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SURVEY REPORT

OKLAHOMA FISHERIES MANAGEMENT PROGRAM

FISH MANAGEMENT SURVEY AND RECOMMENDATIONS

FOR

DAHLGREN LAKE

1995

JOB PERFORMANCE REPORT

Oklahoma Fisheries Management Program

Federal Aid Project No. F-44-D-10

Fish Management Surveys and Recommendations

for

Dahlgren Lake

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December, 1995

Performance Report

State: Oklahoma Project No. F 44-D-9

Project Title: Oklahoma Fisheries Management Program

Study Title: Surveys and Recommendations - Dahlgren Lake

Period Covered: 1 January 1995 - 31 December 1995

LAKE DAHLGREN

ABSTRACT

Spring electrofishing was used to sample the fish populations in Dahlgren Lake in 1995. Largemouth bass C/f (C/f=59) declined from catch rates observed in 1994 (C/f=98). Catch rates of individuals over 356mm were not acceptable (C/f=2) again in 1995 (Table 2). The sunfish populations remain abundant. The number of small bluegill (C/f=288, Table 3) and large redear (C/f=72, Table 3) remained high. Relative weights were either slightly below acceptable or acceptable for all species. Recommendations include continued stocking of grow-out channel catfish at (50/ha) annually, a biannual fall drawdown for vegetation control (the next drawdown is scheduled for 1997), and maintain the water diversion canal to curtail siltation on the boat ramp. A fall drawdown and subsequent shoreline seeding was conducted in 1992, all of the trees were removed from the backside of the dam, and the handicap fishing dock was painted. A marked brushpile was constructed in 1993. An early winter drawdown occurred in December of 1995 to control aquatic vegetation and improve forage availability for largemouth bass.

INTRODUCTION

Lake Dahlgren impounds Helsel Creek, 11.25 km east of Slaughterville in Cleveland County, Oklahoma (Fig. 1). Dahlgren covers 12.1 surface hectares and was constructed in 1953 by the Oklahoma Department of Wildlife Conservation. Dahlgren Lake has a mean depth of 3 meters and a maximum depth of 8 meters and a secchi disc visibility of around 30 cm in the main pool in August; turbidity is primarily from suspended clay. Fish habitat consists primarily of aquatic vegetation, tire reefs and limited flooded timber.

The major sport fisheries in Dahlgren Lake are largemouth bass, sunfish and channel catfish. A 14 inch minimum length limit was imposed on the largemouth bass to protect an over-exploited bass fishery.

The most recent stockings include northern largemouth bass (1991, 182-7.5", and 1987-2", 1992, 601-3", and 1993, 600-1.5") and channel catfish (1994, 2400-9", 1995, 600-9", Table 1).

Dahlgren lake was sampled in 1995 by spring electrofishing to evaluate the largemouth bass and sunfish populations.

RESULTS

Largemouth Bass

1. Largemouth bass abundance from 1995 spring electrofishing (C/f=59) was above the minimum acceptable value for a quality fishery. The total bass C/f has increased in recent sample years (Table 2). The abundance of largemouth bass <200mm declined significantly in 1995 falling just short of the acceptable minimum (C/f=14, Table 2). Abundance of bass >200mm to <356mm remained stable, while those >356mm were unsatisfactory again in 1995 (C/f=2, Table 2).

2. Body condition values (W_r) declined for largemouth bass <200mm (W_r=93), but improved slightly for fish 200mm-356mm (W_r=89, Table 2). Relative weights of fish >356mm were above satisfactory. Condition values for all size groups have remained stable in recent samples.

3. Largemouth bass recruitment is fair at Dahlgren lake. The minimum length limit of 14 inches does not appear to be reducing the harvest of fish below 356mm.

Bluegill

1. Bluegill abundance from 1995 spring electrofishing (C/f=438) were well above the minimum acceptable value for a quality forage supply (Table 3).

2. In 1995 the abundance of bluegill <75mm remained high (C/f=288, Table 3) and should provide adequate forage for largemouth bass. The improvement in the number of small bluegill during 1994 and 1995 may be a result of the increase in shoreline cover combined with a successful bluegill spawns. The abundance of fish in the 75-149mm size group were above the acceptable values (C/f=141, Table 3). During 1994 C/f for bluegill >150mm declined to zero. No explanation can be given for the decline. Bluegill C/f of fish >150mm were below acceptable levels (C/f=9) in 1995 (Table 3).

3. Body condition values (W_r) were adequate for bluegill 75-149mm and >150mm (Table 3).

Redear

1. Redear abundance in 1995 spring electrofishing (C/f=72) remained high exceeding the minimum levels for a quality fishery (Table 4).

