

PERFORMANCE REPORT

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FEDERAL AID IN SPORT FISH RESTORATION ACT

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FEDERAL AID PROJECT F-30-R-30

STATEWIDE FRESHWATER FISHERIES MONITORING AND MANAGEMENT PROGRAM

2004 Survey Report

Tradinghouse Creek Reservoir

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Executive Summary

Tradinghouse Creek Reservoir was surveyed in fall 2004 by boat electrofishing, winter 2004 by trap netting, and spring 2005 by gill netting. This report summarizes survey results and contains a management plan for the reservoir based on those findings.

- **Reservoir Description:** Tradinghouse Creek Reservoir is located in a primarily agricultural area, 15 miles east of Waco in McLennan County, Texas. Average reservoir depth is 19 feet with a maximum depth of 42 feet. The reservoir is eutrophic, with water transparencies typically ranging from 2 to 4 feet. The 2,012-acre reservoir was constructed in 1968 by Texas Utilities Generating Company (TXU) to serve as a cooling-reservoir for electrical power generation. Other water uses include recreation. Constant cooling capacity is maintained in the reservoir by auxiliary water from the Brazos River during low water levels or periods of high water temperature. Fish habitat at the time of sampling consisted mainly of aquatic vegetation (e.g., bulrush *Scirpus* spp. and cattail *Typha* spp.) and rock riprap. There are currently no handicap facilities on the reservoir. Bank access is good and boat access points were renovated extensively in spring 2001. Further information about Tradinghouse Creek Reservoir and its facilities can be obtained by visiting the Texas Parks and Wildlife Web site at www.tpwd.state.tx.us and navigating within the fishing link.
- **Prey species:** Gizzard shad, bluegill, and longear sunfish made up the majority of the forage collected during 2004 fall electrofishing. Catch per unit of effort (CPUE) for gizzard shad was 183.0 fish/hour, less than one half the 2000 catch rate of 441.0 fish/hour. The index of vulnerability (IOV) (i.e., percentage of individual gizzard shad less than 8 inches total length thought to be vulnerable to largemouth bass predation) was only 17.5, down considerably from the previous three surveys (DiCenzo et. al. 1996).

The bluegill CPUE was 176.0 fish/hour, proportional stock density (PSD) was one, and relative stock density for individuals 8 inches and longer (RSD-8) was zero, indicating good numbers of small fish suitable for prey. Catch rates for longear sunfish (57.0 fish/hour), redear sunfish (5.0 fish/hour), and threadfin shad (7.0 fish/hour) suggest minimal contributions to the forage base.

- **Catfishes:** Channel catfish were the only species of catfish collected during the 2003 and 2005 spring gill netting surveys. Catch rates seem to have stabilized since the 2001 gill netting survey and no longer exhibit an obvious downward trend. Catch rates for the most recent two surveys were 7.0 and 3.0 fish/net night. Relative weights (W_r 's) remained good in 2003 and 2005, respectively averaging 106 and 100 across length classes. Growth rates are also good. According to 2001 length-at-age data, channel catfish reach quality size (16 inches) in two growing seasons and approach preferred size (24 inches) in approximately six years, comparing favorably with other district reservoirs.

The last six gill netting surveys have shown a total absence of sub-legal fish. This apparent lack of recruitment was discussed in detail in the 2001 management report, and the following management strategies were recommended for channel catfish: stock advanced fingerlings in 2002 and possibly 2004 at a rate of 10 fish/acre, evaluate the population with annual gill netting surveys to determine stocking success, and collect aging structures from sampled fish to better assess the population.

Stocking requests were not met for Tradinghouse Creek in 2002 or 2004 because of limited hatchery production and low stocking priority. Supplemental gill netting in spring 1999 and 2000 was continued in 2003 to investigate the issue of low natural recruitment. The most recent supplemental (spring 2003) and scheduled (spring 2004) surveys also failed to collect a single sub-legal fish. The numbers of fish in the preferred category and greater (16 inches and better) however continue to appear in the samples. What was thought to be a sign of low recruitment in 2001 (i.e., no sub-legal fish in the samples) may be due to rapid growth or gear avoidance by younger year classes. Age and growth data were not collected in 2003 or 2005 due to the low numbers of catfish collected, however efforts should be made in the future to obtain up to date length-at-age data to determine growth rate.

- **White bass:** A limited white bass fishery exists at Tradinghouse Creek Reservoir. White bass catch rates have increased considerably since the 2001 survey (e.g., 1.0 fish/net night in 2001, 2.2 fish/net night in 2003, and 9.8 fish/net night in 2005). All white bass collected in 2003 and 2005 were above the current legal length limit (10 inches) and retained excellent body condition with W_r 's ranging from 97 to 112. Values for proportional stock density (PSD) and relative stock density of 10-inch fish and longer (RSD-10) have remained at 100 for the past six surveys. This indicates consistent numbers of fish 10 inches in length and longer, but no fish under 10 inches. This pattern is similar to what we have seen with channel catfish. Young-of-year white bass may not recruit to the collection gear their first few months of life, rapidly approach 12" or more during their first growing season, and appear in gill netting samples the following spring as legal-sized fish. Once again, efforts should be made in the future to obtain up to date length-at-age data to determine growth rate.
- **Black bass:** Tradinghouse Creek Reservoir continues to produce some of the highest largemouth bass densities in the district. The 2004 electrofishing catch rate of 289.0 fish/hour is the highest on record for the reservoir and district. The 2003 fall electrofishing catch rate was also very good at 177.0 fish/hour. Fish less than stock size (<8 inches) comprised most of the catch for the 2003 and 2004 surveys, and PSD values were 44 and 68 indicating balanced populations. Largemouth bass 14 inches or longer (RSD-14) were also well represented in the 2003 and 2004 samples (28 and 47 respectively).

Fish appeared healthy with W_r 's ranging from 88 to 112, evidence that plenty of forage was available. Growth of all age groups remained good and bass reached the legal size of 14 inches during their second growing season. The percentage of Florida largemouth bass (FLMB) alleles has remained near 72.0% since 1997. Given excellent recruitment, solid growth rates, and steady FLMB influence, quality largemouth bass fishing should persist at Tradinghouse Creek Reservoir for the foreseeable future.

- **Crappie:** Catch rates spiked in the winter 2000 trap netting survey (1.8 fish/net night for white and 9.8 fish/net night for black crappie), however returned to previous ranges again by 2004 (0.8 fish/net night for white and 0.2 fish/net night for black crappie). PSD (100 for white and 0 for black crappie) and RSD-10 (100 for white and 0 for black crappie) values for 2004 are based on only five individuals and so are inconclusive. Relative weights (W_r 's) were good averaging 102 for the few individuals collected. Both white and black crappie reach the legal size limit (10 inches) by the end of their first year of growth.
- **Red drum:** Gill netting surveys conducted since 1991 have yielded only 48 red drum to date and have probably underestimated red drum densities. Catch rates for the 2003 and 2005 spring gill netting surveys were 2.8 and 0.6 fish/net night, compared to 0.4 fish/net night in 2001. Relative weights (W_r 's) remain a mystery as there is not currently an index for this species in fresh water. Growth rates are also unknown because otoliths taken from red drum living in power-plant reservoirs are difficult to age accurately and no standard methodology exists for the species. Anecdotal evidence combined with creel data from spring 2000, suggests that fishing is good and that most legal-sized fish caught are in good health. Annual stocking efforts for this species have been very consistent, and good stockings of advanced fingerling (8 to 10-inch) fish from private growers in 2003 and 2004 should provide additional benefits to the fishery over the next few years.
- **Aquatic vegetation:** Hydrilla was found in trace amounts during summer 2000, 2001, and 2002 vegetation surveys while none was reported during 2003 and 2004. Although hydrilla appears to be under control and no other noxious species currently exist in the reservoir, annual vegetation surveys should continue.
- **Management Strategies:** Based on current information, Tradinghouse Creek Reservoir should continue to be managed with the existing regulations. Although catch rates for certain species are depressed when compared to the 2001 data, condition factors for all species were as good as or better than those calculated in previous surveys. It was postulated that the increase in Hydrilla in the late 1990's increased the density of available forage species in the reservoir. Conversely, the loss of this vegetative habitat since that time may be responsible for the current low catch rates of forage species – and possibly others like crappie.

Annual gill netting was recommended in the 2001 report to help evaluate potential recruitment problems with channel catfish, and to monitor red drum and white bass populations. Data from this report suggests the channel catfish population has consistent recruitment, and the consistent lack of sub-legal fish in spring gill netting samples has more to do with the temporal component of gill netting, and the possibility of younger fish not being collected by this gear. Non-standard sampling is the only way to determine if these recent views are correct, but none is currently scheduled. No immediate stocking requests are expected for channel catfish in light of this new information.

Crappie stockings will be recommended in the future in an attempt to create a steady, balanced population.

Continued annual stocking of red drum is recommended to maintain this popular fishery. Newly adopted stocking and acclimation procedures should be followed to improve post-stocking survival. Research on red drum populations in freshwater power-plants is needed and should include evaluating size-specific post-stocking survival rates and predation rates, determining effective sampling procedures, developing an accurate condition index, and creating accurate aging protocols.

The TXU-operated power-plant shifted to a *maintenance* schedule during winter 2003, and only operates today to perform routine maintenance and system checks. Fractional use of the power plant has resulted in normal reservoir water temperatures throughout the year and without a doubt will have a holistic effect on the fishery. Heated discharge during winter months has enabled the red drum fishery to exist for decades, and without it this fishery is at the mercy of the weather and the severity of future winter temperatures.

