

PERFORMANCE REPORT

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FEDERAL AID IN SPORT FISH RESTORATION ACT

TEXAS

FEDERAL AID PROJECT F-30-R-29

STATEWIDE FRESHWATER FISHERIES MONITORING AND MANAGEMENT PROGRAM

2004 Survey Report

New Ballinger Reservoir

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EXECUTIVE SUMMARY

New Ballinger Reservoir was surveyed in 2005 using gill nets. Due to low water level in fall 2004, the reservoir was not sampled with electrofishing or trap nets. This report summarizes the results of the survey and contains a management plan for the reservoir based on those findings.

- **Reservoir Description:** New Ballinger Reservoir is a 591-acre impoundment located on Valley Creek in the Colorado River basin approximately 10 miles west of Ballinger, Texas. It was constructed in 1984 for municipal water supply and recreation. The reservoir's water level dropped dramatically during the period from 1997-2004, and the boat ramp was closed to the public for several of those years. Intense rains in November 2004 caused the springs in Valley Creek watershed to begin flowing again, returning the reservoir to conservation pool elevation by March 2005. Boat and shoreline access are good, and habitat is primarily flooded salt cedar. Watershed land use is primarily ranching.
- **Blue catfish:** Gillnet CPUE increased slightly from 1995 (0.8/NN) to 1998 (1.6/NN) to 2005 (2.8/NN). All fish collected were of harvestable size (12") in each sample year, and there were several quality-size (≥ 20 ") fish in 2005. Condition was good with all fish having relative weights ≥ 100 . The severe water fluctuations did not seem to have an effect on this population.
- **Channel catfish:** Gillnet CPUE declined from 1995 (2.6/NN) to 1998 (1.6/NN) to 2005 (0.2/NN). The population relative abundance currently appears to be very low. It is likely that the recent low water levels, and perhaps competition with blue catfish, have negatively affected channel catfish reproduction and recruitment.
- **White bass:** No white bass were collected in 2005, although gillnet CPUE was 10.8/NN in 1998.
- **Walleye:** No walleye were collected in 2005. In 1995, walleye CPUE was 2.4/NN, with lengths ranging from 20-24". Walleye CPUE declined to 0.4/NN in 1998.
- **Management Strategies:** Continue to rebuild the fisheries in the coming year by stocking fingerling channel catfish at 50/acre, in addition to the adult gizzard shad, largemouth bass, and white crappie, and fingerling Florida largemouth bass and walleye that were stocked in spring 2005. Conduct an additional round of trap net sampling in fall 2006 and gill net sampling in spring 2007 to monitor the recovery of catfish, crappie, and walleye populations after restocking. Also, conduct a new habitat survey on the reservoir in late summer or early fall of the next standard report year, 2008.

INTRODUCTION

This document is a summary of fisheries data collected from New Ballinger Reservoir in spring 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 presented with the 2005 data for comparison.

STATUS OF MANAGEMENT ACTIONS FROM 1998 (Jons and Dumont, 1999) SURVEY REPORT

1. Discontinue stockings of Palmetto bass and walleye.
Action: Stockings of Palmetto bass were discontinued. Walleye fingerlings were requested for the reservoir in 2005 because significantly higher water levels presented an opportunity to rebuild the fishery that showed potential in the mid-1990s (Munger and Dumont, 1996).
2. To maintain a quality bass fishery, the reservoir should be stocked with Florida largemouth bass when the allele frequency falls below 20%.
Action: Florida largemouth bass fingerlings were requested for the reservoir in 2005 following a significant rise in water levels. Also, District 1-C staff conducted a management stocking of adult largemouth bass from O. H. Ivie Reservoir into New Ballinger in Spring 2005 (see stocking history in this report).

Harvest regulations for New Ballinger Reservoir.

