FISH	TOTAL ABUNDANCE	QUALITY SIZE ABUNDANCE	QUALITY SIZE
Largemouth Bass	High	Low	14 in.
Channel Catfish	Low	Low	16 in.
Crappie	Moderate	High	8 in.

SPECIAL REGULATIONS: None

HABITAT TYPES STATUS AND IMPROVEMENTS: A relatively shallow lake with an average depth of seven feet. Some stands of water willow are present. Improvements include construction of fish habitat structures. A new boat dock has been constructed with Sport Fish Restoration funds.

MANAGEMENT STRATEGY: Enhance food resources for largemouth bass by stocking threadfin shad; continue to stock channel catfish.

OTHER COMMENTS: Threadfin shad population was decimated by harsh Winter of 2000.