Facilities aiding access to the reservoir, including those to be used by physically challenged anglers will be suggested to the McLennan County Commissioner. TXU and other interested agencies should also be contacted and made aware of federal funds (e.g., Boat Ramp Funds) channeled through Texas Parks and Wildlife for such purposes.

Introduction

This document is a summary of fisheries data collected during 2004 and 2005, with survey data from previous years included for comparison. The purpose of this document is to provide updated information on the fishery and make management recommendations to protect and enhance the sport fishery. This report provides information on sport fishes and important prey species only. Management strategies are included to address existing problems or opportunities.

Harvest regulations for Tradinghouse Creek Reservoir for 2004 and 2005.

Species	Bag Limit	Minimum Length Limit (inches)
Bass, Largemouth	5	14 - None
Bass, White	25	10 - None
Catfish, Flathead ^a	5	18 - None
Catfish, Channel and Blue ^b	25	12 - None
Crappie, White	25	10 - None
Drum, Red	3	20 - None

^a Changed from 24 inches to 18 inches on September 1, 1995.

^b Changed from 9 inches to 12 inches on September 1, 1995.

Methods

- Fishes were collected by electrofishing (5 minutes at 12 stations), gill netting (1 net nights at 5 stations), and trap netting (1 net nights at 5 stations). Catch per unit effort for electrofishing was recorded as the number of fish caught per hour of actual electrofishing, and for gill and trap netting, as the number of fish caught in one net set overnight. All sampling was conducted according to Texas Parks and Wildlife Department Inland Fisheries Assessment Procedures (unpublished, revised manual 2003).
- Largemouth bass electrophoresis samples were collected according to the Texas Parks and Wildlife Department Inland Fisheries Assessment Procedures (unpublished, revised manual 2003).
- Sampling statistics (CPUE for various length categories) and structural indices (Proportional Stock Density [PSD], Relative Stock Density [RSD]) were calculated for target species according to Anderson and Neumann (1996). Standard weight equations used in assessing condition are from Anderson and Neumann (1996) and Muoneke and Pope (1999). The index of vulnerability (IOV) was calculated according to DiCenzo et al. (1996).
- Ages were determined for white bass, largemouth bass, and white crappie using otoliths. All otoliths were read according to the Texas Parks and Wildlife

Department Inland Fisheries Assessment Procedures (unpublished, revised manual 2003).

Literature Cited

- Anderson, R. O., and R. Neumann. 1996. Length, weight, and associated structural indices. Pages 447-482 in B. R. Murphy and D. W. Willis, editors. Fisheries techniques, 2nd edition. American Fisheries Society, Bethesda, Maryland.
- DiCenzo, V. J., M. J. Maceina, and M. R. Stimpert. 1996. Relations between Reservoir trophic state and gizzard shad population characteristics in Alabama reservoirs. *North American Journal of Fisheries Management* 16: 888-895.
- Muoneke, M. I., and K. L. Pope. 1999. Development and evaluation of a standard weight (Ws) equation for blue catfish. *North American Journal of Fisheries Management* 19:878-879.

Physical habitat survey for Tradinghouse Creek Reservoir, McLennan County, Texas 1997. Linear shoreline distance (miles) and percentages were recorded for each habitat type found.

Habitat	Miles	Percent
Rip Rap	2	11.8
Eroded bank	2	11.8
Nondescript	13	76.4

Noxious aquatic vegetation coverage data for Tradinghouse Creek Reservoir, McLennan County, Texas. "T" stands for trace amounts observed.

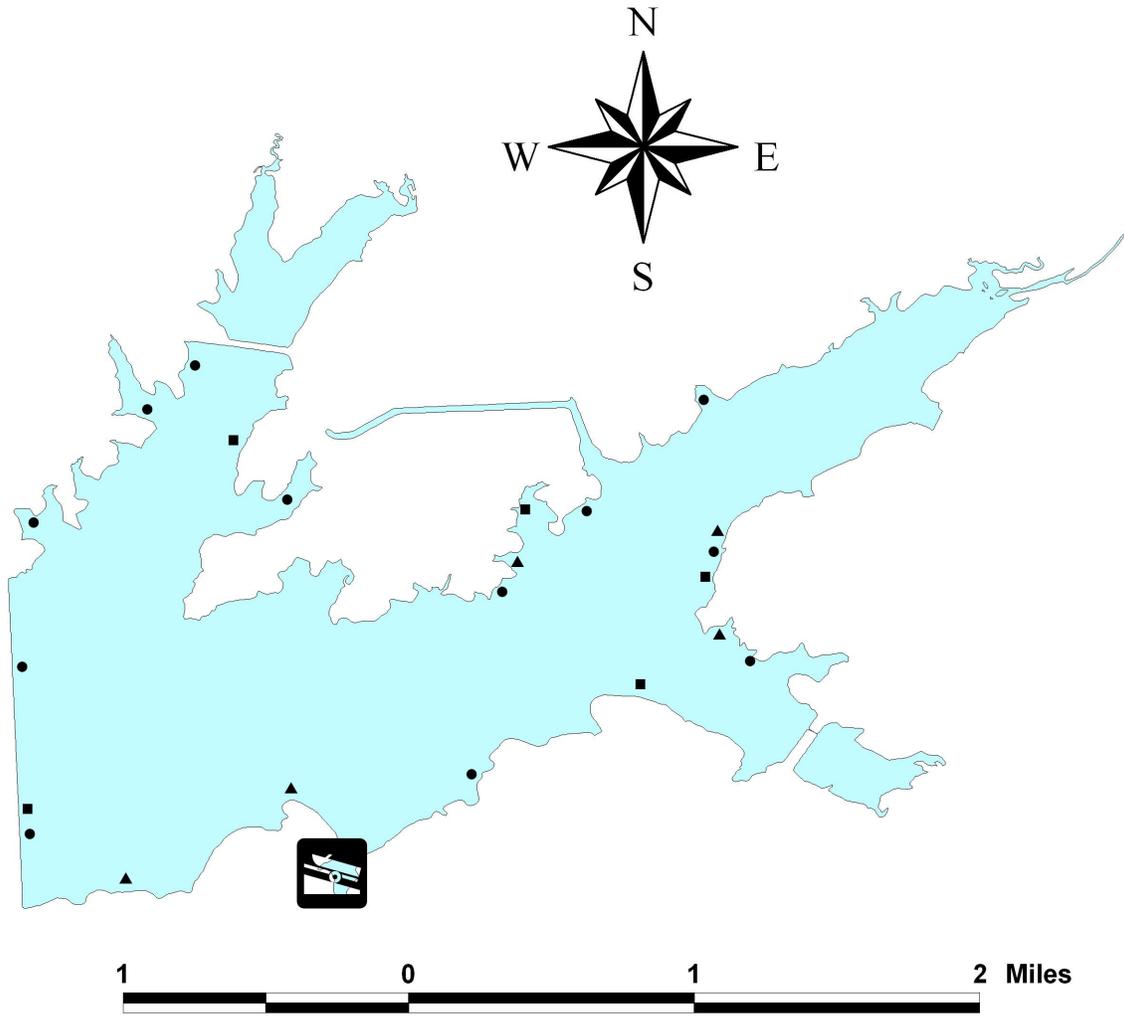
Year	Hydrilla (acres)
1996	0.8
1997	N/A
1998	4.0
1999	182.0
2000	T
2001	T
2002	T
2003	0
2004	0

Stocking history through 2005 for Tradinghouse Creek Reservoir, McLennan County, Texas. Size categories are: Fry (FRY), fingerling (FGL), and Adult (ADL).

Species	Year	Size	Number
Channel catfish	1968	FRY	10,600
		Total	338,237
Blue catfish	1986	FGL	21,122
		Total	21,122
Largemouth bass	1969	FGL	100,000
		Total	100,000
Florida Largemouth bass	1985	FGL	157,632
	1986	FGL	100,566
	Total	258,198	
Peacock bass	1982	FGL	1,600
		Total	1,600
Striped bass	1980	FRY	240,700
		Total	240,000
Black/White hybrid crappie	1995	FGL	101,848
	1996	FGL	201,132
	Total	302,980	
White crappie	1992	FGL	12,718
		Total	12,718
Red drum	1975	FGL	53,161
	1981	FGL	200,000
	1983	FGL	198,500
	1984	FGL	153,783
	1985	FGL	408,532
	1986	FGL	246,471
	1987	FGL	768,810

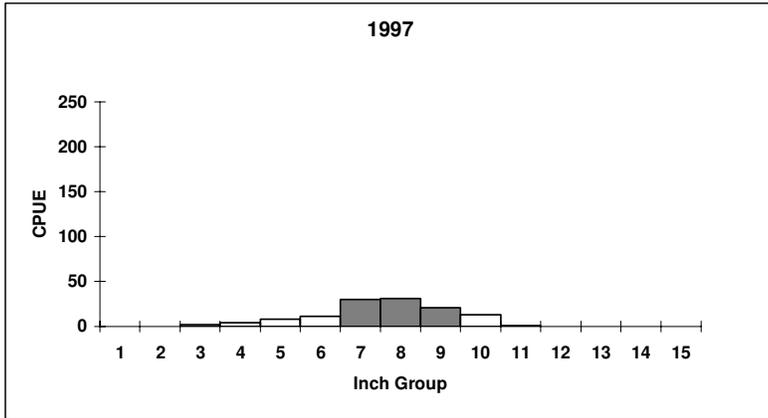
Stocking History Continued.