Species	Bag Limit	Minimum-Maximum Length (inches)
Catfish, Flathead	5	18 - No Limit
Catfish, Blue and Channel	25	12 - No Limit
Bass, White	25	10 - No Limit
Bass, Palmetto	5	18 - No Limit
Walleye	5	2 under 16" can be harvested
Bass, Largemouth	5	14 - No Limit
Crappie, White	25	10 - No Limit

METHODS

- We sampled New Ballinger Reservoir with gill nets (1 net-night at 5 stations) in spring 2005. Fish population surveys were conducted according to the Fishery Assessment Procedures (TPWD, Inland Fisheries Division, unpublished manual revised 2004). All sample sites were randomly selected. A habitat survey was conducted in fall 2004, before the rise in water levels. At that time habitat consisted of nondescript silt 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).

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, second edition. American Fisheries Society, Bethesda, Maryland.

Jons, G. D. and S. C. Dumont. 1999. Statewide freshwater fisheries monitoring and management program survey report for: New Ballinger Reservoir 1998. Texas Parks and Wildlife Department, Austin.

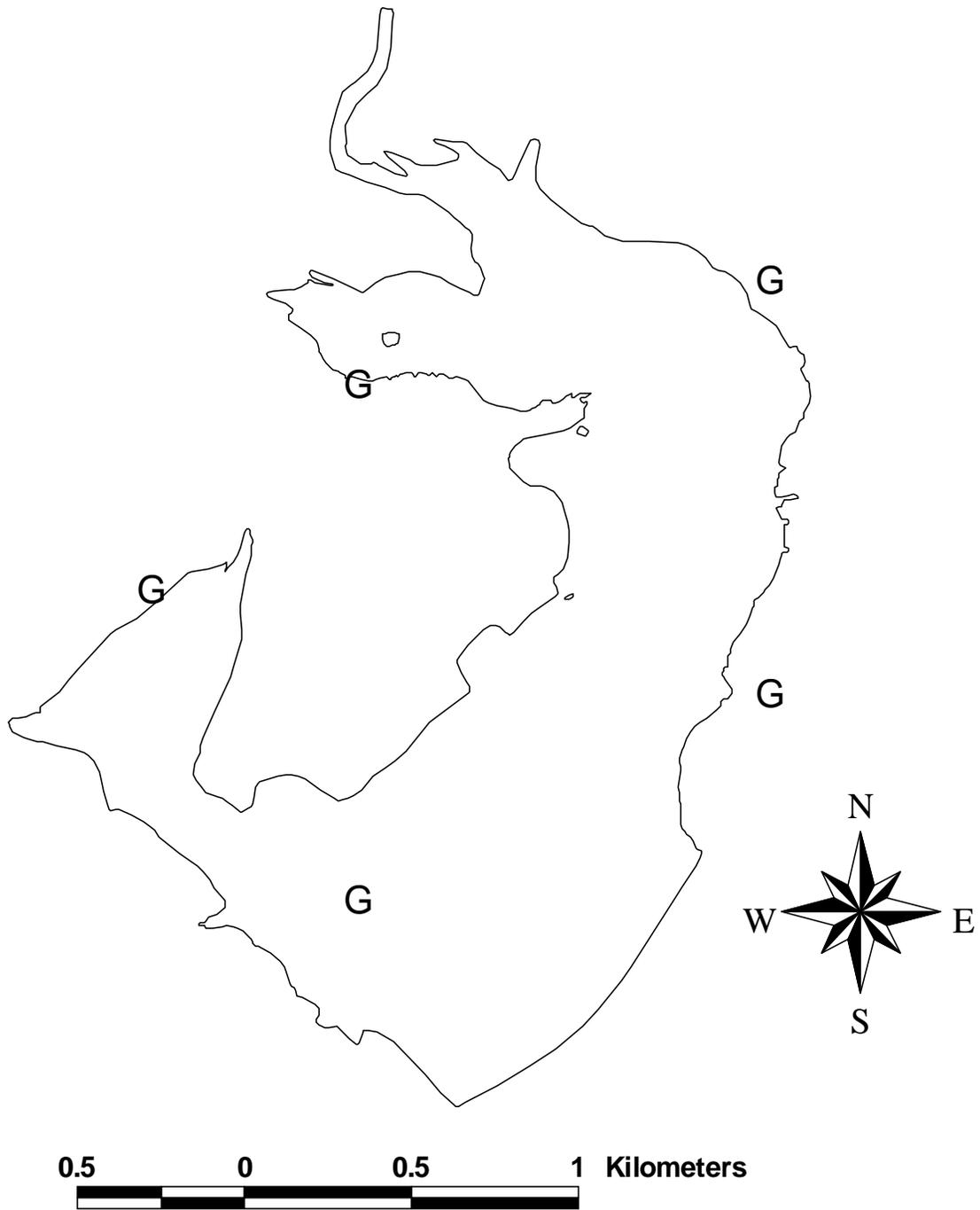
Munger, C. and S. C. Dumont. 1996. Statewide freshwater fisheries monitoring and management program survey report for: New Ballinger Reservoir 1995. Texas Parks and Wildlife Department, Austin.

