

PERFORMANCE REPORT

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FEDERAL AID IN SPORT FISH RESTORATION ACT

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FEDERAL AID PROJECT F-30-R-31

STATEWIDE FRESHWATER FISHERIES MONITORING AND MANAGEMENT PROGRAM

2005 Survey Report

Coledo Creek Reservoir

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July 31, 2006

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SURVEY AND MANAGEMENT SUMMARY

Fish populations in Coletto Creek Reservoir were surveyed in 2005 using trap nets and electrofishing and in 2006 using gill nets. Anglers were surveyed from June 2005 through May 2006 with a roving creel survey. This report summarizes the results of the surveys and contains a management plan for the reservoir based on those findings.

- **Reservoir Description:** Coletto Creek Reservoir is a 3,100-acre reservoir located on Coletto Creek in the Guadalupe River Basin 13 miles southwest of Victoria. Regulated by the Guadalupe-Blanco River Authority, it receives water from Coletto Creek and several smaller tributaries and is used as a power plant cooling supply and for recreation. Approximately 600 acres are used for cooling ponds and are inaccessible to anglers. Water level is typically stable. Substrate is composed primarily of clays, deep loams and small rock. Littoral habitat consisted of many native and exotic species of aquatic vegetation and flooded timber.
- **Management History:** Important sport fish species include blue, channel, and flathead catfish, white bass, largemouth bass, and white and black crappie. Palmetto and red drum had been previously stocked in the reservoir. The 2002 management plan focused on issues with largemouth bass, relative abundance of palmetto bass, lack of creel data, and hydrilla. Extra largemouth bass sampling was conducted and age and growth data were acquired. Stocking of palmetto bass was discontinued due to low gill net catch rates and low angling pressure. Both voluntary (2002-2004) and roving creel surveys (June 2005 – May 2006) were implemented to obtain data. Hydrilla and water hyacinth restricted access to some areas of the reservoir; these problematic areas were treated with herbicides and bio-control organisms.
- **Fish Community**
 - **Prey species:** Gizzard shad and bluegill were the primary forage species present in Coletto Creek Reservoir. Gizzard shad abundance appeared to be increasing, with the majority being available to predators. Bluegill abundance was good but few bluegill were over 6-inches in length.
 - **Catfishes:** Blue, channel, and flathead catfish were present in the reservoir with channel catfish being the most abundant. Channel catfish abundance was increasing with many legal size fish available.
 - **Temperate basses:** Palmetto bass are assumed no longer present in the reservoir, as evidenced by no catches in either the 2006 gill net survey or during the roving creel survey. White bass were present in the reservoir and abundance has increased.
 - **Largemouth bass:** Largemouth bass continued to be abundant in the reservoir. Results from the 2005-2006 creel survey indicated many largemouth bass over 18-inches in length were caught by anglers. Largemouth bass growth rates to legal size were good.
 - **Crappie:** Black and white crappie were present in the reservoir with white crappie being most abundant. White crappie abundance increased and many anglers reported catching close to the daily bag limit of crappie during the summer months.
 - **Red drum:** Red drum were stocked in 2001 but no red drum have been collected in any of the management surveys. However, some anglers have harvested red drum as evidenced by the photographs in the GBRA Coletto Creek Reservoir headquarters office.
- **Management strategies:** Continue to monitor angling pressure and angler catch and harvest rates by conducting creel surveys. Continue to work with GBRA on controlling milfoil and hydrilla in problematic areas and water hyacinth throughout the reservoir.

INTRODUCTION

This document is a summary of fisheries data collected from Coletto Creek Reservoir in 2005-2006. The purpose is to provide fisheries information and provide management recommendations to protect and improve the sport fishery. This report deals primarily with major sport fishes and important prey species. Management recommendations address existing problems or opportunities. Historical data is presented with the 2005-2006 data for comparison.

Reservoir Description

Coletto Creek Reservoir is a 3,100-acre reservoir located on Coletto Creek in the Guadalupe River Basin 13 miles southwest of Victoria. Regulated by the Guadalupe-Blanco River Authority (GBRA), it receives water from Coletto Creek and several smaller tributaries and is used as a power plant cooling supply and for recreation. Approximately 600 acres are used for cooling ponds and are inaccessible to anglers. Water level is typically stable. Water level was below conservation pool during habitat, electrofishing, and trap net surveys. Substrate is composed primarily of clays, deep loams and small rock. Littoral habitat consisted of many native species of aquatic vegetation including bullrush, cattail, coontail, pondweed species, American lotus, banana lily, and periodically flooded live and dead terrestrial vegetation. Exotic species present include hydrilla, water hyacinth, Eurasian water milfoil, and parrot feather. Hydrilla and water hyacinth were problematic during the sampling period and subsequently treated with herbicides (hydrilla and water hyacinth, GBRA) and bio-control organisms (hydrilla only) Texas Parks and Wildlife Department (TPWD).

Management History

Previous management strategies and actions: Management strategies and actions from the previous survey report (Elder and Findeisen 2002) included:

1. Conduct additional electrofishing surveys and contact bass clubs to obtain legal size or greater largemouth bass for additional age and growth data.

Action: An additional electrofishing survey was conducted in the fall 2002. The largemouth bass catch rate (fish/h) from this survey (169.0/h) indicated that the relative abundance of largemouth bass was better than previous surveys had suggested. Legal-size and longer largemouth bass were collected from a tournament in the fall 2002, however, tournament anglers were reluctant to donate enough fish (N=17) for an adequate sample size. Thus, gathering fish for age and growth analysis from bass tournaments was discontinued. Age analysis of the 17 donated fish did not indicate slow growth.
2. Obtain bass tournament data from a voluntary creel survey, GBRA's tournament records, and from bass clubs.

Action: A voluntary creel survey was implemented in 2002 but angler participation decreased substantially during the summer 2002. The voluntary creel survey was discontinued in 2004 and a roving creel was implemented in June 2005. This roving creel survey will be conducted every other year. GBRA's tournament records were obtained but showed less than one tournament per week. This was possibly due to Choke Canyon Reservoir filling and anglers fishing Choke Canyon Reservoir rather than Coletto Creek Reservoir. No data was obtained from bass clubs fishing Coletto Creek Reservoir.
3. Suspend palmetto bass stockings and monitor gizzard shad numbers through electrofishing surveys.

Action: Palmetto bass were dropped from the stocking request for Coletto Creek Reservoir. An additional electrofishing survey was conducted in the fall 2002.
4. Continue gathering creel data from a voluntary creel survey and promote participation through press releases.

Action: Angler participation in the voluntary creel survey decreased substantially by the summer 2002 despite press releases. The voluntary creel survey was eventually discontinued in 2004.

5. Continue to coordinate and cooperate with GBRA on monitoring and controlling hydrilla with herbicides and bio-control organisms.

Action: District staff continues to serve on the GBRA vegetation control advisory board for Coletto Creek Reservoir. Additionally, district staff released approximately 450,000 hydrilla flies *Hydrellia pakistanae* in summer 2005.

Harvest regulation history: Sportfishes in Coletto Creek Reservoir are currently managed with statewide regulations with the exception of red drum, that are being managed with a 20-inch minimum length limit and three fish daily bag limit (Table 2). Coletto Creek Reservoir was opened to anglers in 1981. The largemouth bass regulation at the time of opening was a 16-inch minimum length limit and three fish daily bag limit but was changed to a 14-inch minimum length limit with a five fish daily bag limit in the late 80s.

