

PERFORMANCE REPORT

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FEDERAL AID IN SPORT FISH RESTORATION ACT

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FEDERAL AID PROJECT F-30-R-29

STATEWIDE FRESHWATER FISHERIES MONITORING AND MANAGEMENT PROGRAM

2004 Survey Report

O. C. Fisher Reservoir

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TABLE OF CONTENTS

Summary	2
Introduction	3
Status of Management Actions	3
Methods	3
Literature Cited.....	4
Physical and Historical Data	5
Stocking History	6
Location of Sampling Sites	7
Water Level	8
Species Information	
Channel catfish	9
Fisheries Management Plan	10
APPENDIX A	
Species Table	11
APPENDIX B	
Proposed Sampling Schedule.....	12

EXECUTIVE SUMMARY

O. C. Fisher Reservoir was sampled in 2005 using gill nets. Electrofishing and trap netting were not conducted because of extremely low water levels in fall 2004. This report summarizes the results of the survey and contains a management plan for the reservoir based on those findings.

- **Reservoir Description:** O. C. Fisher Reservoir is a 5,440-acre reservoir at conservation pool on the west side of San Angelo. The reservoir covered approximately 750 acres at the time of sampling. Habitat consisted primarily of flooded terrestrial vegetation, rock, gravel, and nondescript shoreline. Since 1995, O. C. Fisher Reservoir water levels dropped dramatically to a low of 53 ft below conservation pool in August 2004. The low water levels prevented sampling from 2002 through fall 2004. A major fish kill occurred in September 2004 due to low dissolved oxygen. In November 2004 the reservoir caught over 11 ft of water, making it again possible to sample the reservoir.
- **Blue catfish:** No blue catfish were collected in 5 net-nights (NN) of sampling.
- **Channel catfish:** Seven individuals were collected in 5 NN of sampling. These catfish likely came from the January 2005 stocking, when 20,018 advanced (≥ 9 ") fingerling channel catfish were released by TPWD into O. C. Fisher.
- **Flathead catfish:** One 27-inch individual was collected in 5 NN of sampling.
- **White bass:** No white bass were collected in 5 NN of sampling.
- **Management Strategies:** Continue to respond to the 2004 fish kill and subsequent water rise by stocking bluegill and blue catfish fingerlings at 100/acre, in addition to the gizzard shad, bluegill, channel catfish, largemouth bass, and white crappie that were stocked in spring 2005. Also, a new habitat survey will be conducted in late summer or early fall of 2008, the next standard report year.

INTRODUCTION

This document is a summary of fisheries data collected from O. C. Fisher Reservoir in 2005. The purpose of the document is to provide fisheries information and make management recommendations to protect and improve the sport fishery. While information on other species of fishes was collected, this report deals primarily with major sport fishes and important prey species. Management strategies are included to address existing problems or opportunities. Historical data are not included in this report because a low-oxygen fish kill in fall 2004 practically eliminated all sport fish populations in the reservoir.

STATUS OF MANAGEMENT ACTIONS FROM 2000 (Dennis and Farquhar, 2001) SURVEY REPORT

1. Work with the San Angelo State Park personnel to design fishing piers and suitable locations to facilitate angler access to deeper water from the shoreline.
Action: Water levels fluctuated dramatically since the last report, making any shoreline improvements impractical.
2. Work with the San Angelo State Park personnel and the Texas Department of Criminal Justice labor force to construct and place brush shelters along the shoreline that will be flooded during high water years to attract sport fish.
Action: As water levels receded on the reservoir, salt cedar (*Tamarix* sp.) and willow baccharis (*Baccharis neglecta*) invaded the lakebed, making the introduction of brush shelters unnecessary.
3. Restock with sport and forage fishes following a significant rise in water level.
Action: Fish were stocked following an 8-ft water rise in 2003, and an 11-ft rise in 2004 (see stocking history table in this report).

Harvest regulations for O. C. Fisher Reservoir.

Species	Bag Limit	Minimum-Maximum Length (inches)
Catfish, Blue & Channel	25	12 - No Limit
Catfish, Flathead	5	18 - No Limit
Bass, White	25	10 - No Limit
Bass, Largemouth	5	14 - No Limit
Crappie, White	25	10 - No Limit

METHODS

- Fishes were collected with gill nets (1 net night at 5 stations) in 2005. Sampling stations were randomly selected. Fish population surveys and access data were collected according to Fishery Assessment Procedures (TPWD, Inland Fisheries Division, unpublished manual revised 2004). A habitat survey was conducted in fall 2004, before the rise in water levels. At that time the habitat consisted of nondescript gravel bank. The results of that survey were not included in this report because they are no longer accurate.
- Sampling statistics: Catch per unit effort (CPUE) for gill nets was calculated as the number of fish caught in one net set overnight (number/NN). Proportional stock density (PSD) and relative stock density (RSD) were used to assess population size structure, while mean relative weights (W_r) were used to assess condition of target fishes at time of sampling (Anderson and Neumann 1996).
- Age and growth analysis was not conducted because of insufficient sample sizes.