Physical and historical data for New Ballinger Reservoir, Texas, 2005.

Inland Fisheries water body code: 0527	IF District: 1C-San Angelo
Controlling authority: City of Ballinger, Texas	
Acres at conservation pool: 591	Acres at sampling: 591
Water uses: Water supply, recreation	
Counties: Runnels	Location: 10 miles W of Ballinger
Latitude: N 31° 43'	Longitude: W 100° 03'
Nearest major metropolitan area & distance: San Angelo, 43 miles	
Reservoir description: Tributary	River System: Colorado
Mean depth: 10 ft	Maximum depth: 40 ft
Shoreline development index: 3.01	
Secchi disc range: 2-4 ft	Conductivity ($\mu\text{mhos/cm}$): 770
Constructed: 1984	
Access: Boat: Good – 1 paved ramp	
Bank: Adequate	
Disabled: Inadequate	

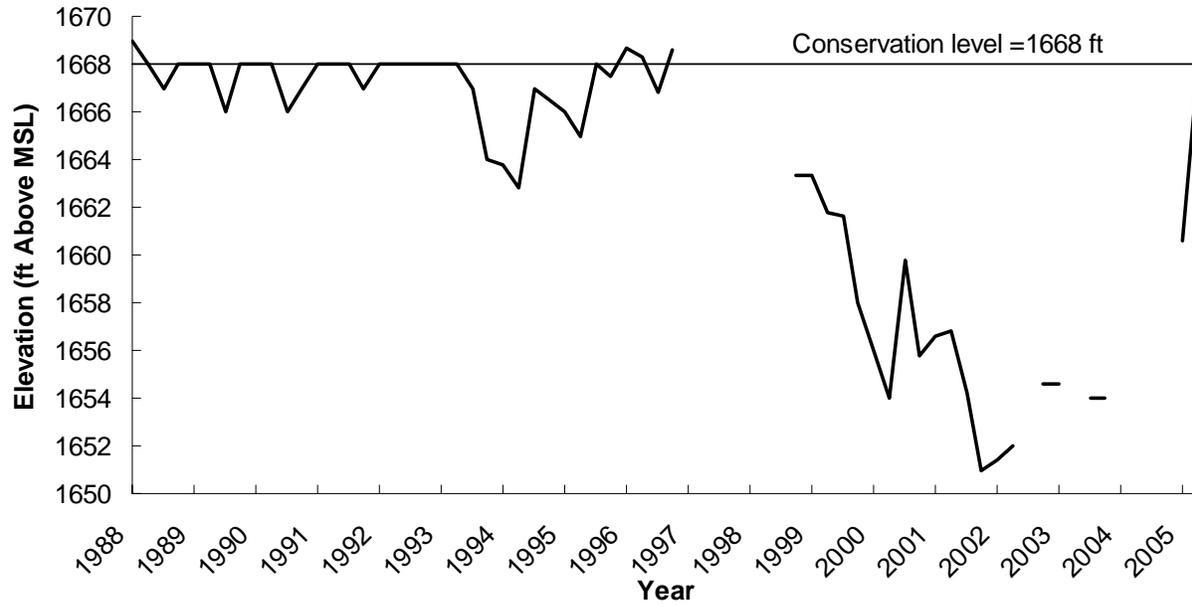
Stocking history of New Ballinger Reservoir, Texas. Stocking sizes are ADL=adult; FGL=fingerling; FRY=fry; and UNK=unknown.