2. Catch rates of redear < 150mm were below the minimum acceptable levels (C/f=9, Table 4). Reproduction may have been limited during 1994 and 1995. C/f of redear > 150mm (C/f=63, Table 4) were good during 1995 and should contribute to quality fishing.

3. Body condition values (Wr) improved slightly for all sizes of redear (Table 4).

RECOMMENDATIONS

Habitat Enhancement

1. Conduct a fall drawdown every other year for vegetation control at Lake Dahlgren. The next drawdown should be in the fall of 1997.

Fish Stockings

1. Growout channel catfish should be stocked annually at 50/ha in an effort to maintain angling for this species.

Fish Surveys

1. Spring electrofishing should be conducted again in 1996.

Fishing Regulations

1. The 356mm minimum length and six fish per day per angler creel limits on largemouth bass and the six catfish per day per angler should remain in effect to protect the these species from overharvest.

Angler Access Improvements

1. The area surrounding the dam should be mowed at least twice annually to promote easier angler access.

2. The dock should be painted and the area surrounding the boat ramp and dock should be cleared of debris during 1996 to ensure easy access.

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Table 1. Species, number and size of fish stocked in Lake Dahlgren 1983-1995.

DATE	SPECIES	NUMBER	SIZE
6/24/83	Florida LMB	1290	3"
8/22/83	Channel Catfish	600	8"
9/1/83	Grass carp	308	12"
5/24/84	Grass carp	146	14"
6/6/84	Grass carp	58	14"
7/31/84	Channel catfish	600	14"
6/25/85	Grass carp	150	9"
8/1/85	Channel catfish	600	8"
4/7/86	Grass carp	150	16"
8/5/86	Channel catfish	120	9"
5/9/87	Northern LMB	20,750	<1"
7/30/87	Channel catfish	600	8"
8/10/87	Grass carp	150	4"
6/7/88	Channel catfish	600	9"
6/21/88	Northern LMB	3000	1"
6/10/89	Channel catfish	600	8"
10/10/89	Grass carp	450	12"
6/6/90	Northern LMB	3000	1.5"
7/26/90	Channel catfish	600	8"
4/11/91	Northern LMB	182	7.5"
5/29/91	Channel catfish	600	9.5"
6/5/91	Northern LMB	1987	2"
6/2/92	Northern LMB	601	3"
6/23/92	Channel catfish	600	8.5"
6/14/93	Channel catfish	600	7"
6/24/93	Northern LMB	600	1.5"
6/1/94	Channel catfish	1200	9"
11/3/94	Channel catfish	1200	9"
10/24/95	Channel catfish	600	9"

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 Lake Dahlgren. Numbers in parentheses represent acceptable C/f values for a quality fishery. Acceptable W_r values are $\geq$90.

	Spring Electrofishing									
	Total ($\geq$40)		<200 mm (15-45)		200-299 mm (15-30)		$\geq$300 mm ($\geq$15)		$\geq$356 mm ($\geq$10)	
Year	No.	C/f	C/f	W_r	C/f	W_r	C/f	W_r	C/f	W_r
1989	38	76	40	98	22	87	14	88	14	88
1990	24	19	7	96	9	82	3	93	2	112
1991	19	25	15	89	11	85	0	0	0	0
1992	104	52	19	94	29	89	5	84	0	0
1993	104	46	8	84	23	85	15	86	5	93
1994	98	98	52	100	35	85	11	87	2	102
1995	59	59	14	93	31	89	14	89	2	107