Stocking history: Coletto Creek Reservoir was stocked in 2003, 2004, and 2005 with northern largemouth bass as part of a research project. A single red drum stocking occurred in 2001 in an attempt to create another sportfish population for anglers to target, however, no red drum have been collected during routine fisheries surveys. Palmetto bass were last stocked in 1999 but have been discontinued due to low gill net catch rates and low directed fishing effort. The complete stocking history is in Table 3.

Vegetation/habitat history: Coletto Creek Reservoir supports native emergent, native submergent, and native floating vegetation, several exotic species, and standing timber (Table 4). Hydrilla and milfoil have been problematic in the reservoir by restricting access and are treated annually with herbicides. Additionally, bio-control organisms (hydrilla flies) have been introduced to assist with hydrilla control. Hydrilla abundance in the reservoir has decreased substantially since 1998. This is probably due to high water temperatures, herbivores such as tilapia, hydrilla fly introductions, and competition with native species such as coontail.

Water hyacinth, while scarcely present in the reservoir, did not become problematic until 2005. It is thought that the water hyacinth was flushed from an ornamental pond adjacent to Coletto Creek Reservoir during a flood event in 2004. Through GBRA's control efforts, water hyacinth is now under control at this reservoir. Yet, the potential exists for it to become problematic again.

METHODS

Fishes were collected using electrofishing (1.0 hours at 12 5-minute stations), trap nets (5 net nights at 5 stations), and gill nets (5 net nights at 5 stations). Catch per unit effort (CPUE) for electrofishing was recorded as the number of fish caught per hour of actual electrofishing (fish/h) and for gill and trap nets as the number of fish caught in one net set overnight (fish/nn). Access, aquatic vegetation, and habitat surveys were conducted in 2005. All sampling sites were randomly selected and all surveys were conducted according to the Fishery Assessment Procedures (TPWD, Inland Fisheries Division, unpublished manual revised 2005). Ages for largemouth bass were determined using five fish per inch group in 2002, all fish greater than 8-inches in 2003, and 13 fish from 13-15 inches total length in 2005.

Genetic composition of largemouth bass was determined by using Micro-satellite DNA analysis in 2005 and by electrophoresis for previous years.

A roving creel survey was conducted from June 2005 through May 2006 in accordance to the Fishery Assessment Procedures (TPWD, Inland Fisheries Division, unpublished manual revised 2005).

Sampling statistics (CPUE for various length categories) and structural indices [Proportional Stock Density (PSD), Relative Stock Density Legal (RSD-legal inch group)], and condition indices [relative weight indices (W_r)] were calculated for target fishes according to Anderson and Neumann (1996). Index of vulnerability (IOV) was calculated for gizzard shad according to DiCenzo et al. (1996). Relative standard error (RSE = $100 \times \text{SE of the estimate/estimate}$) was calculated for all CPUE statistics and for creel statistics and SE was calculated for structural indices and IOV. Source for water level data was the United States

Geological Survey website.

RESULTS AND DISCUSSION

Habitat: Littoral zone habitat consisted primarily of nondescript shoreline (due to low water level at time of habitat survey) overhanging brush, standing timber, native emergent vegetation, native submergent vegetation, native floating vegetation, and exotic vegetation (Table 4). Hydrilla is decreasing in the reservoir but is being replaced by coontail.

Creel: Directed effort by anglers was highest for largemouth bass (69%), followed by anglers fishing for all catfishes (12%), white crappie (9%) and anglers fishing for anything (8%) (Table 5). Total fishing effort for all species at Coletto Creek Reservoir was 71,066 h from June 2005 through May 2006, and anglers spent an estimated \$593,640 on direct expenditures (Table 6).

Prey species: Electrofishing catch rates for gizzard shad and bluegill were 97.0/hour and 302.0/h, respectively. The electrofishing catch rate for gizzard shad in 2005 is higher than in both 2002 (15.0/h) and 2003 (24.0/h) (Figure 2). The IOV for gizzard shad was 89, indicating 89% of the gizzard shad sampled in 2005 were less than 8 inches in length and available to most predators. The 2005 bluegill electrofishing catch rate was lower than both 2003 (399.0/h) and 2002 (786.0/h) (Figure 3). Size range of bluegill and other sunfish species were suitable for most predators. Sunfish do not provide a fishery in this reservoir, as few fish reach quality size. Bluegill were targeted by anglers but directed effort toward bluegill was minimal, as percent directed effort was less than one percent (Table 5).

Blue catfish: The 2006 blue catfish gill net catch rate was 1.2/nn, similar to previous surveys (Figure 4). The gill net catch rate for blue catfish is low in this reservoir. Anglers spent 94.65 h seeking blue catfish and directed effort per acre was 0.04 h/acre (Table 7). Anglers harvested eight blue catfish, as documented in creel interviews (Figure 5), while the estimated total harvest of blue catfish was 527 and the estimated harvest rate was 0.2 blue catfish/acre (Table 7). Less than one percent of legal blue catfish caught were released (Table 7).

Channel catfish: The gill net catch rates for channel catfish in 2006 was 8.8/nn, higher than in 1998 (1.6/nn) and 2002 (2.0/nn) (Figure 6). The population structure of channel catfish was good as PSD was 46. Condition of stock-size and larger channel catfish was good with mean relative weights near 90. Anglers spent 418.6 h seeking channel catfish and directed effort per acre was 0.2 h/acre (Table 8). Anglers harvested 74 channel catfish, as documented in creel interviews (Figure 7), while the estimated total harvest of channel catfish was 3,702 and the estimated harvest rate was 1.48 channel catfish/acre (Table 8). One percent of legal channel catfish caught were released (Table 8).

White bass: The gill net catch rate for white bass was 10.6/nn in 2006, higher than 1998 (2.0/nn) and 2002 (1.6/nn) (Figure 8). The population size structure for white bass was good, as 57% of the stock size fish were greater than legal size (10 inches). The mean relative weight of white bass over stock size was in the mid 80s, indicating below average condition (this may be due to the fact that these fish were collected just after the spring spawn). Anglers specifically targeting white bass were not intercepted during creel surveys (Table 9). However, anglers harvested 28 white bass as documented in creel interviews (Figure 9), while the estimated total harvest of white bass was 1,546 and the estimated harvest rate was 0.6 white bass/acre (Table 9). Less than one percent of legal white bass caught were released (Table 9).

Palmetto bass: No palmetto bass were collected in 2006. Gill net catch of palmetto bass has decline since 1998 (Figure 10). Anglers specifically targeting palmetto bass were not intercepted during any creel surveys. Additionally, no anglers caught or harvested palmetto bass during any creel surveys. The continued decline in gill net catch rate of palmetto bass and the lack of angler catch and harvest is attributed to not stocking palmetto bass since 1999.

Largemouth bass: The electrofishing catch rate for largemouth bass was 121.0/h in 2005, lower than 2002 (169.0/h) and 2003 (200.0/h) (Figure 11). Size structure of largemouth bass was good as the PSD was 45 and RSD-14 was 13. Condition of stock-size and larger fish was good with mean relative weights in the low 90s. Growth to legal size (14 inches) was good as the average age was 2.6 years (N=13; range 2-3 years) in 2005. 2001, 2002, and 2003 length at age data is presented in Figure 12. Micro-satellite DNA analysis indicated 81% frequency of Florida largemouth bass alleles with 43% of the population being pure Florida largemouth bass (Table 10). Anglers spent 49,244.8 h seeking largemouth bass and directed effort per acre was 19.7 h (Table 11). Anglers harvested 191 largemouth bass, as documented in creel interviews (Table 11), while the estimated total harvest of largemouth bass was 5,702 and the estimated harvest rate was 2.3 largemouth bass/acre (Table 10). Eighty three percent of legal largemouth bass caught were released (Table 10). Live release tournament anglers accounted 89% of the largemouth bass documented as being harvested during the creel survey period (Figure 13).