Red drum	1989	FGL	8,000
	1990	FGL	9,569
	1991	FGL	413,202
	1992	FGL	202,566
	1993	FGL	206,434
	1994	FGL	184,000
	1995	FGL	217,188
	1996	FGL	197,399
	1997	FGL	202,378
	1999	FGL	268,643
	2000	FGL	251,815
	2001	FGL	290,905
	2002	FGL	180,122
	2003	FGL	344,657
	2004	FGL	370,011
		Total	5,376,146

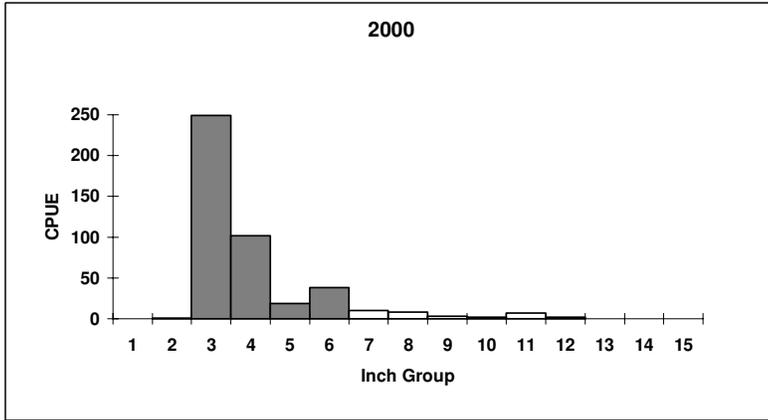


Map of Tradinghouse Creek Reservoir, Texas, with randomly-selected electrofishing (circles), trap netting (squares), and gill netting (triangles) sample sites for 2004 and 2005. The public boat ramp is also shown.

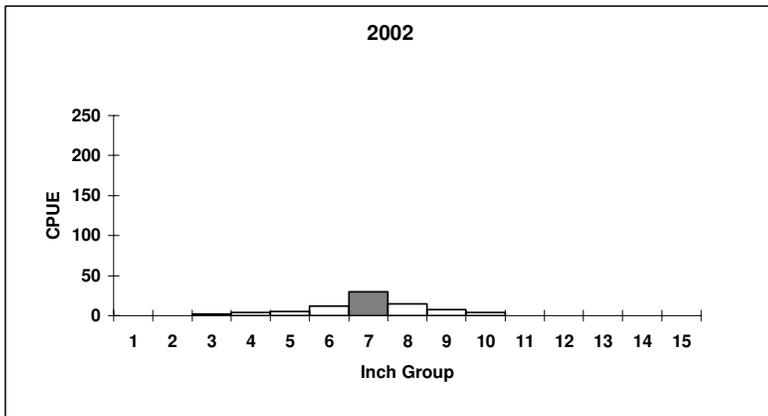
Gizzard Shad



Effort = 1.0
 Total CPUE = 121.0
 Stock CPUE = 96.0
 CPUE <8" = 55.0
 IOV = 46



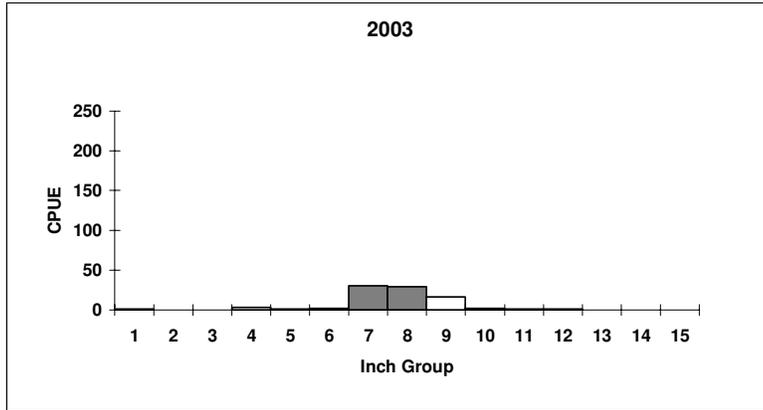
Effort = 1.0
 Total CPUE = 441.0
 Stock CPUE = 32.0
 CPUE <8" = 53.0
 IOV = 95



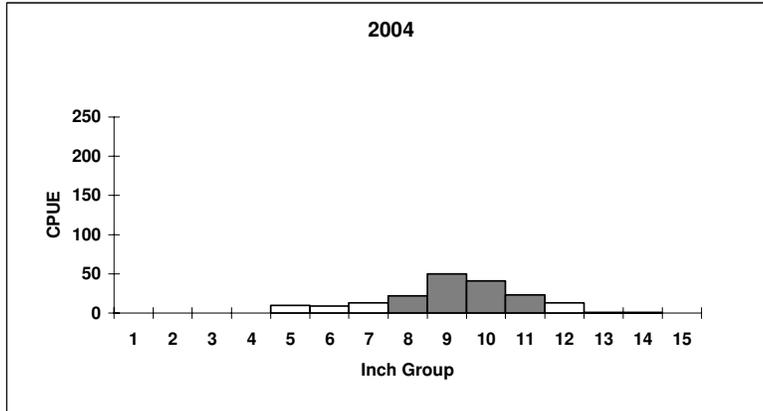
Effort = 1.0
 Total CPUE = 80.0
 Stock CPUE = 57.0
 CPUE <8" = 419.0
 IOV = 66

Number of gizzard shad *Dorosoma cepedianum* caught per hour (CPUE) during fall electrofishing surveys on Tradinghouse Creek Reservoir, McLennan County, Texas.

Gizzard Shad



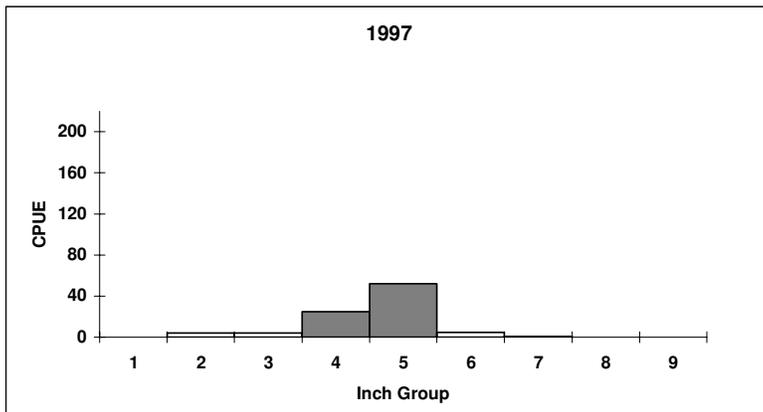
Effort = 1.0
 Total CPUE = 441.0
 Stock CPUE = 79.0
 CPUE<8" = 37.0
 IOV = 43



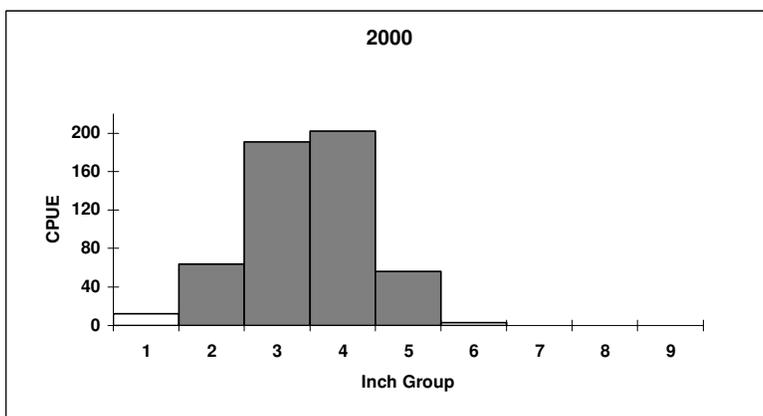
Effort = 1.0
 Total CPUE = 183.0
 Stock CPUE = 164.0
 CPUE<8" = 32.0
 IOV = 17.5

Number of gizzard shad *Dorosoma cepedianum* caught per hour (CPUE) during fall electrofishing surveys on Tradinghouse Creek Reservoir, McLennan County, Texas.