LITERATURE CITED

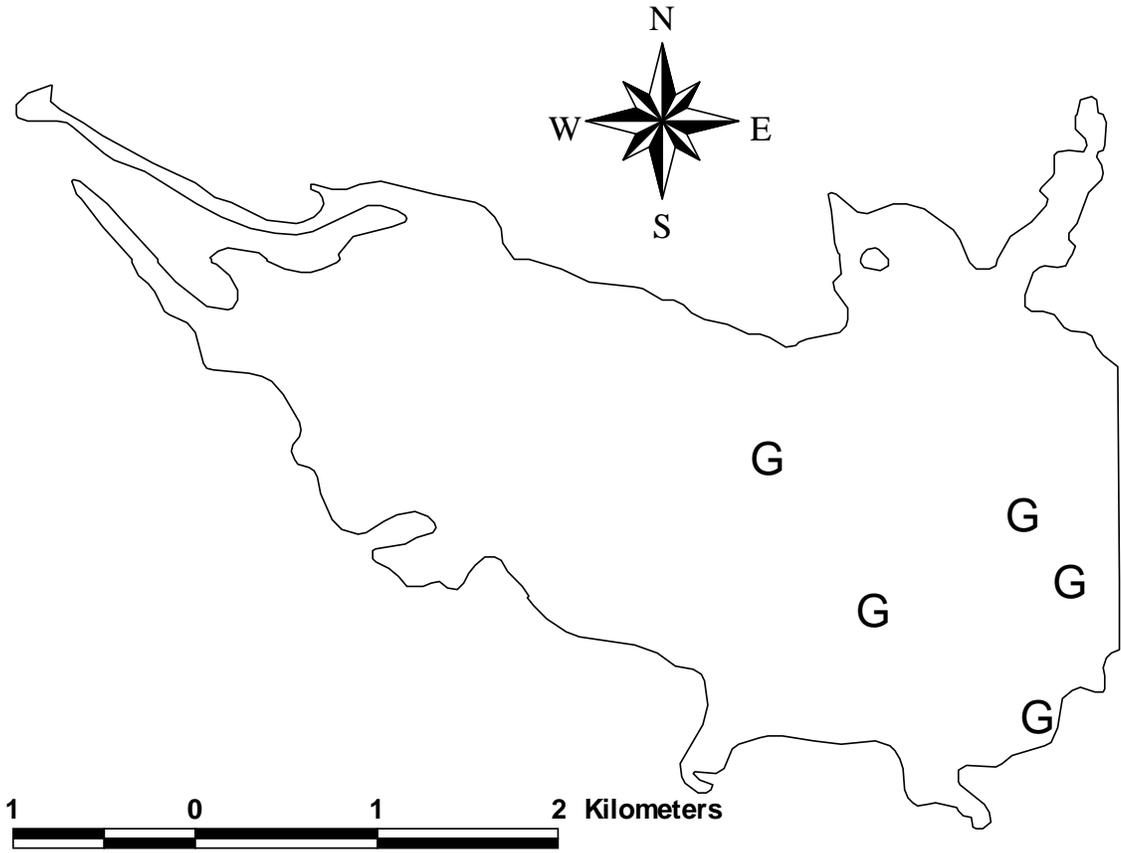
- Anderson, R. O., and R. M. Neumann. 1996. Length, weight, and associated structural indices. Pages 447-482 in B. R. Murphy and D. W. Willis, editors. Fisheries techniques. American Fisheries Society, Bethesda, Maryland.
- Dennis, J. A., and B. W. Farquhar. 2001. Statewide freshwater fisheries monitoring and management program survey report for: O. C. Fisher Reservoir 2000-2001. Texas Parks and Wildlife Department, Austin.

Physical and historical data for O. C. Fisher Reservoir, Texas, 2004-2005.

