

1.2
1.4
1.51
33.0
42.6
47.3

SURVEY REPORT

OKLAHOMA FISHERIES MANAGEMENT REPORT



FISH MANAGEMENT SURVEYS AND RECOMMENDATIONS

FOR

Weleetka Lake

2005

Performance Report

State: Oklahoma

Project No. F 44-D-20

Project Title: Oklahoma Fisheries Management Program

Study Title: Surveys and Recommendations - Weleetka Lake

Period Covered: 1 January 2005 - 31 December 2005

LAKE WELEETKA

ABSTRACT

Weleetka Lake was sampled by fall gill netting in 2005 to determine the status of crappie and channel catfish populations. Crappie were abundant, but too few of larger size classes were collected for a quality fishery to be present. Low numbers of white bass were collected. No channel catfish were collected.

It is recommended that channel catfish fingerlings be stocked in 2006. Periodic surveys will be conducted to monitor fish population trends.

INTRODUCTION

Weleetka Lake impounds a tributary of the North Canadian River, 2.2 km southwest of Weleetka in Okfuskee County, Oklahoma (Fig. 1). Weleetka Lake covers 24.3 surface hectares and was constructed in 1921 by the City of Weleetka. Weleetka Lake has a secchi disc visibility of around 40 cm in the main pool in August; turbidity is primarily from plankton. Fish habitat consists primarily of aquatic vegetation.

Previous surveys indicated poor channel catfish recruitment and a stunted black crappie population. These surveys have also shown the abundance and size structure of largemouth bass population to be good.

Past fish management activities consisted of stocking channel catfish fingerlings to increase channel catfish abundance and stocking Florida intergrade largemouth bass to introduce Florida bass genes into the population. However, no fish stockings have been made since 1992 (Table 1). There are no special city fishing regulations in effect.

Weleetka Lake was sampled in 2005 by fall electrofishing to determine the status of crappie and channel catfish populations.

RESULTS

Crappie

1. Crappie abundance from 2005 fall gill netting ($C/f=0.59$) was above the minimal acceptable value for a quality fishery ($C/f= \geq .20$). The total crappie C/f had increased from the previous survey (Table 2).
2. In 2005 gill netting, abundance of crappie <200 mm of length was high, while abundances of those ≥ 200 mm and ≥ 250 mm were below desired levels (Table 2). The largest crappie collected in this survey weighed only 0.1 kg (0.2 pounds).
3. Body condition values (W_r) for crappie <200 mm were satisfactory, while those for crappie ≥ 200 mm were below the minimum acceptable value (Table 2).
4. Although total abundance of crappie was satisfactory, too few of quality size were collected for a quality fishery to be present.

White bass

1. White bass abundance from 2005 gill netting ($C/f=0.03$) was below the minimum acceptable value for a quality fishery ($C/f=\geq 0.20$) and was similar to that from the previous survey (Table 3).
2. In 2005 gill netting, no crappie <300 mm in length were collected, and abundance of those >300 mm was lower than the

minimum acceptable value (Table 3). The largest white bass collected weighed 0.6 kg (1.3 lbs.).

3. Body condition values (W_r) were satisfactory for fish ≥ 300 mm (Table 3).
4. Abundance of white bass was too low for a quality fishery.

Channel catfish

1. No channel catfish were collected in 2005 gill netting. Their abundance in the previous sample was also low (Table 4). Channel catfish have not been stocked since 1992.

Gizzard shad

1. Gizzard shad abundance from 2005 fall gill netting ($C/f=1.17$) was above the minimum acceptable value for a quality forage supply ($C/f \geq .20$). Their abundance had increased since the previous gill net survey (Table 5).
2. In 2005 fall gill netting the abundance of gizzard shad < 200 mm in length was below the desired minimum (Table 6) and had decreased since the previous survey.
3. The total gizzard shad abundance was high, but a low proportion of the population was of a size to be available to most predator fish.

RECOMMENDATIONS

Fish Surveys

1. Periodic surveys will be conducted to monitor trends in fish populations.

Fish Stockings

1. It is recommended that channel catfish fingerlings be stocked in 2006.

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Table 1. Species, number and size of fish stocked in Weleetka Lake, 1965 - 2005.

DATE	SPECIES	NUMBER	SIZE
1965	Channel catfish	5,880	fingerlings
1968	Channel catfish	1,000	growouts
1988	Channel catfish	3,002	fingerlings
1989	Intergrade Florida LMB	5,688	fingerlings
	Channel catfish	6,012	fingerlings
1990	Channel catfish	1,260	fingerlings
	Intergrade Florida LMB	3,000	fingerlings
1991	Channel catfish	7,000	fingerlings
1992	Channel catfish	6,600	fingerlings

Table 2. Total number (No.), catch rates (C/f), and relative weights (W_r) by size groups of **crappie** collected by gill netting from Weleetka 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
1988	14	0.22	0.22	85	0.00	--	0.00	--
2005	41	0.59	0.54	95	0.06	83	0.00	--

Table 3. Total number (No.), catch rates (C/f), and relative weights (W_r) by size groups of **white bass** collected by gill netting from Weleetka 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 ($\geq .05$)		200-299 mm (.05-.30)		≥ 300 mm ($\geq .10$)	
	No.	C/f	C/f	W_r	C/f	W_r	C/f	W_r
1988	3	0.05	0.00	--	0.00	--	0.05	109
2005	2	0.03	0.00	--	0.00	--	0.03	99

Table 4. Total number (No.), catch rates (C/f), and relative weights (W_r) by size groups of **channel catfish** collected by gill netting from Weleetka 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
1988	4	0.06	0.00	--	0.06	106	0.06	106
2005	0	0.00	0.00	--	0.00	--	0.00	--

Table 5. Total number (No.), catch rates (C/f), and relative weights (W_r) by size groups of **gizzard shad** collected by spring electrofishing (VVP 1988; GPP 1990-1997), gill netting, and seining from Weleetka Lake. Numbers in parentheses represent acceptable C/f values for a quality fishery. Acceptable W_r values are ≥ 90 .

Year	Spring Electrofishing				Fall Gillnetting				Seining	
	Total (≥ 40)	<200 mm (≥ 20)	C/f	W_r	Total (≥ 20)	<200 mm (≥ 10)	C/f	W_r	Age 0 -	C/f
1988	31	20.7	17.3	64	53	0.84	0.68	76	0	0.0
1990	177	354.0	340.0	--						
1993	294	1176.0	1172.0	--						
1997	34	27.2	0.8	--						
2005					81	1.17	0.09	--		