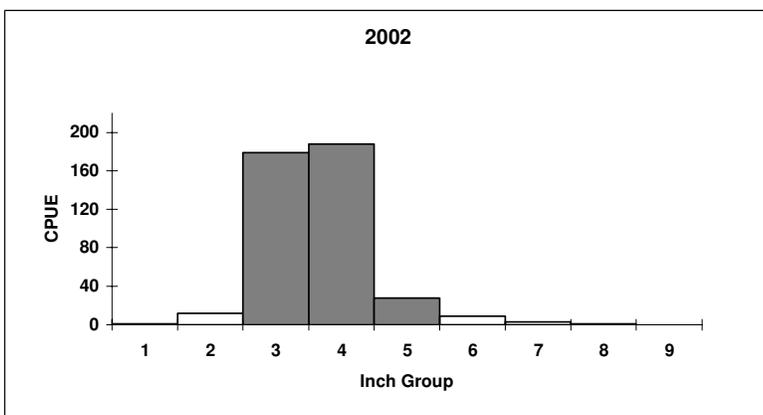
Bluegill



Effort = 1.0
 Total CPUE = 91.0
 Stock CPUE = 87.0
 PSD = 7
 RSD -8 = 0



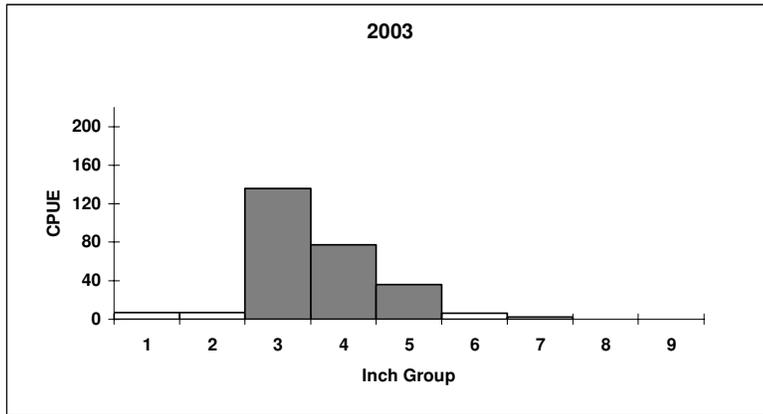
Effort = 1.0
 Total CPUE = 528.0
 Stock CPUE = 452.0
 PSD = 1
 RSD -8 = 0



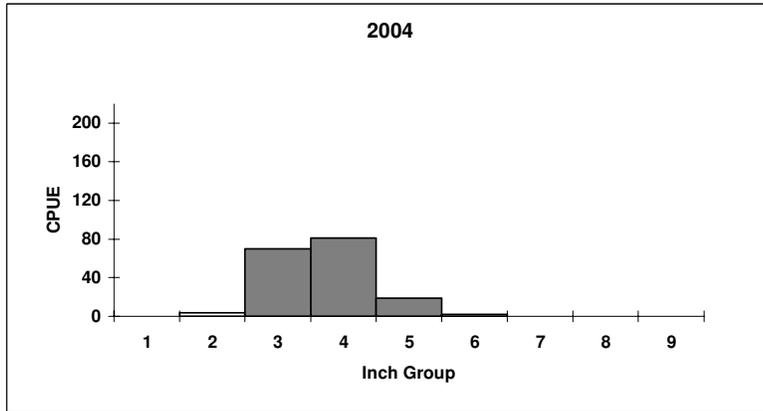
Effort = 1.0
 Total CPUE = 421.0
 Stock CPUE = 229.0
 PSD = 3
 RSD -8 = 0

Number of bluegill *Lepomis macrochirus* caught per hour (CPUE) during fall electrofishing surveys on Tradinghouse Creek Reservoir, McLennan County, Texas.

Bluegill



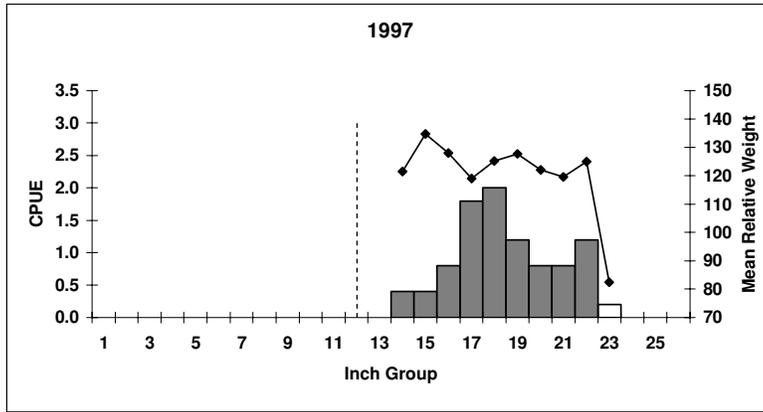
Effort = 1.0
 Total CPUE = 292.0
 Stock CPUE = 257.0
 PSD = 3
 RSD -8 = 0



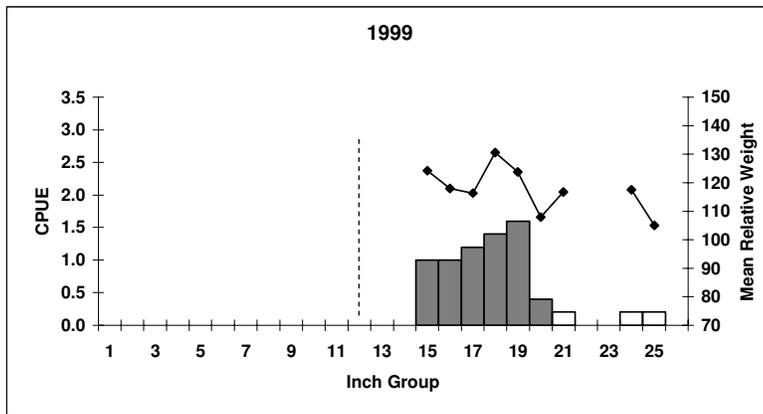
Effort = 1.0
 Total CPUE = 176.0
 Stock CPUE = 172.0
 PSD = 1
 RSD -8 = 0

Number of bluegill *Lepomis macrochirus* caught per hour (CPUE) during fall electrofishing surveys on Tradinghouse Creek Reservoir, McLennan County, Texas.

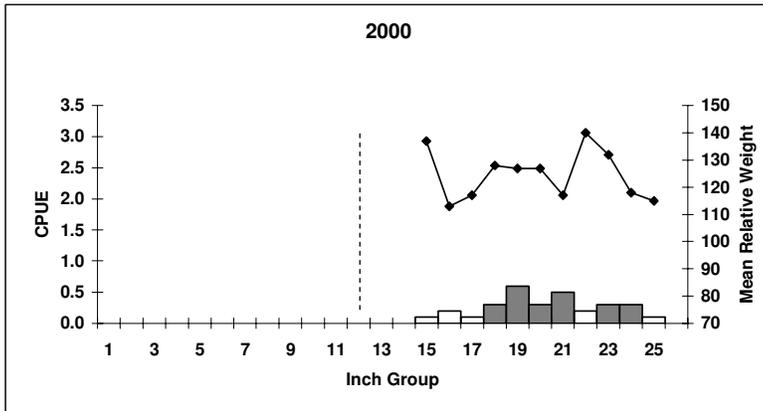
Channel Catfish



Effort = 5.0
 Total CPUE = 9.6
 Stock CPUE = 9.6
 PSD = 92
 RSD-12 = 100



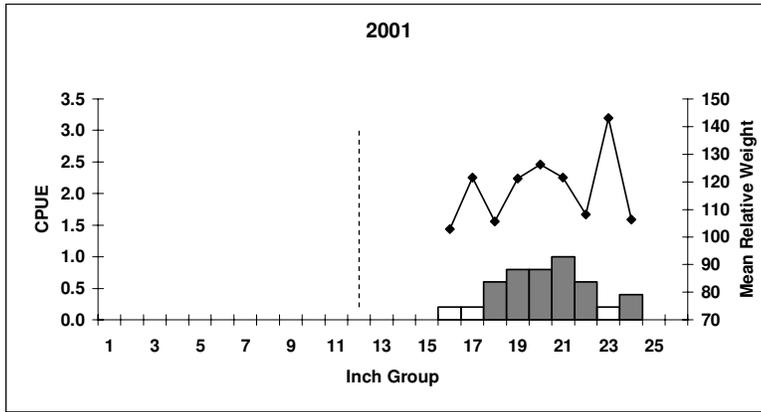
Effort = 5.0
 Total CPUE = 7.2
 Stock CPUE = 7.2
 PSD = 86
 RSD-12 = 100



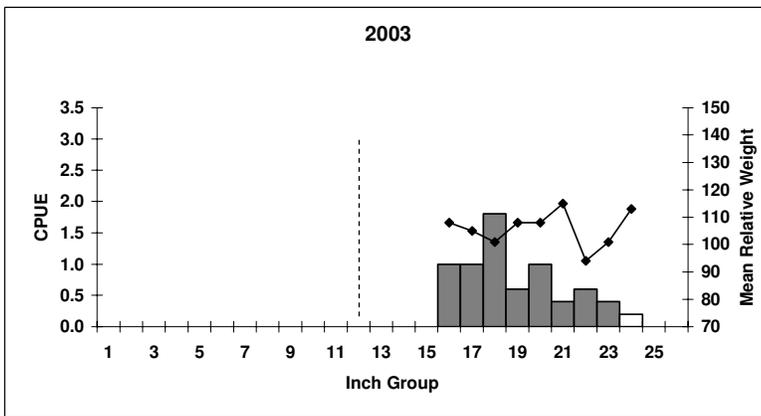
Effort = 10.0
 Total CPUE = 3.0
 Stock CPUE = 3.0
 PSD = 97
 RSD-12 = 100

Number of channel catfish *Ictalurus punctatus* caught per net night (CPUE, bars) and mean relative weights (W_r , lines) collected during spring gill netting surveys on Tradinghouse Creek Reservoir, McLennan County, Texas. Dashed lines indicate minimum length limit at the time of sampling.