White Crappie: The trap net catch rate for white crappie was 12.4/ nn in 2005, higher than in 2001 (3.5/nn) and 2003 (2.6/nn) (Figure 14). Size structure of white crappie was good. Condition of stock-size fish was good with mean relative weights near 100. Anglers spent 6,432.3 h seeking white crappie and directed effort per acre was 2.6 h (Table 12). Anglers harvested 197 white crappie, as documented in creel interviews (Figure 15), while the estimated total harvest of white crappie was 10,550 and the estimated harvest rate was 4.2 white crappie/acre (Table 12). Less than one percent of legal white crappie caught were released (Table 12).

Red Drum: Red drum fingerlings were stocked in Coletto Creek in 2001 in an effort to enhance angling opportunities. No red drum have been collected from this reservoir during any routine surveys. Anglers have reported harvesting red drum from the reservoir, as evidenced by the photographs in the GBRA Coletto Creek Reservoir headquarters office. Anglers specifically targeting red drum were not intercepted during any creel surveys and no anglers reported catching red drum during creel interviews. Red drum will not be stocked again in this reservoir.

Fisheries management plan for Coletto Creek Reservoir, Texas

Prepared - June 2006.

ISSUE 1 A roving creel survey proved to be useful by gathering information about the recreational sport fishery as well as identifying those that were once thought to be nearly non-existent, such as the crappie fishery. Future creel surveys may provide greater insight into all existing fisheries as well as allow for a more in-depth focus on specific issues such as the high angling pressure for largemouth bass. Additionally, data gathered during creel surveys were used to write and distribute press releases concerning the fisheries.

MANAGEMENT STRATEGIES

1. Continue to monitor the angling pressure and catch and harvest rates of the existing fisheries through the use of a creel survey every other year. Future creel surveys will be designed from the data collected during the 2005-2006 roving creel survey in order to maximize effort during these surveys.
2. Continue to write and distribute press releases concerning angling opportunities identified from creel survey data.

ISSUE 2 Exotic vegetation continues to be problematic in this reservoir. Hydrilla and milfoil have been effectively controlled in the past through vegetation control activities conducted by GBRA, specifically in problematic areas. Additionally, TPWD's releases of bio-control agents for hydrilla appear to be working at the release sites. Water hyacinth became more abundant in 2005, resulting in herbicide control activities conducted by GBRA.

MANAGEMENT STRATEGIES

1. Continue to serve as advisors to GBRA on all vegetation control activities.
2. Continue to release bio-control agents for hydrilla control.
3. Work with the U.S. Department of Agriculture on obtaining new bio-control agents for water hyacinth.

SAMPLING SCHEDULE JUSTIFICATION:

The proposed sampling schedule includes electrofishing, trap net, and creel surveys in 2007/2008 and mandatory monitoring in 2009/2010 (Table 13). Biologist-selected trap netting will be conducted at the same time as the routine trap net sampling and spring trap netting will be conducted at both random and biologist-selected stations to measure the influence of thick vegetation experienced during fall trap net surveys. Gill net surveys will be conducted once every four years to monitor the catfish and white bass populations.

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- DiCenzo, V.J., M.J. Maceina, and M.R. Stimpert. 1996. Relationships between reservoir trophic state and gizzard shad population characteristics in Alabama reservoirs. North American Journal of Fisheries Management 16:888-895.
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Quarterly Water Level

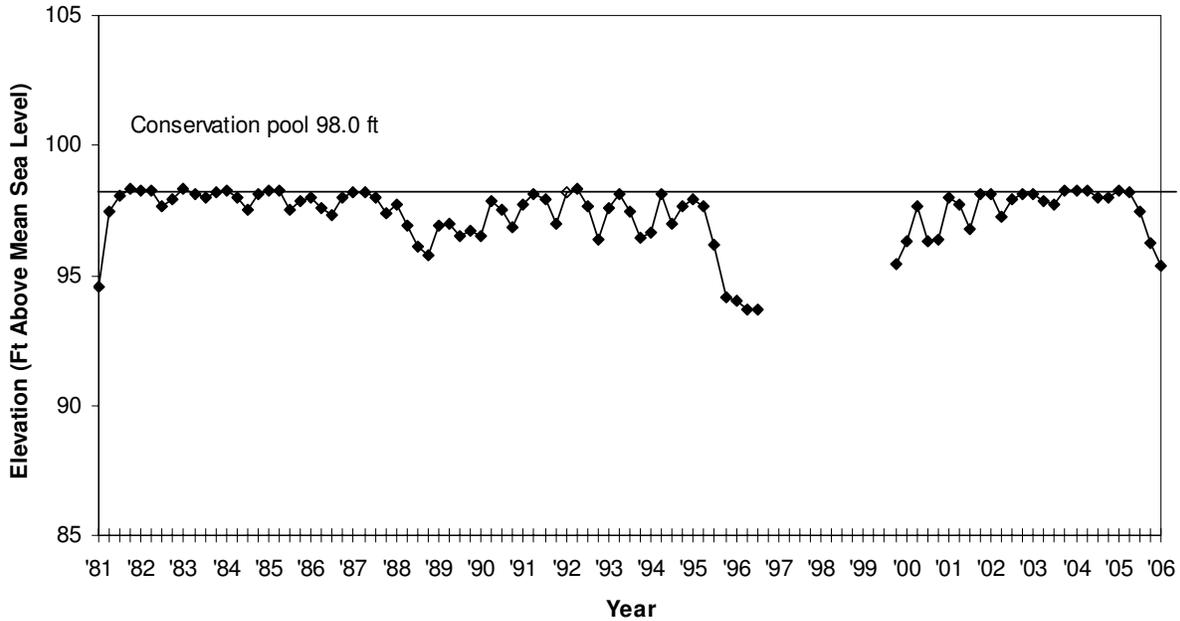


Figure 1. Quarterly water level elevations in feet above mean sea level recorded for Coletto Creek Reservoir, Texas.

Table 1. Characteristics of Coletto Creek Reservoir, Texas.

Characteristic	Description
Year constructed	1980
Controlling authority	Guadalupe-Blanco River Authority
Counties	Goliad, Victoria
Reservoir type	Mainstem
Shoreline Development Index	7.8
Conductivity	500-700 umhos/cm
Access: Boat	Good
Bank	Adequate, park area with pier
Handicapped	Adequate, park area with pier

Table 2. Harvest regulations for Coletto Creek Reservoir.

Species	Bag Limit	Minimum-Maximum Length (inches)
Catfish: channel and blue catfish, their hybrids and subspecies	25 (in any combination)	12 – No Limit
Catfish, flathead	5	18 – No Limit
Bass, white	25	10 – No Limit
Bass, palmetto	5	18 – No Limit
Bass, largemouth	5	14 – No Limit
Crappie: white and black crappie, their hybrids and subspecies	25 (in any combination)	10 – No Limit
Drum, red	3	20 – No Limit

Table 3. Stocking history of Coletto Creek Reservoir, Texas. Size categories are: FGL = 1-3 inches and ADL = adults.

