33.4, 47.0, 47.3

SURVEY REPORT

OKLAHOMA FISHERIES MANAGEMENT PROGRAM

FISH MANAGEMENT SURVEY AND RECOMMENDATIONS

FOR

JAP BEAVER LAKE

1996

Performance Report

State: Oklahoma Project No. F-44-D-11

Project Title: Oklahoma Fisheries Management Program

Study Title: Surveys and Recommendations - Jap Beaver Lake

Period Covered: 1 January 1996 - 31 December 1996

LAKE Jap Beaver

ABSTRACT

Jap Beaver lake was sampled by spring electrofishing in 1996 to determine fish population trends. Largemouth bass abundance has decreased in recent samples. Abundance of bass in all length groups was low. Body condition for all size groups of bass was good. Abundance of bluegill was above recommended levels, but there is not enough quality size bass to control the 75-149mm bluegill and allow them to grow above >150mm in length. Fishing success for bass should be poor in 1997.

Recommendations include draining the lake in 1997 and leaving it down for three years. This would allow vegetation to grow in the bottom. While the lake is drained work could be done on the structure of the dam and anywhere else it is needed. After three years the lake should be stocked with bluegill, channel catfish and largemouth bass.

INTRODUCTION

Lake Jap Beaver impounds the Beaver Creek, 6.4 km N.W. of Waurika in Jefferson County, Oklahoma (Fig. 1). Jap Beaver Lake covers 26.3 surface hectares and was constructed in 1953 by the Oklahoma Department of Wildlife Conservation (O.D.W.C.). Jap Beaver lake has a mean depth of 3.1 m and a maximum of 9.1 m, a shoreline development ratio of 2.0, and a secchi disc visibility of around 10 cm in the main pool in August; turbidity is primarily from suspended clay . Fish habitat consists primarily of some aquatic vegetation, rock and old flooded timber.

The water quality at lake Jap Beaver has diminished over the past several years. The high turbidity is having a negative impact on the fish population within the lake. Fish species stocked in 1993 were channel catfish.

Jap Beaver was sampled in 1996 by spring electrofishing to evaluate the sport fish population.

RESULTS

Largemouth Bass

1. Largemouth bass abundance from 1996 spring electrofishing (C/f=24.0) was below the minimum acceptable value for a quality fishery (C/f= 40). The total bass C/f has declined in recent sample years (Table 2).
2. In 1996 spring electrofishing, the abundance of bass in all size groups was below acceptable levels.
3. Body condition values (W_r) were satisfactory for all size groups. Condition values for all size groups have been stable in recent samples.
4. Abundance of bass <200mm has increased from 1989, but all other length groups have decreased. The overall abundance of bass has declined. The decrease in bass numbers since 1989 may be contributed to the high turbidity of the water, resulting in low survival of bass.

Bluegill

1. Bluegill abundance from 1996 spring electrofishing (C/f=80) was above the minimum acceptable value for a quality forage supply. The total bluegill C/f has increased in recent sample years (Table 3).
2. In 1996 spring electrofishing, the abundance of bluegill <75 & 75-149mm size groups was satisfactory, while those ≥150mm size group were below acceptable values. The abundance of bluegill ≥150mm size group has remained low since 1983.
3. Body condition values (W_r) were satisfactory for all size groups. Condition values for all size groups have improved in recent samples.
4. The overall abundance of bluegill remains satisfactory. The good number of bluegill below <75mm maybe a result of low numbers of bass between 200-299mm. The low number of bluegill over ≥150mm is a result of the low abundance of ≥356mm bass.

RECOMMENDATIONS

Habitat Enhancement

1. The lake should be closed to public access, drained down to the creek channel in 1997, and left down for three years to allow different types of vegetation to reclaim the bottom of the lake. This should help improve the water quality when the lake is refilled. The lake should be renovated and improvements made on the dam. Two fishing jetties and a pond to trap incoming silt should be constructed in 1998 by lake maintenance. Additional shoreline deepening should be done in the upper reaches.

Fish Stockings

1. After the lake is refilled it should be stocked with bluegill, channel catfish and largemouth bass.

Alternative to Habitat enhancement and stocking

1. With the construction of Waurika Reservoir in the late 1970's fishing pressure and utilization of Jap Beaver has declined immensely. Agricultural practices in the immediate drainage area has caused extensive siltation in the upper reaches and if continued will continue to magnify problems of managing the fisheries and water quality even after lake renovation. The Department could demand a good price for the sale of this area and reinvest the money in a better investment for the sportsman of the state.