Year	Number	Size	Year	Number	Size
<u>Threadfin shad</u>			<u>Largemouth bass</u>		
1985	1,200	UNK	2005	68	ADL
<u>Gizzard shad</u>			<u>Florida largemouth bass</u>		
2005	196	ADL	1985	12,000	FGL
<u>Coppernose bluegill</u>			1986	13,605	FGL
1985	60,000	UNK	1997	57,507	FGL
<u>Bluegill</u>			2005	31,161	FGL
2005	386	ADL	Total	114,273	
<u>Redbreast sunfish</u>			<u>Smallmouth bass</u>		
1985	8,262	FGL	1985	13,000	FGL
<u>Blue catfish</u>			1986	12,800	FGL
1984	1,000	FGL	1987	12,225	FGL
1985	12,022	FGL	Total	38,025	
1986	12,005	FGL	<u>White crappie</u>		
1995	57,500	FGL	2005	327	ADL
Total	82,527		<u>Palmetto bass</u>		
<u>Channel catfish</u>			1985	57,389	FRY
1986	30,012	FGL	<u>Walleye</u>		
1987	31,030	FGL	1985	1,550,000	FRY
1995	58,894	FGL	1993	1,300,000	FRY
Total	119,936		1995	1,000,000	FRY
			1996	138,486	FGL
			2005	15,000	FGL
			Total	4,003,486	



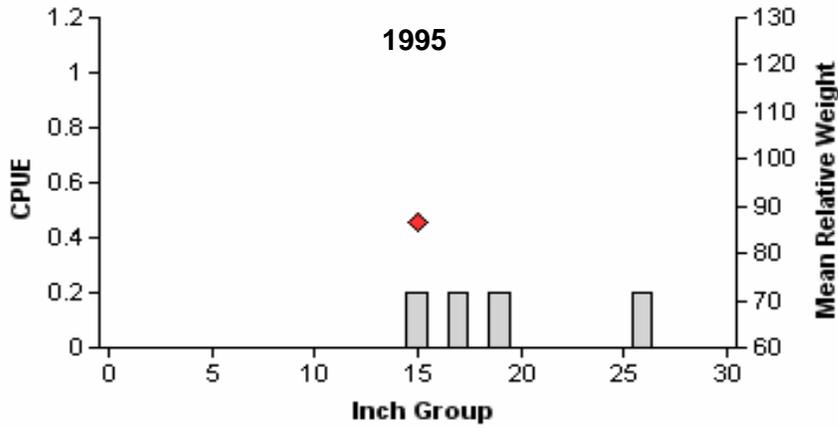
Location of sampling sites, New Ballinger Reservoir, Texas, spring 2005. Gill net stations are indicated by G.

Quarterly Water Level

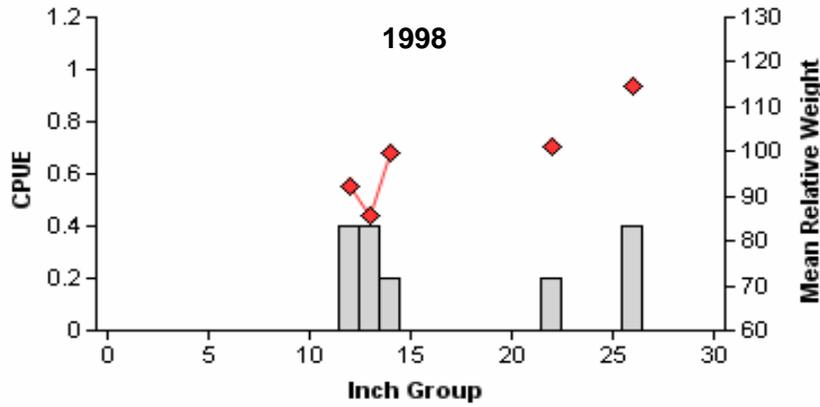


Quarterly water level elevations in feet above mean sea level (MSL) recorded for New Ballinger Reservoir, Texas. Blank readings were due to equipment failure.