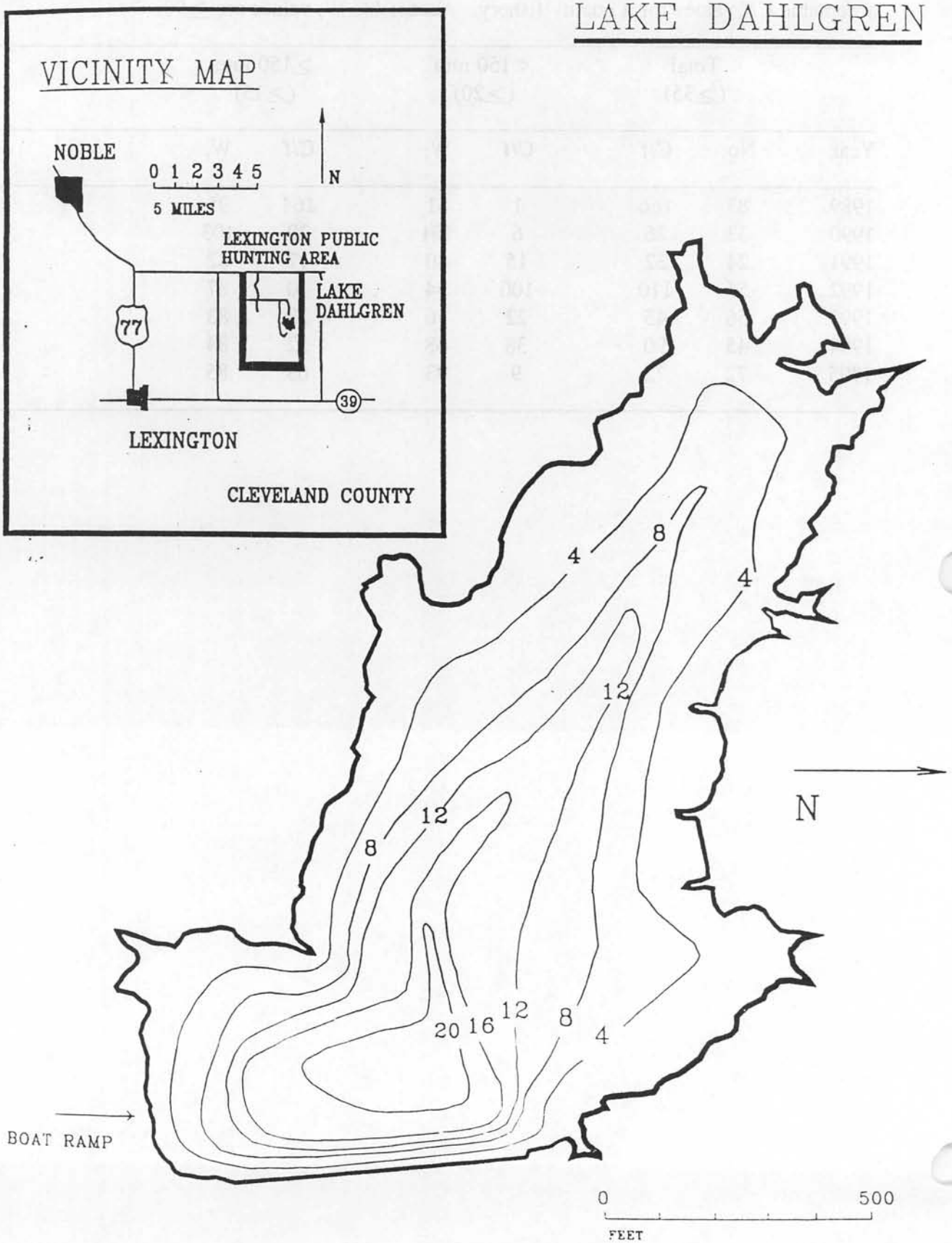
Table 3. Total number (No.), catch rates (C/f), and relative weights (W_r) by size groups of **bluegill** collected by spring electrofishing from Lake Dahlgren. Numbers in parentheses represent acceptable C/f values for a quality fishery. Acceptable W_r values are $\geq$90.

	Spring Electrofishing							
	Total ($\geq$45)		<75 mm ($\geq$10)		75-149 mm (20-100)		$\geq$150 mm ($\geq$15)	
Year	No.	C/f	C/f	W_r	C/f	W_r	C/f	W_r
1989	76	152	6	157	78	101	68	93
1990	49	39	4	-	32	96	3	94
1991	98	131	113	-	16	91	1	71
1992	60	120	98	-	18	92	4	92
1993	56	45	2	-	21	86	24	89
1994	297	594	558	-	36	72	0	0
1995	438	438	288	-	141	92	9	89

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

	Total ($\geq$35)		<150 mm ($\geq$20)		$\geq$150 mm ($\geq$15)	
Year	No.	C/f	C/f	W_r	C/f	W_r
1989	83	166	1	81	164	95
1990	33	26	6	101	20	103
1991	24	32	15	80	17	82
1992	55	110	100	94	10	87
1993	56	45	22	76	23	83
1994	45	90	38	88	52	84
1995	72	72	9	93	63	85

Figure 1.


LAKE DAHLGREN
VICINITY MAP
NOBLE
0 1 2 3 4 5
5 MILES
N
LEXINGTON PUBLIC
HUNTING AREA
LAKE
DAHLGREN
77
39
LEXINGTON
CLEVELAND COUNTY
4
8
4
12
12
8
20
16
12
8
4
N
BOAT RAMP
0
500
FEET