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FIGURE 1 JAP BEAVER LAKE

SAMPLE SITES

electrofished all of lake

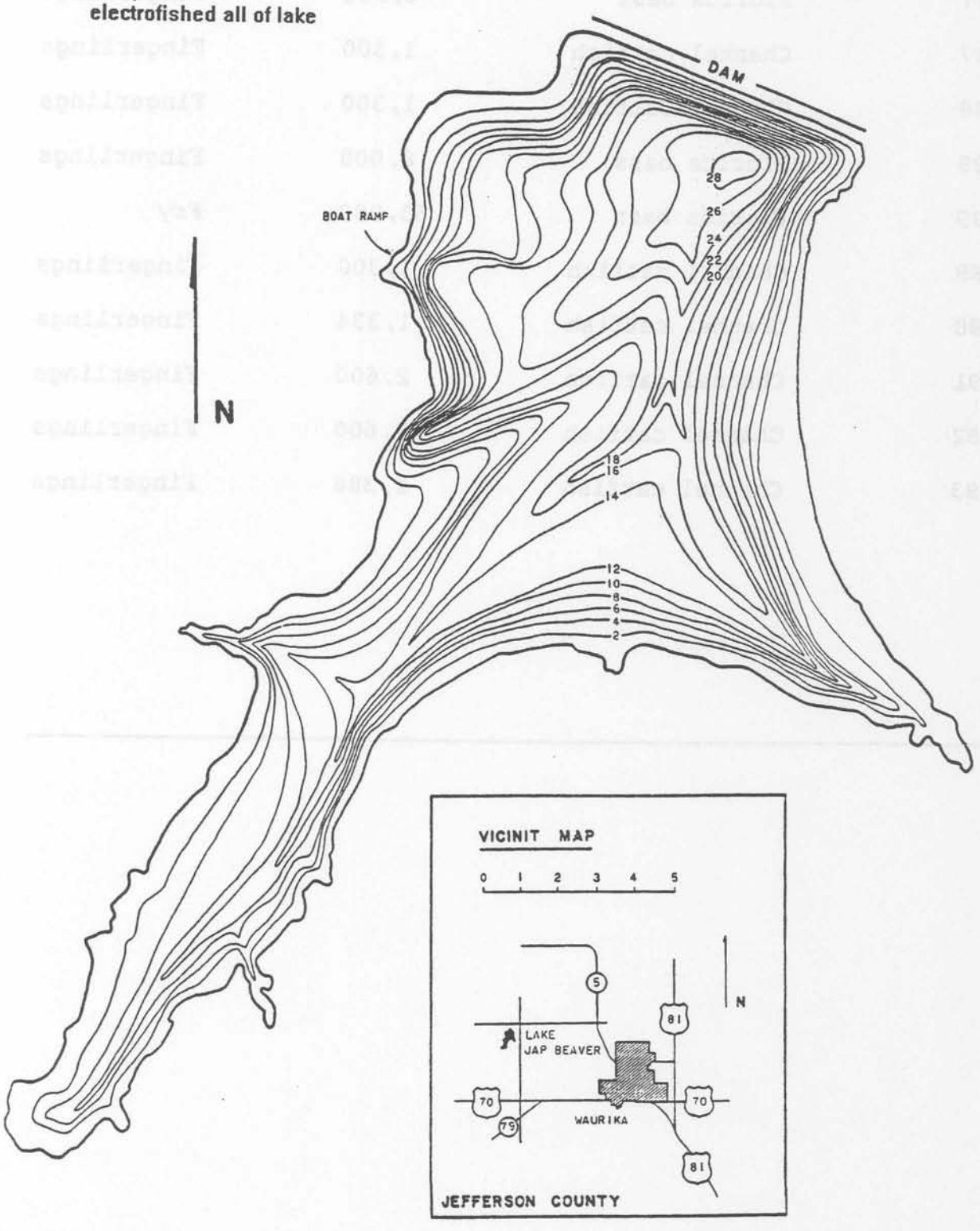

Table 1. Species, number and size of fish stocked in Lake Jap Beaver . From 1987 to 1993.

DATE	SPECIES	NUMBER	SIZE
1987	Florida bass	6,506	Fingerlings
1987	Channel catfish	1,300	Fingerlings
1988	Channel Catfish	1,300	Fingerlings
1988	Florida bass	8,000	Fingerlings
1989	Florida bass	65,000	Fry
1989	Channel catfish	1,300	Fingerlings
1990	Channel catfish	1,334	Fingerlings
1991	Channel catfish	2,600	Fingerlings
1992	Channel catfish	2,600	Fingerlings
1993	Channel catfish	1,388	Fingerlings

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

	Total[1] (≥40)		<200 mm[1] (15-45)		200-299 mm[1] (15-30)		≥300 mm[1] (≥15)		≥356 mm[1] (≥10)		Age 0[2] (≥1.0)
Year	No.	C/f	C/f	W_r	C/f	W_r	C/f	W_r	C/f	W_r	C/f
1983	285	87.7	69.8	102	12.0	93	5.8	91	2.2	90	-
1984	247	82.3	45.3	103	24.3	98	12.7	102	6.7	103	-
1985	103	34.3	5.7	90	23.3	88	5.3	118	3.7	122	.69
1986	104	59.4	6.9	86	21.7	87	30.9	95	12.0	110	6.7
1989	55	36.7	4.7	140	8.7	112	23.3	105	20.7	106	-
1994	7	4.7	.67	-	-	-	4.0	-	3.3	-	-
1996	60	24.0	11.6	95	7.2	94	5.2	106	3.6	112	-

[1] Spring electrofishing
[2] Seining

Table 3. Total number (No.), catch rates (C/f), and relative weights (W_r) by size groups of bluegill collected by spring electrofishing and seining from Lake . Numbers in parentheses represent acceptable C/f values for a quality fishery. Acceptable W_r values are ≥90.

	Total[1] (≥45)		<75 mm[2] (≥10)		75-149 mm[1] (20-100)		≥150 mm[1] (≥15)		<100 mm[2] -	
Year	No.	C/f	C/f	W_r	C/f	W_r	C/f	W_r	No.	C/f
1983	164	50.5	9.5	-	37.2	96	3.7	95	-	-
1984	243	121	16.0	-	96.0	108	9.5	104	-	-
1985	249	83.0	4.3	-	87.6	90	6.0	83	13	3.0
1986	103	58.9	3.4	-	49.7	79	5.7	92	53	6.5
1989	201	134	27.3	-	100	81	6.7	97	-	-
1994	70	46.7	2.7	-	44.0	-	-	-	-	-
1996	201	80.4	29.2	-	46.4	91	4.8	105	-	-

[1] Spring electrofishing
[2] Seining