Year	Number	Size	Year	Number	Size
	<u>Threadfin shad</u>			<u>Red drum</u>	
1980	17,900	ADL	2001	25,445	FGL
	<u>Nile perch</u>				
1981	68,119	FGL			
	<u>Peacock bass</u>				
1980	4,147	FGL			
	<u>Coppernose bluegill</u>				
1982	<u>249,992</u>	FGL			
	<u>Blue catfish</u>				
1990	<u>31,496</u>	FGL			
	<u>Channel catfish</u>				
1980	<u>100,583</u>	FGL			
	<u>Palmetto bass</u>				
1981	34,461	FGL			
1982	30,980	FGL			
1986	30,500	FGL			
1987	10,021	FGL			
1988	64,567	FGL			
1989	68,584	FGL			
1991	46,000	FGL			
1992	31,300	FGL			
1995	30,470	FGL			
1996	46,500	FGL			
1997	41,021	FGL			
1998	49,642	FGL			
1999	<u>46,747</u>	FGL			
Species total	484,293				
	<u>Largemouth bass</u>				
2003	38,613	FGL			
2004	31,872	FGL			
2005	<u>31,249</u>	FGL			
Species total	101,734				
	<u>Florida largemouth bass</u>				
1980	356	ADL			
1981	92,092	FGL			
1982	160,294	FGL			
1983	<u>161,800</u>	FGL			
Species total	414,542				

Table 4. Survey of littoral zone and physical habitat types, Coletto Creek Reservoir, Texas, 2005. A linear shoreline distance (miles) was recorded for each habitat type found. Surface area (acres) and percent of reservoir surface area was determined for each type of aquatic vegetation found.

Shoreline habitat type	Shoreline Distance		Surface Area	
	Miles	Percent of total	Acres	Percent of reservoir surface area
Boulder	0.5	0.7		
Bulkhead	0.3	0.5		
Concrete	0.7	1.0		
Cutbank	3.4	5.0		
Eroded bank	1.5	2.1		
Featureless	44.7	65.3		
Overhanging brush	16.8	24.6		
Rip rap	0.2	0.3		
Rock bluff	<0.1	<0.1		
Rocky/gravel shoreline	0.3	0.4		
Total	68.5	100		
Boat dock	0.3	0.5		
Standing timber	30.9	44.9	580.0	22.7
Native emerged vegetation ^a	13.4	19.5	25.2	1.0
Native floating vegetation ^b	2.9	4.2	51.8	2.0
Native submerged vegetation ^c	13.6	19.9	102.2	4.0
Hydrilla	6.1	8.9	69.3	2.7
Milfoil	6.3	9.2	65.3	2.6
Water hyacinth	0.3	0.4	0.3	<0.1

^a Cattail and bulrush

^b Spatterdock and banana lily

^c Coontail, American pondweed, and water stargrass

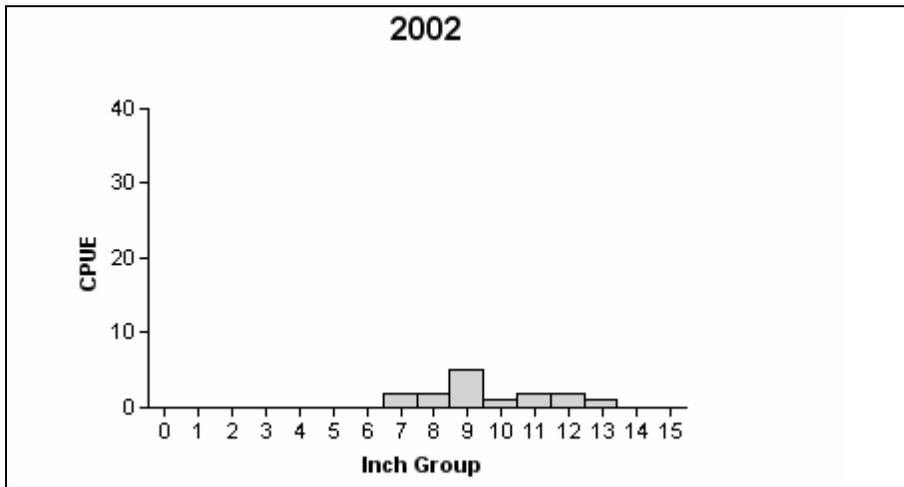
Table 5. Percent directed effort by species for Coletto Creek Reservoir, Texas, June 2005 through May 2006.

Species	Year
	2005/2006
All catfish species	12
Blue catfish	<1
Channel catfish	<1
Bluegill	<1
Largemouth bass	69
All crappie species	<1
White crappie	9
Anything	8

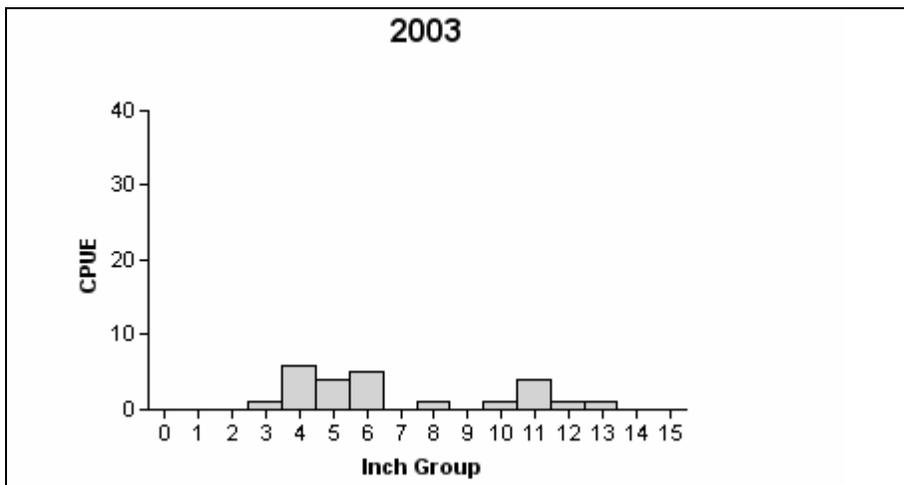
Table 6. Total fishing effort for all species and total directed expenditures at Coletto Creek Reservoir, Texas, June 2005 through May 2006.

Creel Statistic	Year
	2005/2006
Total fishing effort (h)	71,066
Total directed expenditures (\$)	593,640

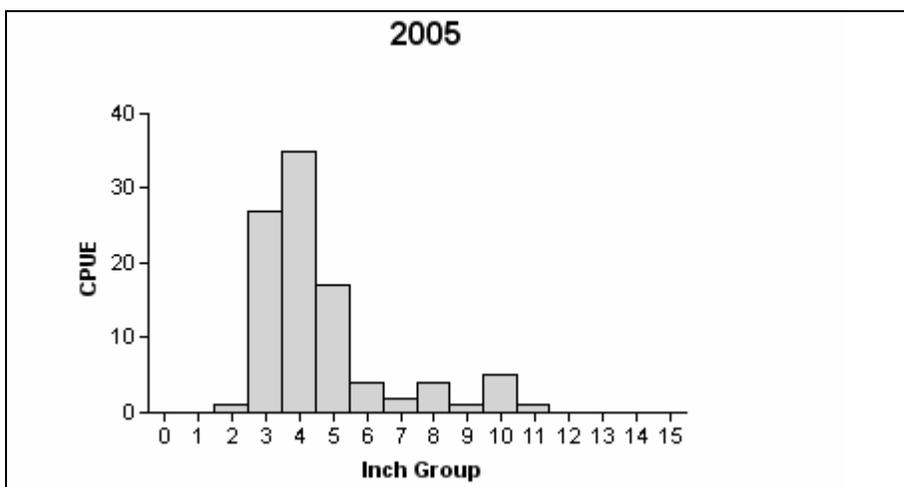
Gizzard Shad



Effort = 1.0
 Total CPUE = 15.0 (38; 15)
 IOV = 13 (0.07)