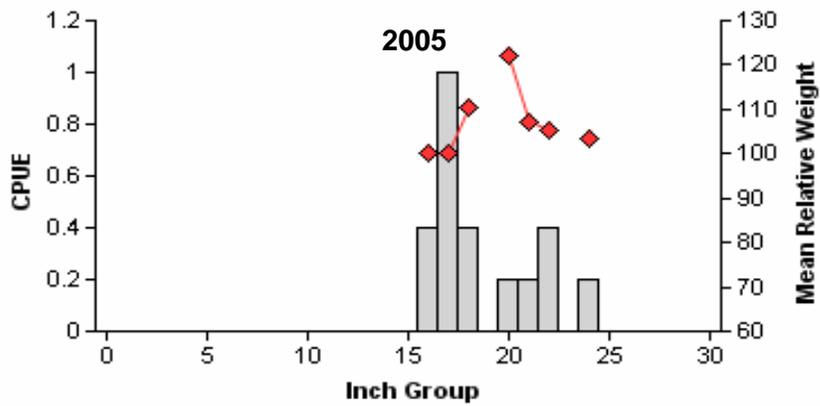
Blue catfish



Effort = 5
 TotalCPUE = 0.8
 CPUEStock = 0.8
 PSD = 25



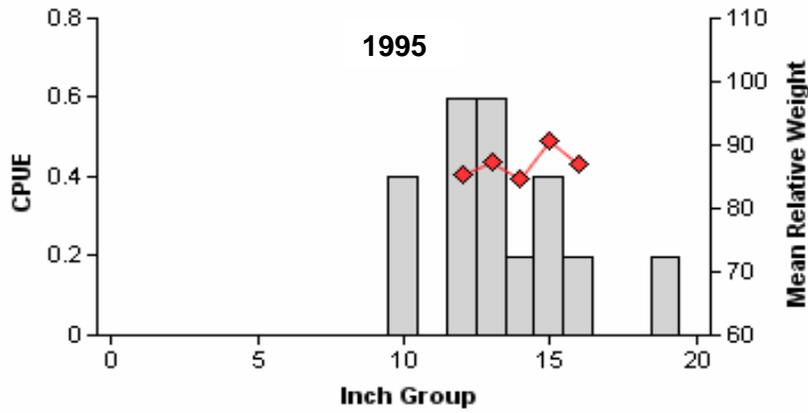
Effort = 5
 TotalCPUE = 1.6
 CPUEStock = 1.6
 PSD = 38



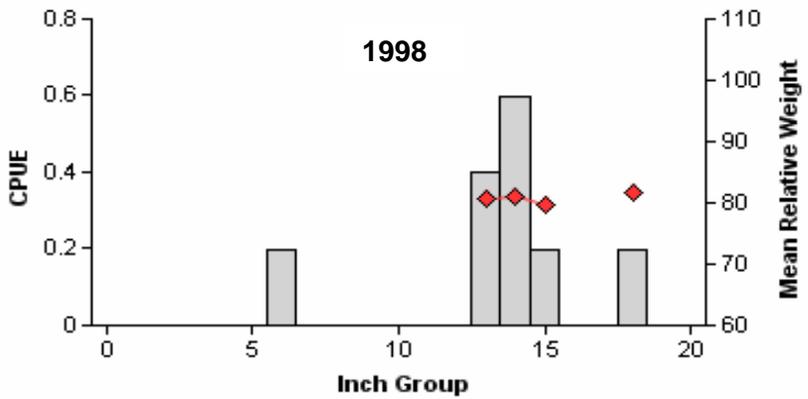
Effort = 5
 TotalCPUE = 2.8
 CPUEStock = 2.8
 PSD = 36

Comparisons of the number of blue catfish caught per net night (CPUE, bars), mean relative weights (diamonds) and population indices for spring gill netting surveys, New Ballinger Reservoir, Texas.