Inland Fisheries water body code: 0641	IF District: 1C-San Angelo
Controlling authority: United States Army Corps of Engineers	
Acres at conservation pool: 5,440	Acres at sampling: 750
Water uses: flood control, water supply, recreation	
Counties: Tom Green	Location: West side of San Angelo
Latitude: 31° 29'	Longitude: 100° 30'
Nearest major metropolitan area & distance: San Angelo, 0 miles	
Reservoir description: Main stream	River System: Concho
Mean depth: 14 ft	Maximum depth: 58 ft
Shoreline development index: 2.60	Watershed (mi ²): 1,383
Secchi disc range: 2-4 ft	Conductivity: 400 µmhos/cm
Constructed: 1953	
Access: Boat:	Adequate – 1 ramp available at the current elevation
Bank:	Adequate
Disabled:	Inadequate

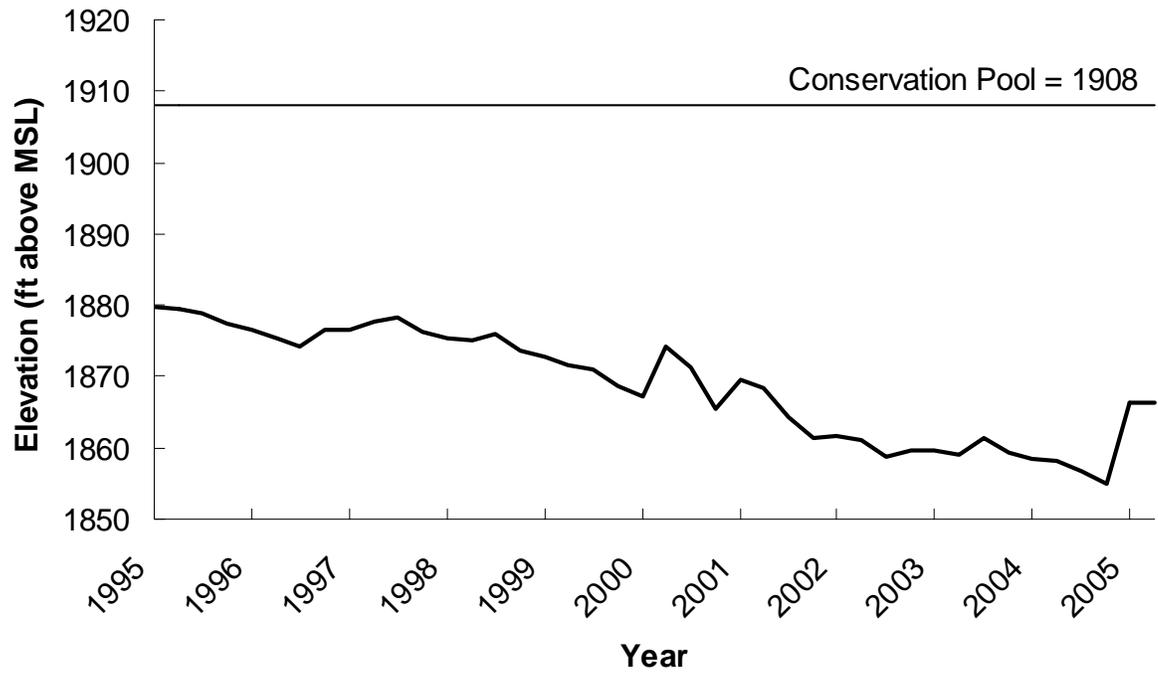
Stocking history of O. C. Fisher Reservoir, Texas. Stocking sizes are ADL=adult; FGL=fingerling; FRY=fry; and UNK=unknown.

Year	Number	Size	Year	Number	Size
<u>Threadfin shad</u>			<u>Green x Redear Sunfish</u>		
1984	8,500	UNK	1969	40,000	UNK
<u>Gizzard shad</u>			1974	100,000	UNK
2005	160	ADL	Total	140,000	
<u>Bluegill</u>			<u>Largemouth bass</u>		
2005	35,025	FGL	1966	209,500	UNK
<u>Blue catfish</u>			1968	139,000	UNK
1971	1,500	UNK	1969	25,450	UNK
1974	24,600	UNK	1970	43,135	UNK
1980	39,132	UNK	1971	10,000	UNK
1981	30,004	UNK	1972	6,000	UNK
1982	30,427	UNK	1973	3,425	UNK
Total	125,663		Total	436,510	
<u>Channel catfish</u>			<u>Florida largemouth bass</u>		
1966	3,000	UNK	1987	145,249	FGL
1969	112,100	UNK	1996	107,803	FGL
1973	12,250	UNK	2003	71,426	FGL
1974	56,400	UNK	2005	239	ADL
1980	61,884	UNK	2005	75,052	FGL
1987	200,150	FGL	Total	399,769	
1994	50,340	FGL	<u>White crappie</u>		
2005	20,018	FGL	1969	5,000	UNK
Total	516,142		1972	12,000	UNK
<u>Flathead catfish</u>			2005	394	ADL
1971	3,000	UNK	Total	17,394	
<u>Warmouth</u>			<u>Walleye</u>		
1969	38,000	UNK	1968	7,400	UNK
<u>Redear sunfish</u>			1970	1,100,000	UNK
1970	12,000	UNK	1971	740,000	UNK
1971	5,040	UNK	1972	1,030,000	UNK
Total	17,040		1973	3,900,000	UNK
<u>Kemp's largemouth bass</u>			1974	50,000	UNK
1974	4,500	FGL	1983	6,306,250	UNK
			1989	4,787,250	FRY
			1990	4,962,600	FRY
			Total	22,883,500	