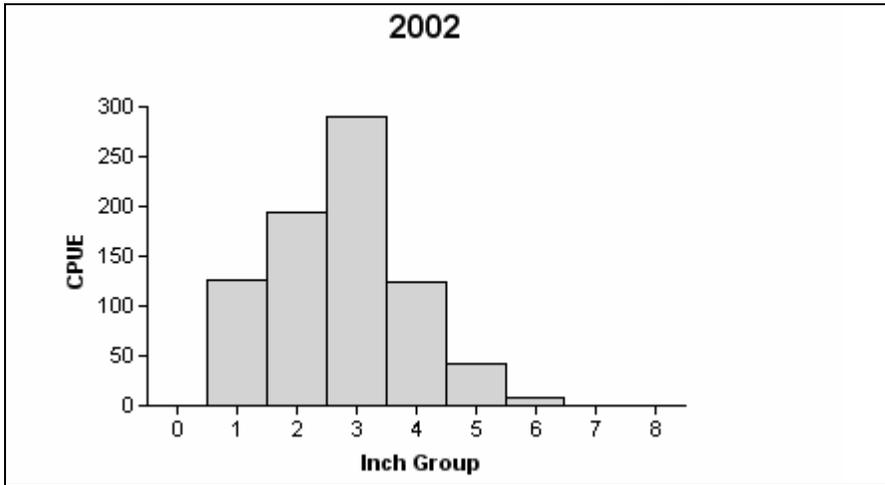
Effort = 1.0
 Total CPUE = 24.0 (39; 24)
 IOV = 66 (0.12)



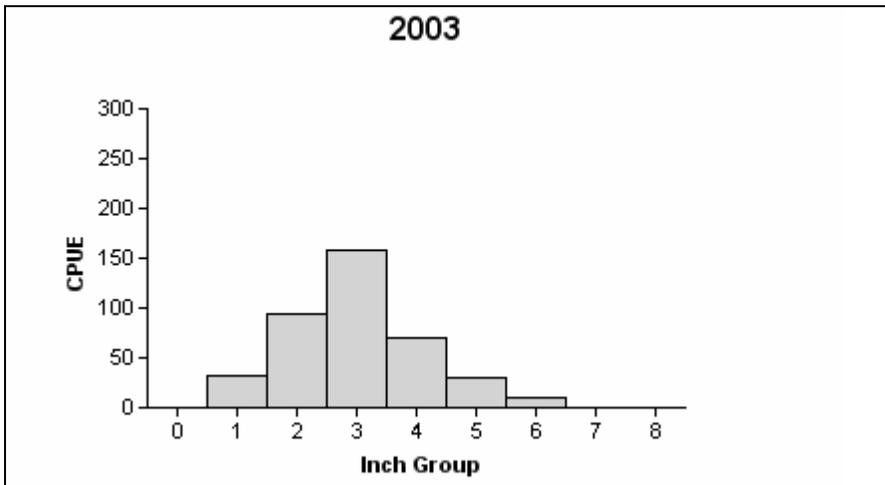
Effort = 1.0
 Total CPUE = 97.0 (24; 97)
 IOV = 89 (0.05)

Figure 2. Number of gizzard shad caught per hour (CPUE, bars) and population indices (RSE and N for CPUE and SE for IOV are in parentheses) for fall electrofishing surveys, Coletto Creek Reservoir, Texas, 2002, 2003, and 2005.

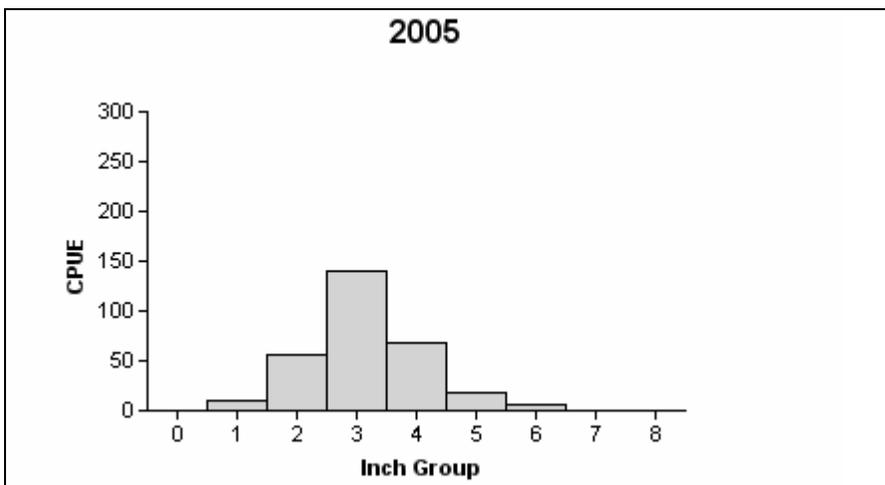
Bluegill



Effort = 1.0
 Total CPUE = 786.0 (21; 786)
 PSD = 2 (0.01)



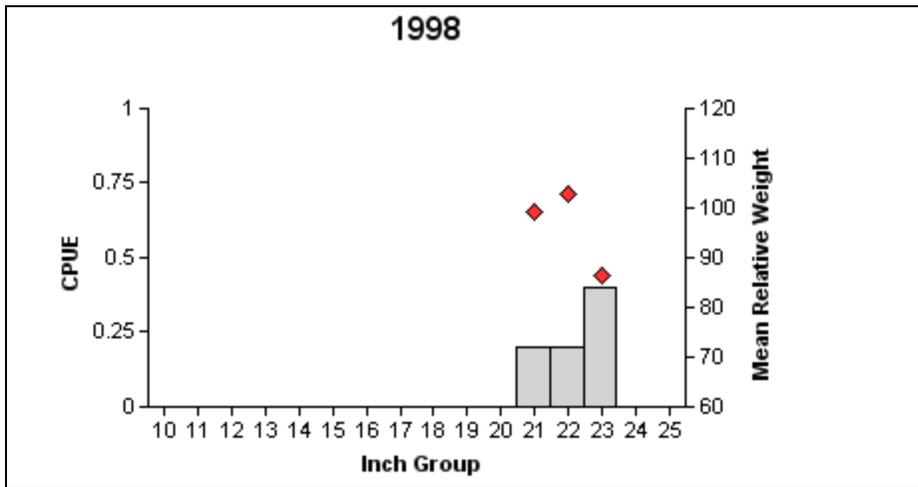
Effort = 1.0
 Total CPUE = 399.0 (27; 399)
 PSD = 4 (0.01)



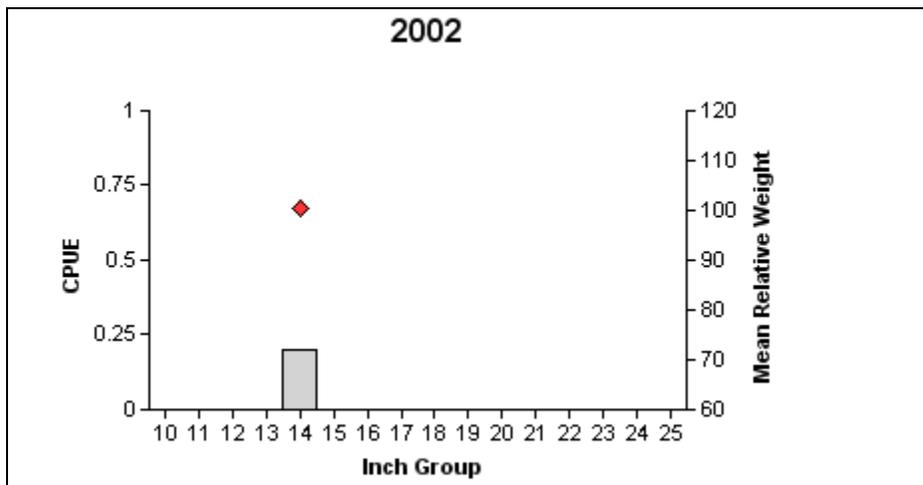
Effort = 1.0
 Total CPUE = 302.0 (33; 302)
 PSD = 3 (0.01)

Figure 3. Number of bluegill caught per hour (CPUE, bars) and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for fall electrofishing surveys, Coletto Creek Reservoir, Texas, 2002, 2003, and 2005.