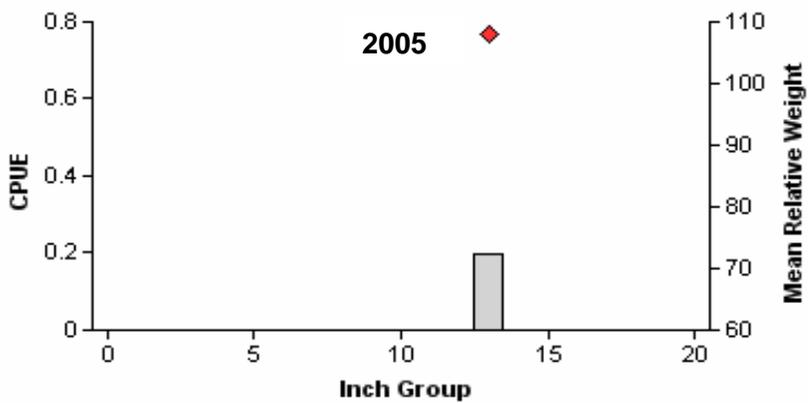
Channel catfish



Effort = 5
 TotalCPUE = 2.6
 CPUEStock = 2.2
 PSD = 18



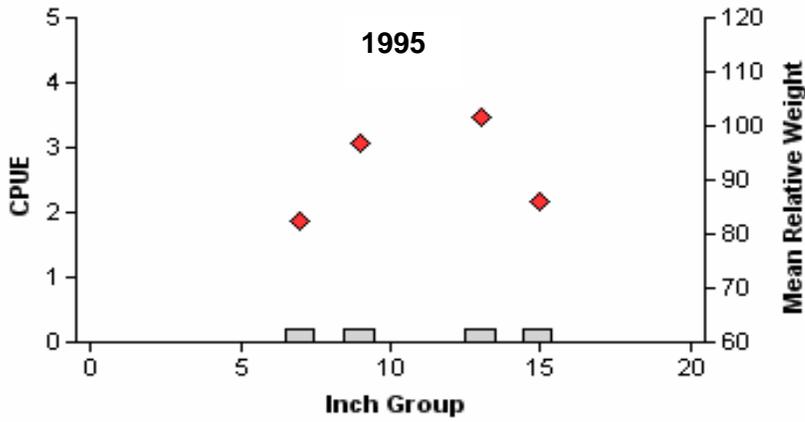
Effort = 5
 TotalCPUE = 1.6
 CPUEStock = 1.4
 PSD = 14



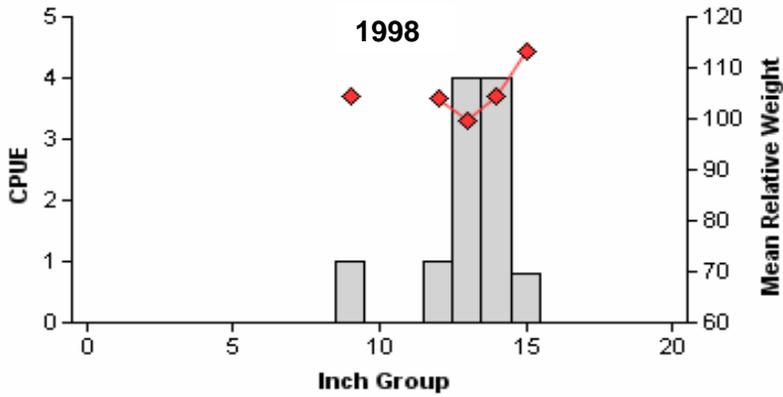
Effort = 5
 TotalCPUE = 0.2
 CPUEStock = 0.2
 PSD = 0

Comparisons of the number of channel catfish caught per net night (CPUE, bars), mean relative weights (diamonds), and population indices for spring gill netting surveys, New Ballinger Reservoir, Texas.

White bass



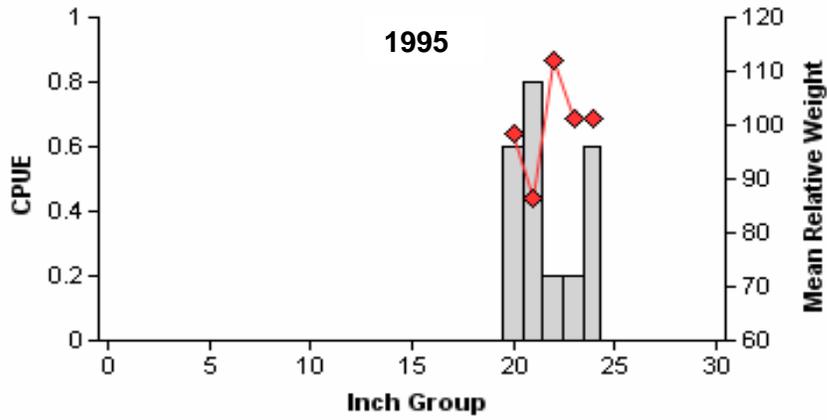
Effort = 5
 TotalCPUE = 0.8
 CPUEStock = 0.8
 PSD = 75
 RSD-10 = 50