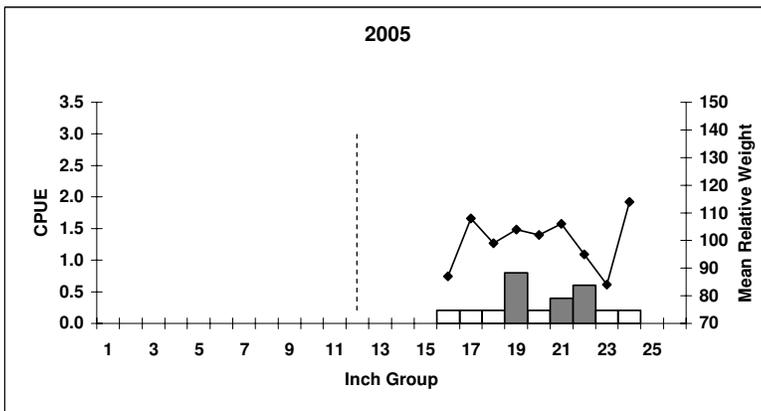
Channel Catfish



Effort = 5.0
 Total CPUE = 4.8
 Stock CPUE = 4.8
 PSD = 100
 RSD-12 = 100



Effort = 5.0
 Total CPUE = 7.0
 Stock CPUE = 7.0
 PSD = 100
 RSD-12 = 100



Effort = 5.0
 Total CPUE = 3.0
 Stock CPUE = 3.0
 PSD = 100
 RSD-12 = 100

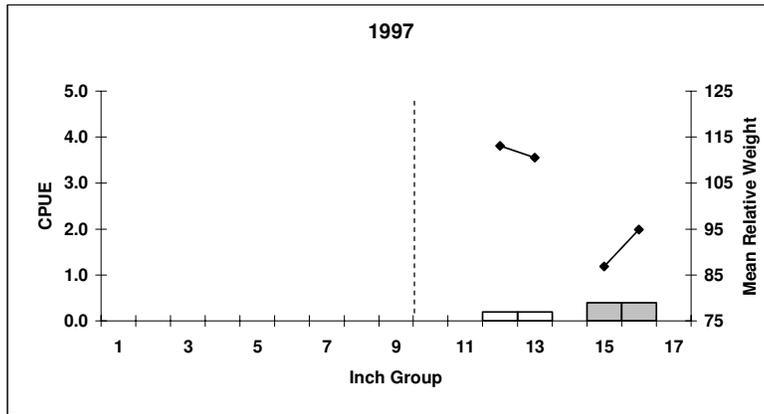
Number of channel catfish *Ictalurus punctatus* caught per net night (CPUE, bars) and mean relative weights (W_r , lines) collected during spring gill netting surveys on Tradinghouse Creek Reservoir, McLennan County, Texas. Dashed lines indicate minimum length limit at the time of sampling.

Mean total lengths at age of capture for channel catfish *Ictalurus punctatus* collected during spring gill netting surveys on Tradinghouse Creek Reservoir, McLennan County, Texas. Sample sizes are in parentheses.

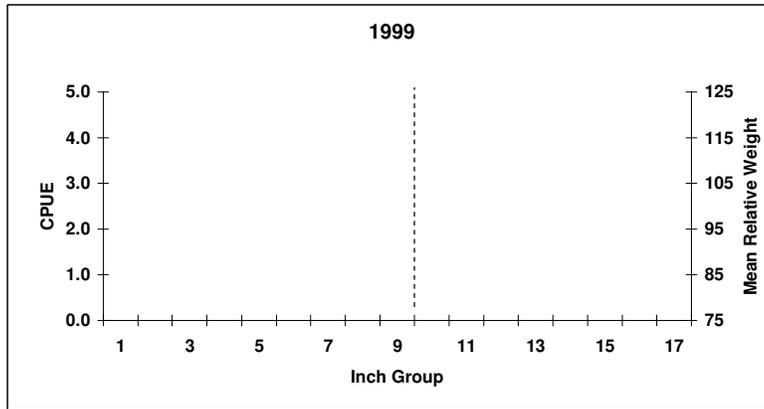
Length (inches) at age of capture.

Year	1	2	3	4	5	6	7
1994	12.2 ⁽⁴⁾	16.4 ⁽⁹⁾	17.9 ⁽²⁴⁾	17.3 ⁽²⁾			
1997		16.4 ⁽¹²⁾	20.1 ⁽²⁰⁾	21.0 ⁽⁵⁾			
1999		15.6 ⁽¹⁾	17.1 ⁽²⁰⁾	19.2 ⁽⁹⁾	21.7 ⁽⁵⁾	19.8 ⁽¹⁾	
2000		20.0 ⁽¹⁾	19.6 ⁽¹²⁾	22.2 ⁽⁷⁾	22.9 ⁽³⁾	23.4 ⁽²⁾	22.7 ⁽¹⁾
2001		17.9 ⁽³⁾	20.7 ⁽¹⁵⁾	22.8 ⁽⁵⁾			

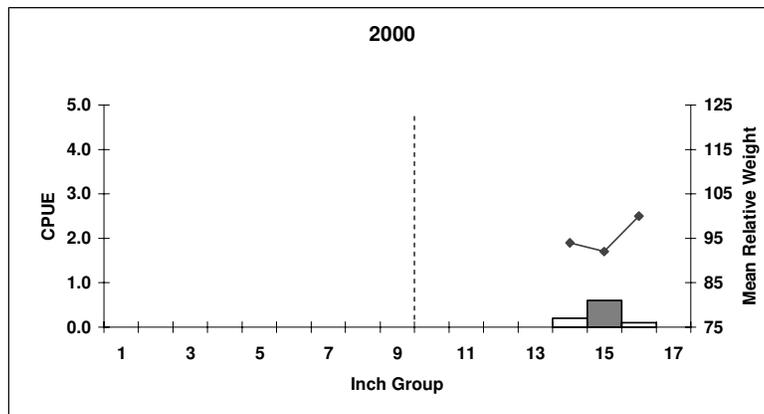
White Bass



Effort = 5.0
 Total CPUE = 1.2
 Stock CPUE = 1.2
 PSD = 100
 RSD-10 = 100



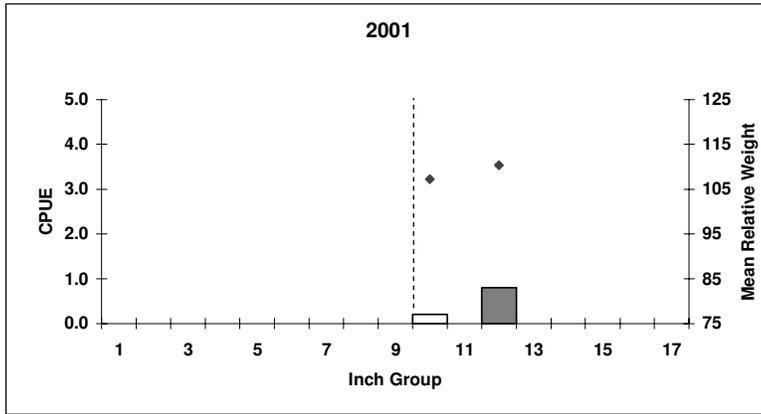
Effort = 5.0
 Total CPUE = 0.0
 Stock CPUE = 0.0
 PSD = 0
 RSD-10 = 0



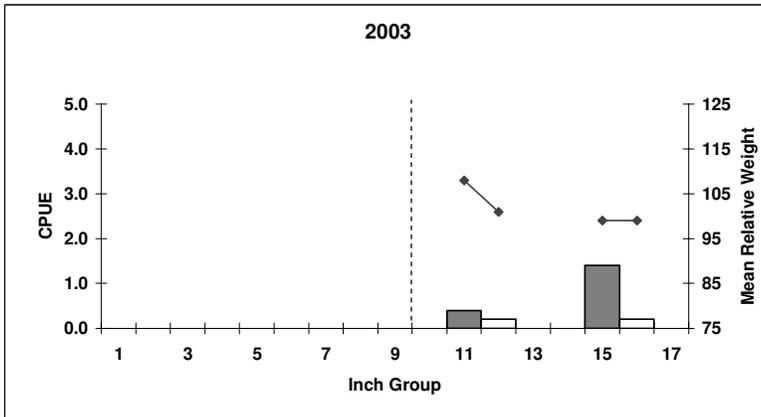
Effort = 10.0
 Total CPUE = 0.9
 Stock CPUE = 0.9
 PSD = 100
 RSD-10 = 100

Number of white bass *Morone chrysops* caught per net night (CPUE, bars) and mean relative weights (Wr, lines) collected during spring gill netting surveys on Tradinghouse Creek Reservoir, McLennan County, Texas. Dashed lines indicate minimum length limit at the time of sampling.