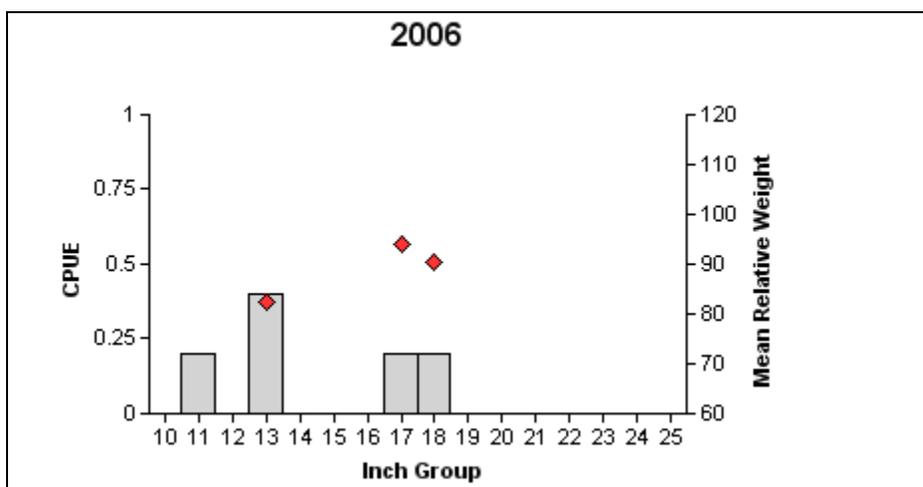
Blue Catfish



Effort = 5.0
 Total CPUE = 0.8 (50; 4)
 PSD = 100 (0.00)



Effort = 5.0
 Total CPUE = 0.4 (100; 2)
 PSD = 50 (0.00)



Effort = 5.0
 Total CPUE = 1.2 (50; 6)
 PSD = 20 (0.25)

Figure 4. Number of blue catfish caught per net night (CPUE, bars) and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for spring gill surveys, Coletto Creek Reservoir, Texas, 1998, 2002, and 2006.

Blue Catfish

Table 7. Creel survey statistics for blue catfish at Coletto Creek Reservoir from June 2005 through May 2006, where total catch per hour is for anglers targeting blue catfish and total harvest is the estimated number of blue catfish harvested by all anglers. Relative standard errors (RSE) are in parentheses.

Creel Survey Statistic	Year
	2005/2006
Directed effort	94.7 (150)
Directed effort/acre	0.0 (150)
Total catch/hour	0.0
Total harvest	527.0 (164)
Harvest/acre	0.2 (164)
Percent legal released	<1

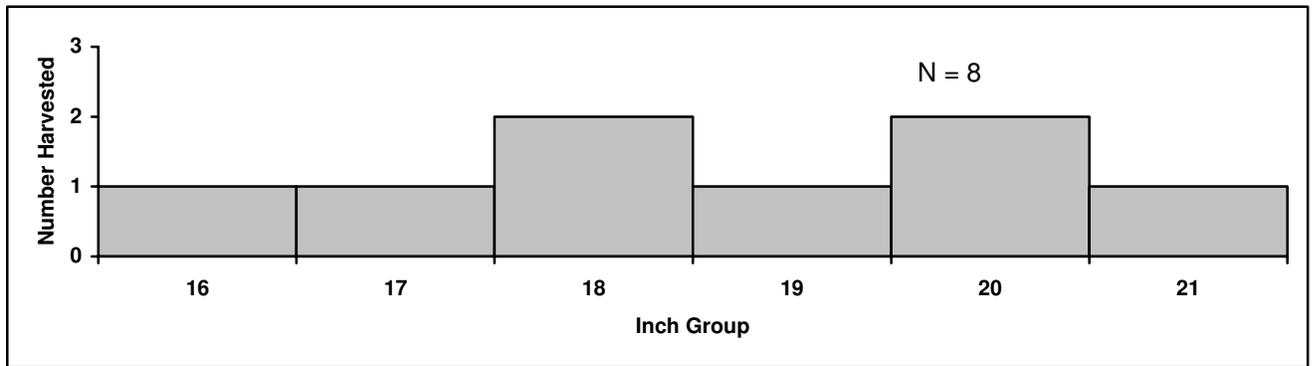
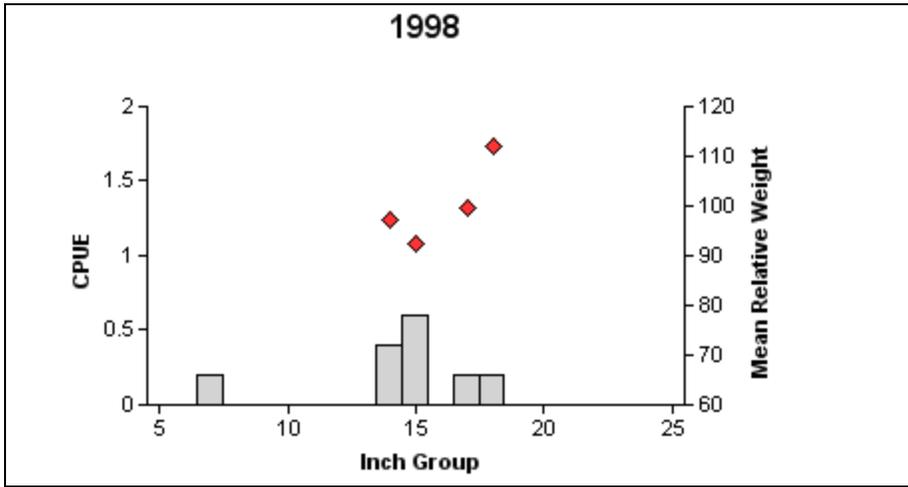
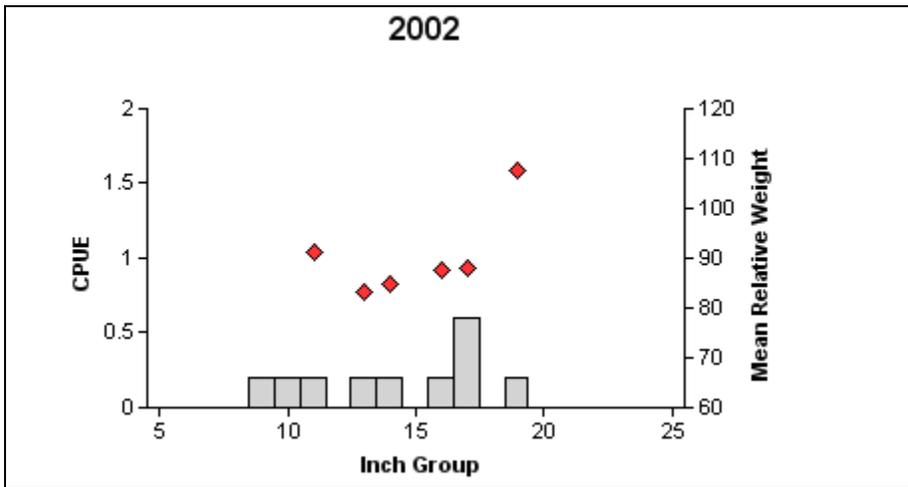


Figure 5. Length frequency of harvested blue catfish observed during creel surveys at Coletto Creek Reservoir, Texas, from June 2005 through May 2006, all anglers combined. N is the number of harvested blue catfish observed during creel surveys.