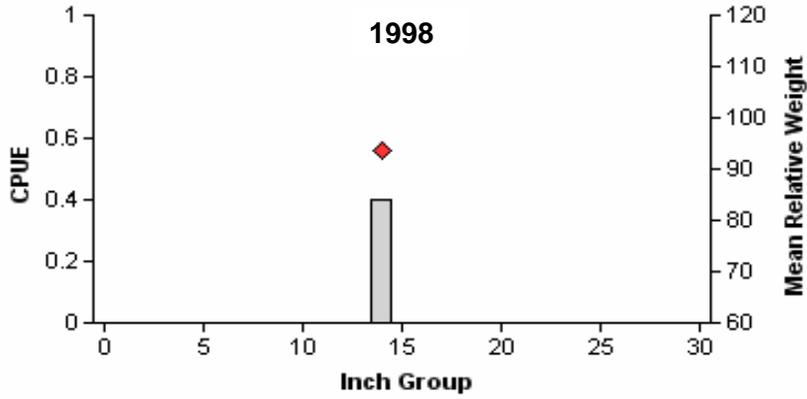
Effort = 5
 TotalCPUE = 10.8
 CPUEStock = 10.8
 PSD = 100
 RSD-10 = 91

Comparisons of the number of white bass caught per net night (CPUE, bars), mean relative weights (diamonds), and population indices for spring gill netting surveys, New Ballinger Reservoir, Texas. No white bass were collected in 5 gill net-nights in 2005.

Walleye



Effort = 5
 TotalCPUE = 2.4
 CPUEStock = 2.4
 PSD = 100
 RSD-16 = 100



Effort = 5
 TotalCPUE = 0.4
 CPUEStock = 0.4
 PSD = 0
 RSD-16 = 0

Comparisons of the number of walleye caught per net night (CPUE, bars), mean relative weights (diamonds), and population indices for spring gill netting surveys, New Ballinger Reservoir, Texas. No walleye were collected in 5 gill net-nights in 2005.

**Fisheries Management Plan
New Ballinger Reservoir, Texas**

Prepared - May 2005

ISSUE 1 In summer 2004, New Ballinger Reservoir was nearly dry. Lack of suitable habitat and extreme fluctuations in water conditions had a negative effect on most game fish populations, decreasing their numbers substantially. Due to heavy rain and re-emergence of springs in the watershed, the reservoir reached conservation pool elevation in 2005.

MANAGEMENT STRATEGIES

1. Continue to rebuild the fisheries in the coming year by stocking fingerling channel catfish at 50/acre, in addition to the adult gizzard shad, largemouth bass, and white crappie, and fingerling Florida largemouth bass and walleye that were stocked in spring 2005.
2. Conduct an additional round of trap net sampling in fall 2006 and gill net sampling in spring 2007 to monitor the recovery of catfish, crappie, and walleye populations after restocking.

ISSUE 2 Dramatic changes in water levels have substantially changed the reservoir's habitat.

MANAGEMENT STRATEGIES

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

APPENDIX A

Table 1. Number (N) and catch rate (CPUE) of all species collected in gill nets from New Ballinger 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	34	6.8
Gizzard shad	8	1.6
Common carp	3	0.6
River carpsucker	69	13.8
Smallmouth buffalo	5	1.0
Blue catfish	14	2.8
Channel catfish	1	0.2
Bluegill	1	0.2
White crappie	1	0.2
Freshwater drum	3	0.6

APPENDIX B

Table 1. Proposed sampling schedule for New Ballinger Reservoir. Electrofishing and trap netting are conducted in the fall and gill netting is conducted in the spring. The letter S indicates standard sampling, whereas the letter A indicates an additional round of sampling.

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