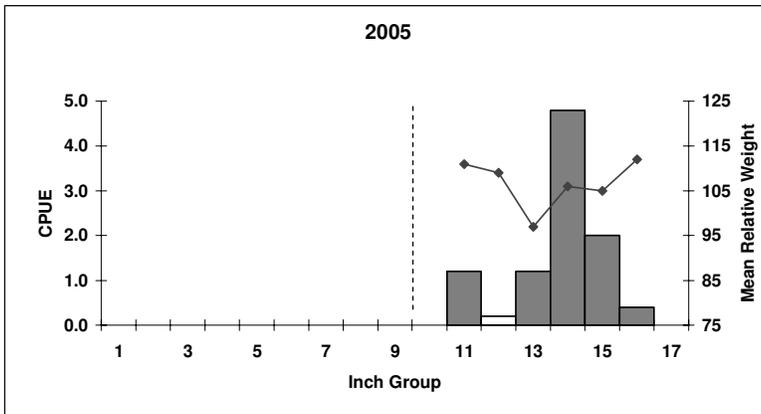
White Bass



Effort = 5.0
 Total CPUE = 1.0
 Stock CPUE = 1.0
 PSD = 100
 RSD-10 = 100



Effort = 5.0
 Total CPUE = 2.2
 Stock CPUE = 2.2
 PSD = 100
 RSD-10 = 100



Effort = 5.0
 Total CPUE = 9.8
 Stock CPUE = 9.8
 PSD = 100
 RSD-10 = 100

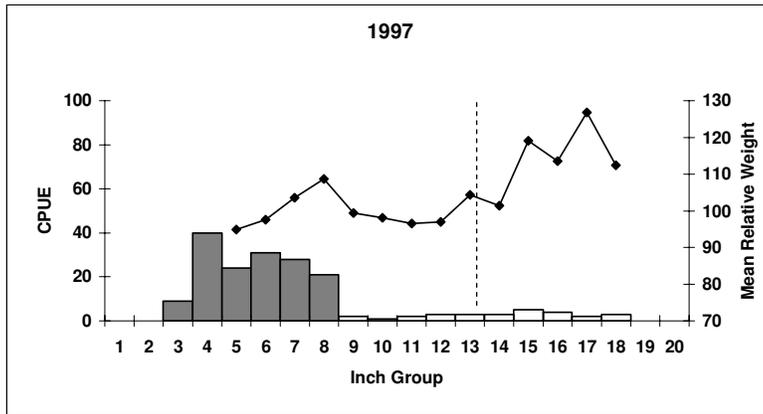
Number of white bass *Morone chrysops* caught per net night (CPUE, bars) and mean relative weights (Wr, lines) collected during spring gill netting surveys on Tradinghouse Creek Reservoir, McLennan County, Texas. Dashed lines indicate minimum length limit at the time of sampling.

Mean total lengths at age of capture for white bass *Morone chrysops* collected during spring gill netting surveys on Tradinghouse Creek Reservoir, McLennan County, Texas. Sample sizes are in parentheses.

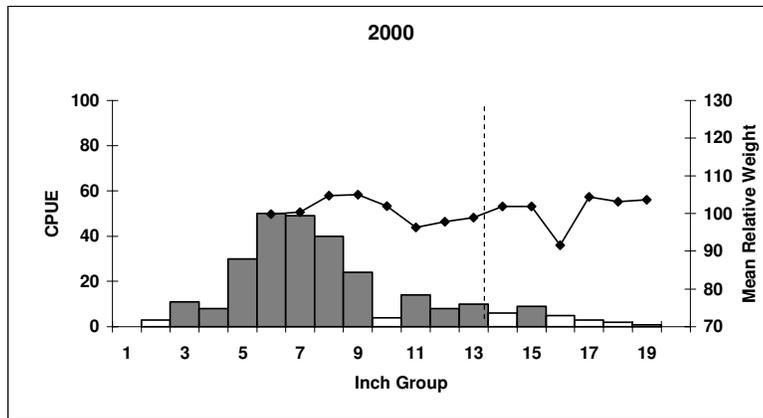
Length (inches) at age of capture

Year	1	2	3	4
1994				15.2 ⁽⁵⁾
2001	12.2 ⁽⁵⁾			

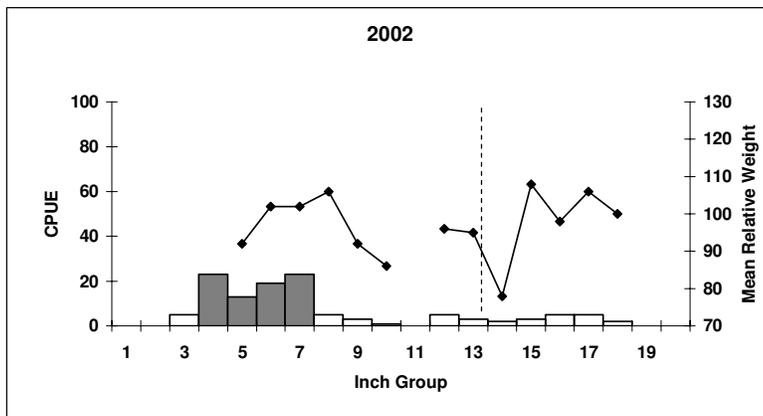
Largemouth Bass



Effort = 1.0
 Total CPUE = 181.0
 Stock CPUE = 49.0
 PSD = 47
 RSD-14 = 35
 % FLMB = 74.2
 %Pure Fla = 40



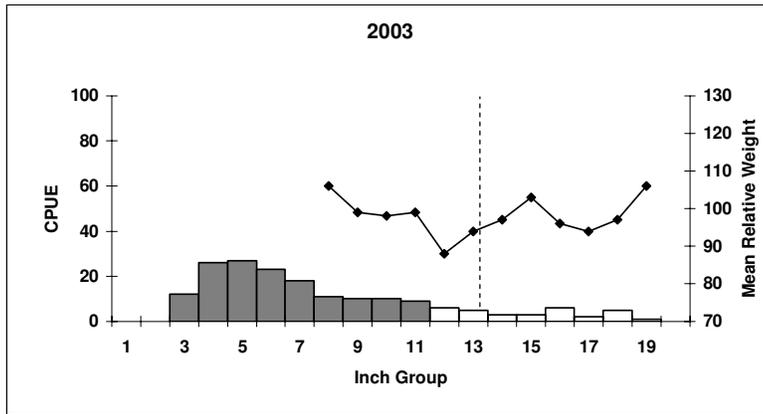
Effort = 1.0
 Total CPUE = 277.0
 Stock CPUE = 124.0
 PSD = 35
 RSD-14 = 21
 % FLMB = 68.3
 %Pure Fla = 26.7



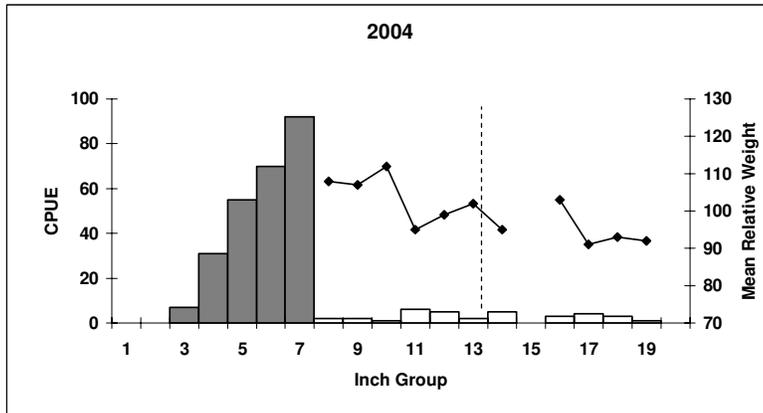
Effort = 1.0
 Total CPUE = 117.0
 Stock CPUE = 34.0
 PSD = 74
 RSD-14 = 50
 % FLMB = 74.2
 %Pure Fla = 26.7

Number of largemouth bass *Micropterus salmoides* caught per hour (CPUE, bars) and mean relative weights (Wr, lines) collected during fall electrofishing surveys on Tradinghouse Creek Reservoir, McLennan County, Texas. Dashed lines indicate minimum length limit at the time of sampling.

Largemouth Bass



Effort = 1.0
 Total CPUE = 177.0
 Stock CPUE = 71.0
 PSD = 44
 RSD-14 = 28
 % FLMB = 72.5
 %Pure Fla = 26.7



Effort = 1.0
 Total CPUE = 289.0
 Stock CPUE = 34.0
 PSD = 68
 RSD-14 = 47
 % FLMB = 72.0
 %Pure Fla = 44.8

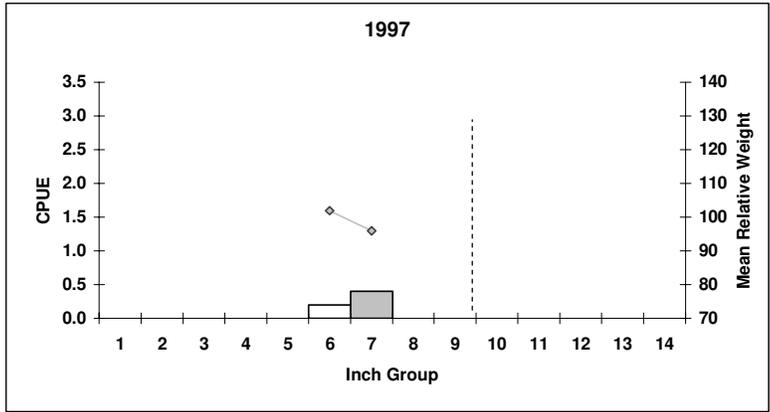
Number of largemouth bass *Micropterus salmoides* caught per hour (CPUE, bars) and mean relative weights (W_r , lines) collected during fall electrofishing surveys on Tradinghouse Creek Reservoir, McLennan County, Texas. Dashed lines indicate minimum length limit at the time of sampling.

Mean total lengths at age of capture for largemouth bass *Micropterus salmoides* collected during fall electrofishing surveys on Tradinghouse Creek Reservoir, McLennan County, Texas. Sample sizes are in parentheses.