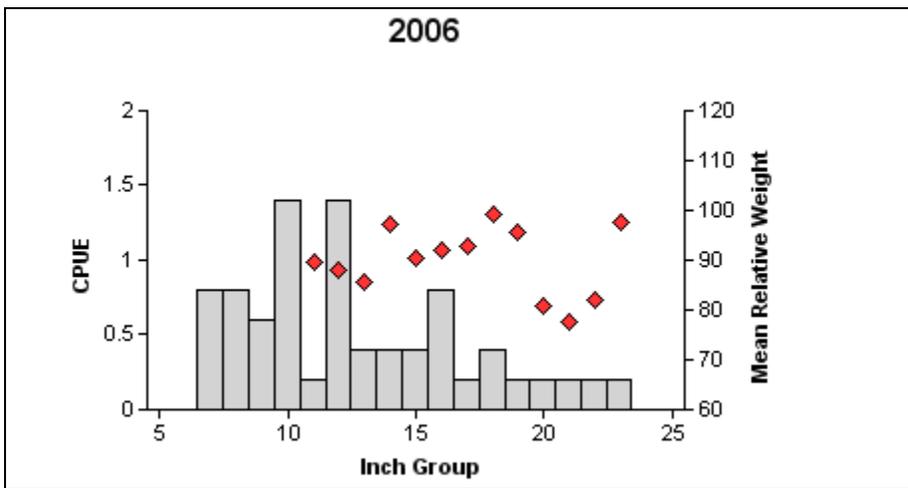
Channel Catfish



Effort = 5.0
 Total CPUE = 1.6 (25; 8)
 PSD = 29 (0.25)



Effort = 5.0
 Total CPUE = 2.0 (35; 10)
 PSD = 62 (0.17)



Effort = 5.0
 Total CPUE = 8.8 (43; 44)
 PSD = 46 (0.12)

Figure 6. Number of channel catfish caught per net night (CPUE, bars) and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for spring gill surveys, Coletto Creek Reservoir, Texas, 1998, 2002, and 2006.

Channel Catfish

Table 8. Creel survey statistics for channel catfish at Coletto Creek Reservoir from June 2005 through May 2006, where total catch per hour is for anglers targeting channel catfish and total harvest is the estimated number of channel catfish harvested by all anglers. Relative standard errors (RSE) are in parentheses.

Creel Survey Statistic	Year
	2005/2006
Directed effort	418.6 (81)
Directed effort/acre	0.2 (81)
Total catch/hour	2.2
Total harvest	3,702.0 (59)
Harvest/acre	1.5 (59)
Percent legal released	1.3

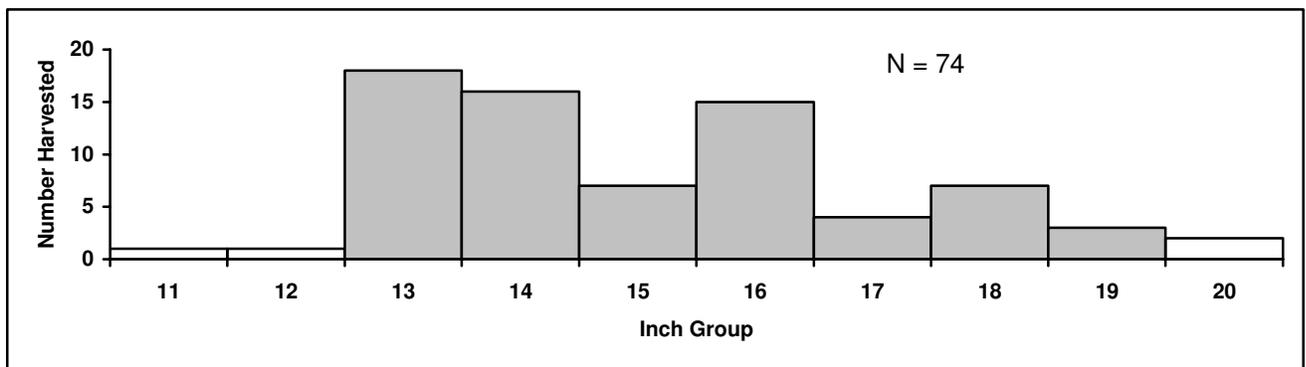
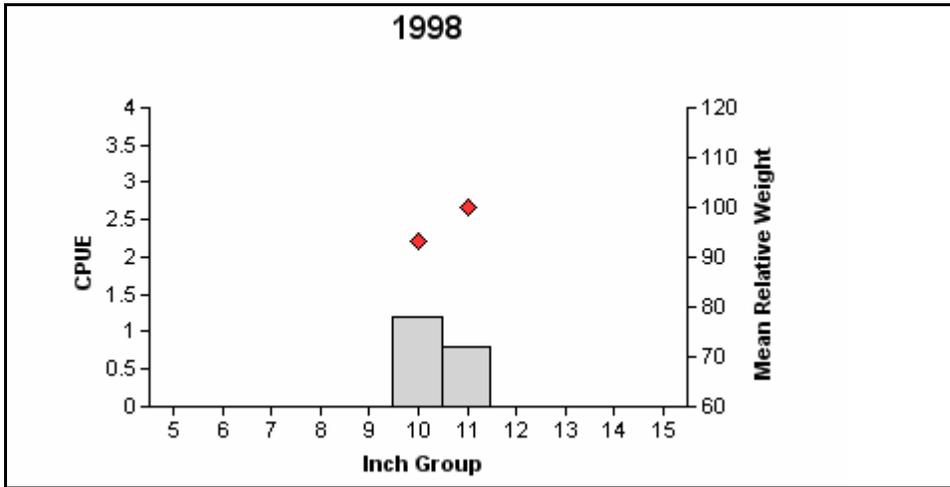
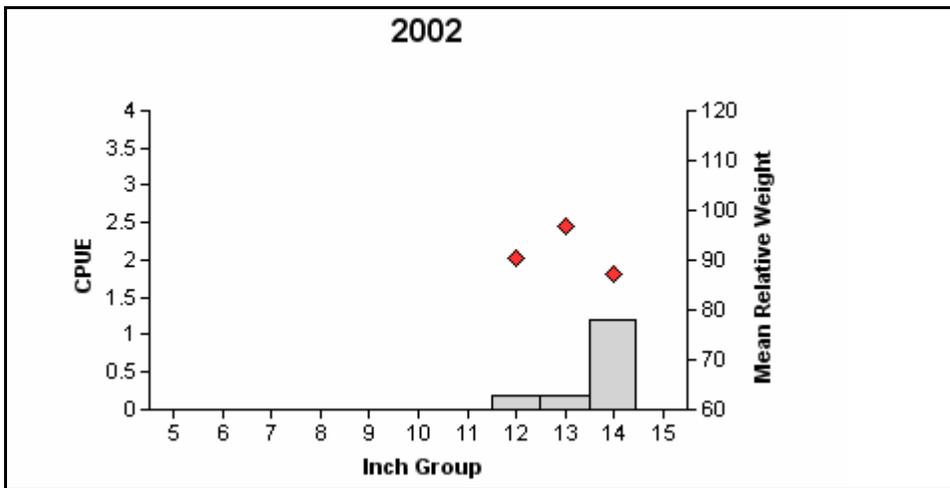


Figure 7. Length frequency of harvested channel catfish observed during creel surveys at Coletto Creek Reservoir, Texas, from June 2005 through May 2006, all anglers combined. N is the number of harvested channel catfish observed during creel surveys.