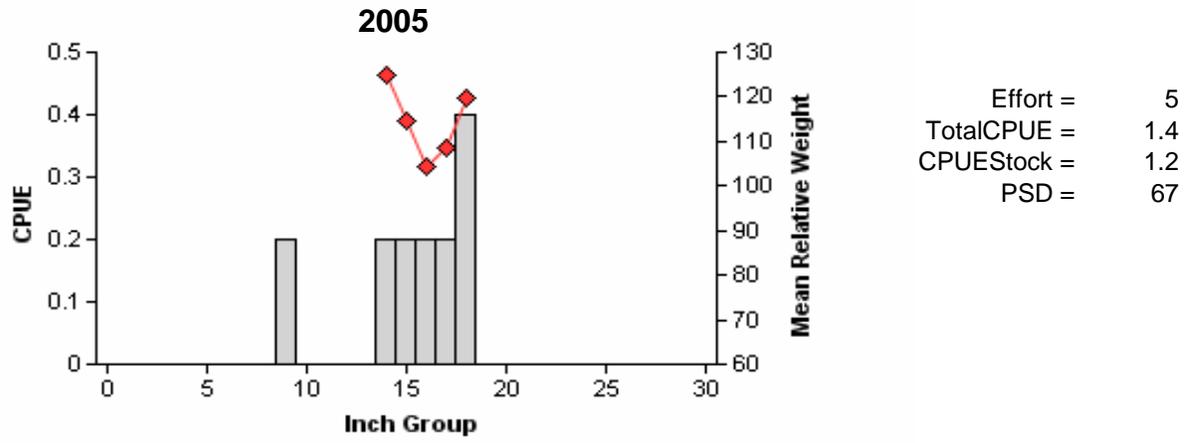
Location of sampling sites, O. C. Fisher Reservoir, Texas, 2004-2005. Gill net stations are indicated by a G.

Quarterly Water Level



Quarterly water level elevations in feet above mean sea level (MSL) recorded for O. C. Fisher Reservoir, Texas.

Channel catfish



Number of channel catfish caught per net night (CPUE, bars), mean relative weight (diamonds), and population indices for spring gill net survey, O. C. Fisher Reservoir, Texas, 2005.

**Fisheries Management Plan
O. C. Fisher Reservoir, Texas**

Prepared - May 2005

ISSUE 1 The fish kill in fall 2004 practically eliminated all game fish and prey fish populations.

MANAGEMENT STRATEGIES

1. Continue to respond to the 2004 fish kill and subsequent water rise by stocking bluegill and blue catfish fingerlings at 100/acre, in addition to the gizzard shad, bluegill, channel catfish, largemouth bass, and white crappie that were stocked in spring 2005.

ISSUE 2 The dramatic fluctuations in water levels substantially change the reservoir's habitat from year to year.

MANAGEMENT STRATEGIES

1. Conduct a habitat survey on the reservoir in late summer or early fall of 2008, the next standard report year.

APPENDIX A

Table 1. Number (N) and catch rate (CPUE) of all species collected in gill nets from O. C. Fisher Reservoir, Texas, 2005. Electrofishing and trap netting were not conducted due to low water level in fall 2004.

Species	Gill Net	
	N	CPUE
Longnose gar	249	49.8
Gizzard shad	10	2.0
Common carp	41	8.2
River carpsucker	13	2.6
Smallmouth buffalo	7	1.4
Channel catfish	7	1.4
Flathead catfish	1	0.2

APPENDIX B

Table 1. Proposed sampling schedule for O. C. Fisher Reservoir. Electrofishing and trap netting are conducted in the fall and gill netting is conducted in the spring. The letter S indicates standard sampling.

Sample Year	Electrofishing	Trap Net	Gill Net	Report
Fall 2005-Spring 2006				
Fall 2006-Spring 2007	S	S		
Fall 2007-Spring 2008				
Fall 2008-Spring 2009	S	S	S	S