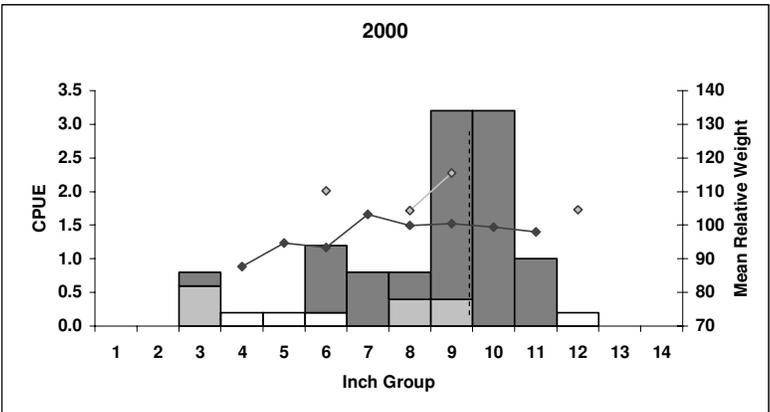
Length (inches) at age of capture

Year	1	2	3	4	5
1991	9.8 ⁽⁶⁾	11.6 ⁽⁶⁾	14.8 ⁽¹⁾	18.3 ⁽²⁾	
1994	9.1 ⁽⁹⁾	11.5 ⁽¹⁶⁾	15.1 ⁽²⁰⁾	17.4 ⁽²⁾	
1997	11.2 ⁽⁸⁾	15.2 ⁽¹³⁾	16.9 ⁽⁴⁾	18.7 ⁽²⁾	
2000	12.7 ⁽¹⁵⁾	14.9 ⁽¹⁰⁾	16.9 ⁽⁵⁾	17.3 ⁽³⁾	17.4 ⁽²⁾

White/Black Crappie

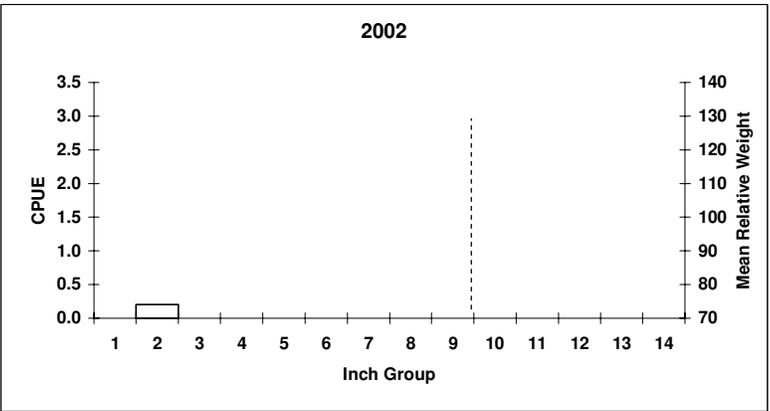


White
 Effort = 5.0
 Total CPUE = 0.6
 Stock CPUE = 0.6
 PSD = 0
 RSD-10 = 0



Black
 Effort = 5.0
 Total CPUE = 9.8
 Stock CPUE = 9.4
 PSD = 79
 RSD-10 = 45

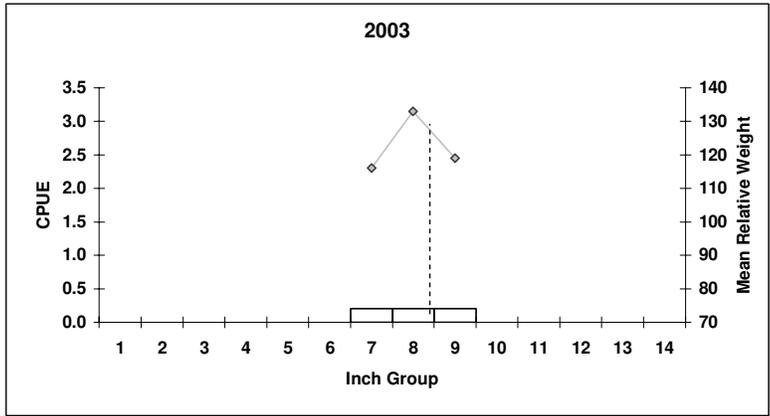
White
 Effort = 5.0
 Total CPUE = 1.8
 Stock CPUE = 1.2
 PSD = 83
 RSD-10 = 17



White
 Effort = 5.0
 Total CPUE = 0.2
 Stock CPUE = 0
 PSD = 0
 RSD-10 = 0

Number of white crappie *Pomoxis annularis* (light bars) and black crappie *Pomoxis nigromaculatus* (dark bars) caught per net night (CPUE, bars) and mean relative weights (Wr, lines) collected during winter trap netting surveys on Tradinghouse Creek Reservoir, McLennan County, Texas. Black crappie Wr's are the dark line and symbols; White crappie Wr's are the lighter line and symbols. Dashed lines indicate minimum length limit at the time of sampling.

White/Black Crappie



White
 Effort = 5.0
 Total CPUE = 0.6
 Stock CPUE = 0.6
 PSD = 67
 RSD-10 = 0



Black
 Effort = 5.0
 Total CPUE = 0.2
 Stock CPUE = 0.2
 PSD = 100
 RSD-10 = 100

White
 Effort = 5.0
 Total CPUE = 0.8
 Stock CPUE = 0.8
 PSD = 0
 RSD-10 = 0

Number of white crappie *Pomoxis annularis* (light bars) and black crappie *Pomoxis nigromaculatus* (dark bars) caught per net night (CPUE, bars) and mean relative weights (Wr, lines) collected during winter trap netting surveys on Tradinghouse Creek Reservoir, McLennan County, Texas. Black crappie Wr's are the dark line and symbols; White crappie Wr's are the lighter line and symbols. Dashed lines indicate minimum length limit at the time of sampling.

Mean total lengths at age of capture for white crappie *Pomoxis annularis* and black crappie *Pomoxis nigromaculatus* collected during winter trap netting surveys on Tradinghouse Creek Reservoir, McLennan County, Texas. Sample sizes are in parentheses.

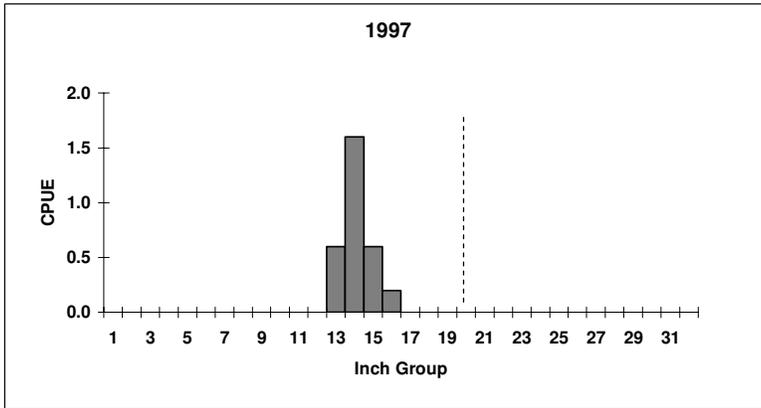
Length (inches) at age of capture for white crappie

Year	1	2	3
1991			
1994	7.6 ⁽¹⁴⁾	10.7 ⁽³⁾	12.7 ⁽⁵⁾
1997	8.0 ⁽⁴⁾		
2000	12.7 ⁽¹⁾		

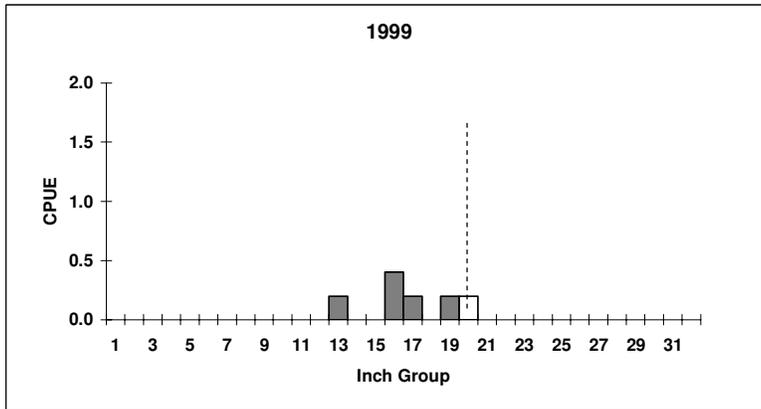
Length (inches) at age of capture for black crappie

Year	1	2
2000	10.1 ⁽¹⁸⁾	11.18 ⁽¹⁾

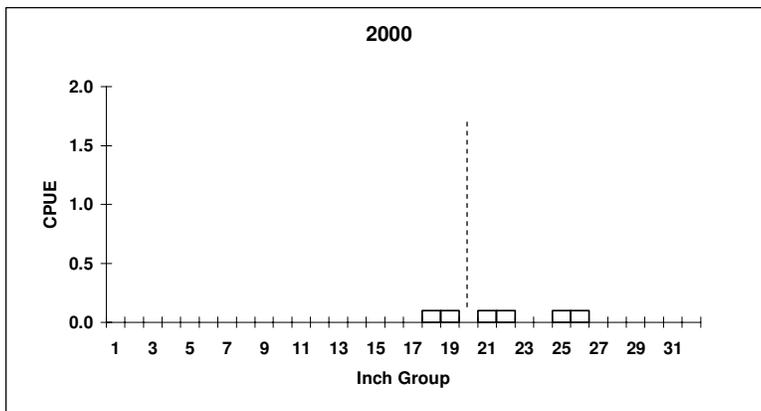
Red Drum



Effort = 5.0
 Total CPUE = 3.0
 Stock CPUE = 3.0



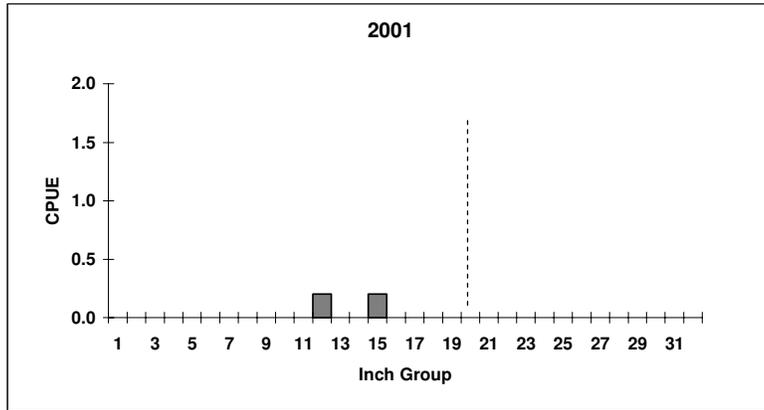
Effort = 5.0
 Total CPUE = 1.2
 Stock CPUE = 1.2



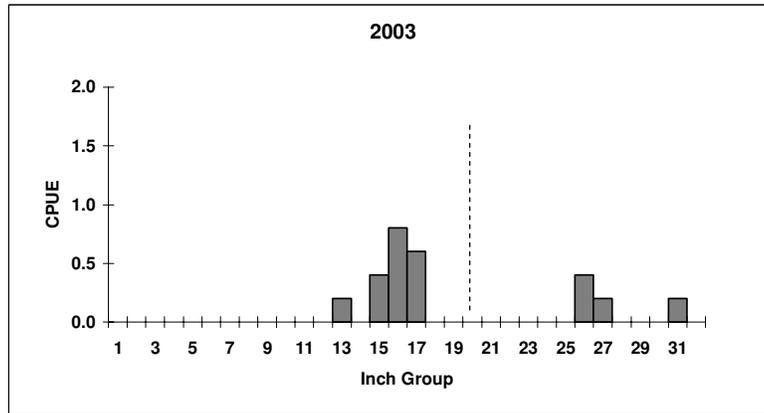
Effort = 10.0
 Total CPUE = 0.6
 Stock CPUE = 0.6

Number of Red Drum *Sciaenops ocellatus* caught per net night (CPUE, bars) during spring gill netting surveys on Tradinghouse Creek Reservoir, McLennan County, Texas. Dashed lines indicate minimum length limit at the time of sampling.

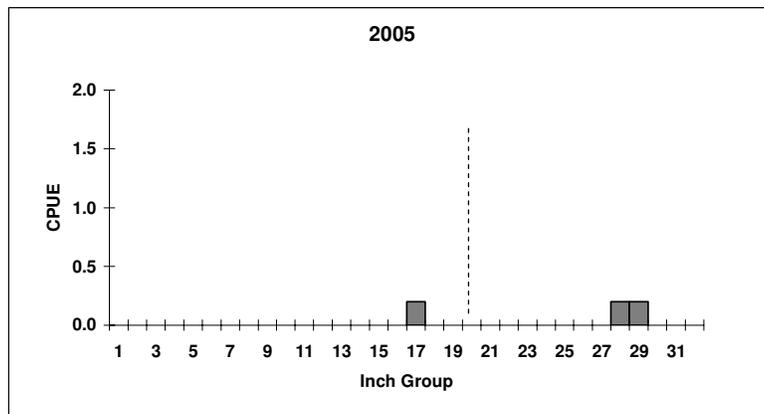
Red Drum



Effort = 5.0
 Total CPUE = 0.4
 Stock CPUE = 0.4



Effort = 5.0
 Total CPUE = 2.8
 Stock CPUE = 2.8



Effort = 5.0
 Total CPUE = 0.6
 Stock CPUE = 0.6

Number of Red Drum *Sciaenops ocellatus* caught per net night (CPUE, bars) during spring gill netting surveys on Tradinghouse Creek Reservoir, McLennan County, Texas. Dashed lines indicate minimum length limit at the time of sampling.

Fisheries Management Plan
Tradinghouse Creek Reservoir, Texas

Prepared - July 2005

Issue 1

A spike in winter 2000 trap netting catch rates for crappie led to several news releases and prompted increased interest and higher utilization of the resource for a short time in 2001. The winter 2002, 2003, and 2004 trap netting catch rates returned to normal ranges, and left constituents questioning why. Crappie were requested for stocking at a rate of 10.0 fish/acre in early 2005. There were no crappie brood fish at the Dundee Fish Hatchery at the time of the stocking request, and so brooders were collected from Lake Mexia in April 2005 and hauled to the hatchery for spawning. Those brood fish failed to produce an effective spawn this year, and so Tradinghouse Creek will not get its crappie stocking in 2005.

Management Strategies

1. Collect additional crappie brood stock for hatcheries (on an annual basis if needed) to ensure appropriate numbers for successful spawns. Stock fingerling crappie in spring 2006 and again in 2008 at 10.0 fish/acre. Perform trap netting surveys in winter 2006 and 2007 to evaluate the success of the first stocking, and pending results of these surveys, consider evaluating the 2008 stocking in the same manner in 2009 and 2010.

Issue 2

The 2000, 2001, and 2002 vegetation surveys found trace amounts of Hydrilla in Tradinghouse Creek Reservoir. The 2003 and 2004 surveys found none. Although it appears the three-year plan to treat the Hydrilla problems in the reservoir was successful, it is still a threat and a concern, both to recreators and to the power-plant.

Management Strategies

1. Vegetation should continue to be surveyed annually and information should be shared with TXU and McLennan County commissioners.

Issue 3

TXU is currently operating the power plant on a maintenance schedule only. Artificially warm water temperatures from year-round power plant discharge no longer exist, and the red drum fishery is at risk of being lost during cold weather. Anglers from a wide geographic area utilize the fishery.

Management Strategies

1. Annual stocking of red drum fingerlings should be maintained through 2009. Newly adopted stocking and acclimation procedures will be followed to improve post-stocking survival of these fingerlings. Reservoir use as well as the red drum fishery will be re-evaluated upon next report writing.

Issue 4

No facilities are present for physically challenged anglers and no bathrooms are available on the lake.

Management Strategies

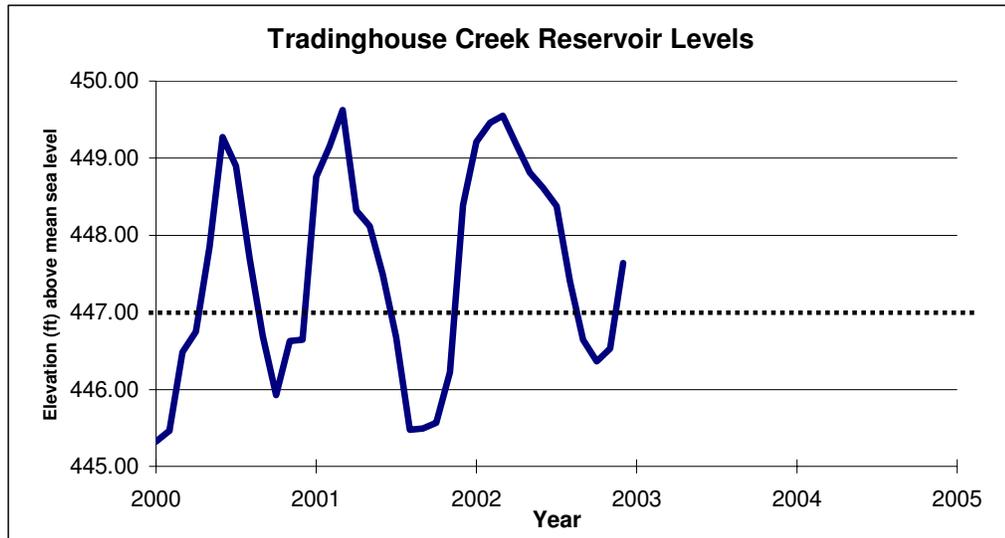
1. Work with TXU and McLennan County to further improve access on the lake. Make them aware of federal funds to improve lake access and assist with grant applications as necessary.

Appendix A: Number and catch per unit effort of species collected by gear type.

Number (N) and catch per unit effort (CPUE) of species collected from all gear types from Tradinghouse Creek Reservoir, Texas, 2004-05. Gill netting and trap netting CPUE is the number of fish per net night, while electrofishing CPUE is the number of fish per hour. Only targeted species are recorded.

Species	Gill netting		Trap netting		Electrofishing	
	N	CPUE	N	CPUE	N	CPUE
Gizzard shad					183	183.0
Threadfin shad					7	7.0
Red drum	3	0.6				
Channel catfish	15	3.0				
White bass	49	9.8				
Bluegill					176	176.0
Longear sunfish					57	57.0
Redear sunfish					5	5.0
Largemouth bass					289	289.0
White crappie			4	0.2		

Appendix B: Mean monthly water levels.



Appendix B. Monthly mean water levels for Tradinghouse Creek Reservoir from January 1, 2000, through December 31, 2005. Tick marks indicate the start of the year it is labeled with. Dashed line indicates the conservation pool level (447 feet) above mean sea level. Data for 2003 and 2004 are pending due to a change in procedures after power plant moved to a maintenance-only schedule.