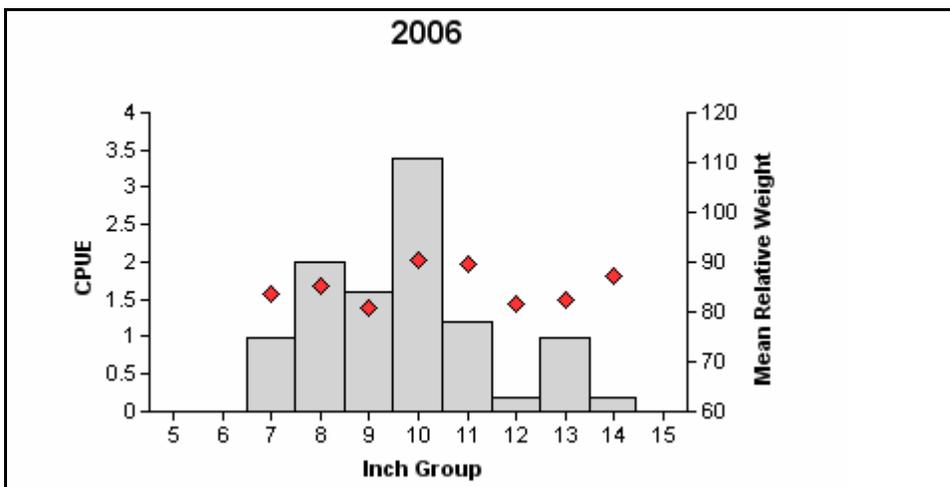
White Bass



Effort = 5.0
 Total CPUE = 2.0 (56; 10)
 PSD = 100 (0.0)
 RSD-10 = 100 (0.0)



Effort = 5.0
 Total CPUE = 1.6 (50; 8)
 PSD = 100 (0.0)
 RSD-10 = 100 (0.0)



Effort = 5.0
 Total CPUE = 10.6 (16; 53)
 PSD = 72 (0.18)
 RSD-10 = 57 (0.17)

Figure 8. Number of white bass caught per net night (CPUE, bars) and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for spring gill surveys, Coletto Creek Reservoir, Texas, 1998, 2002, and 2006.

White Bass

Table 9. Creel survey statistics for white bass at Coletto Creek Reservoir from June 2005 through May 2006, where total catch per hour is for anglers targeting white bass and total harvest is the estimated number of white bass harvested by all anglers. Relative standard errors (RSE) are in parentheses.

Creel Survey Statistic	Year
	2005/2006
Directed effort	0.0
Directed effort/acre	0.0
Total catch/hour	0.0
Total harvest	1,546.0 (94)
Harvest/acre	0.6 (94)
Percent legal released	<1

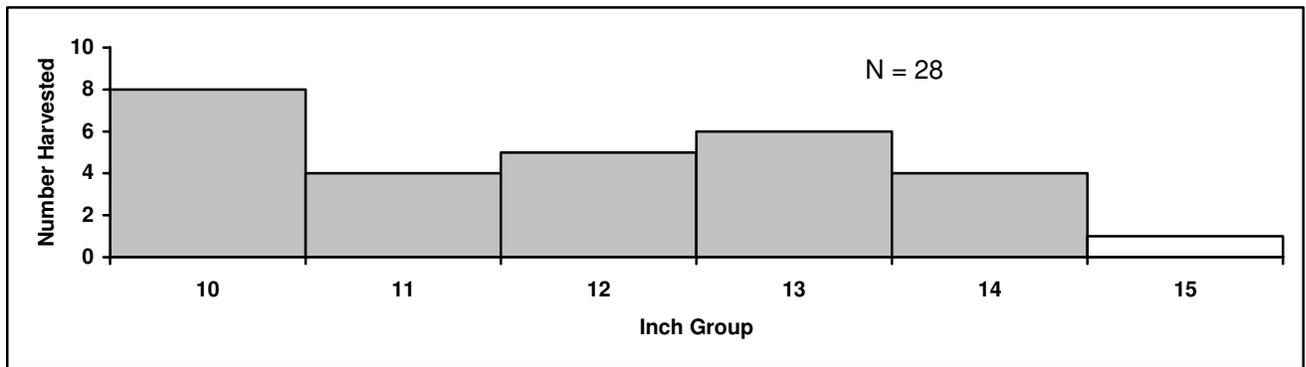
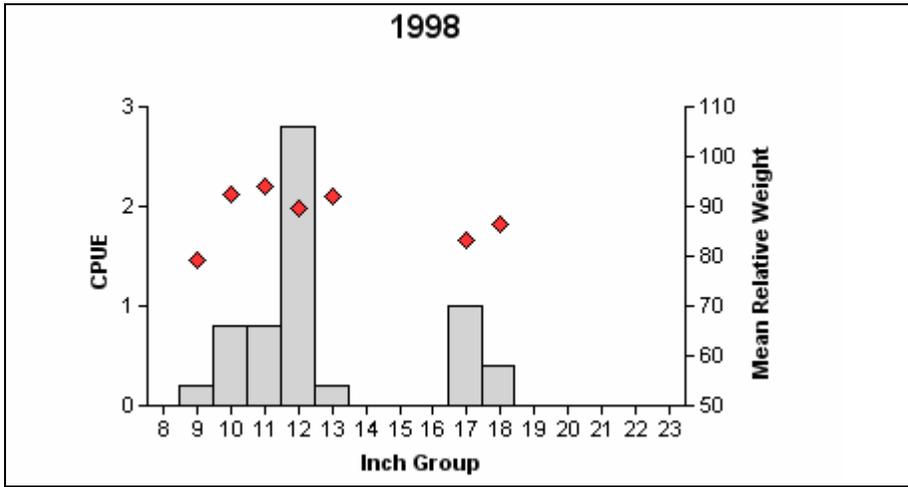
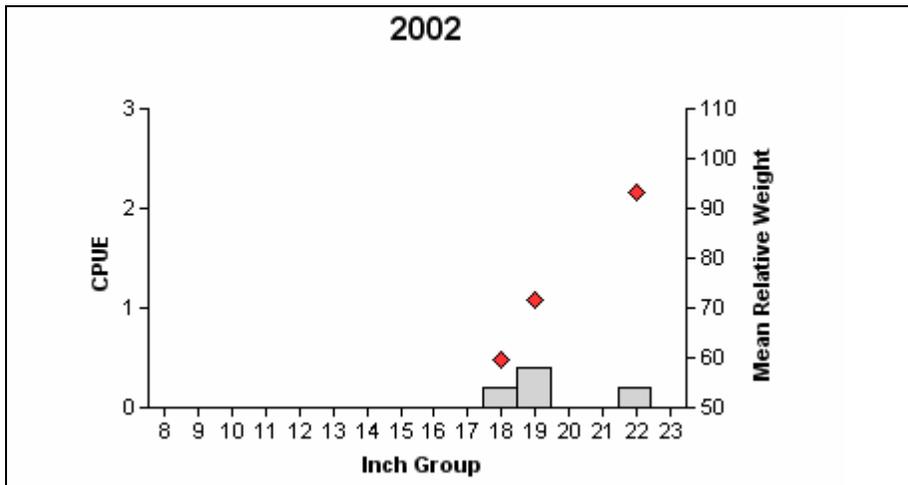


Figure 9. Length frequency of harvested white bass observed during creel surveys at Coletto Creek Reservoir, Texas, from June 2005 through May 2006, all anglers combined. N is the number of harvested white bass observed during creel surveys.

Palmetto Bass



Effort = 5.0
 Total CPUE = 6.2 (47; 31)
 PSD = 71 (0.13)
 RSD-18 = 6 (0.04)



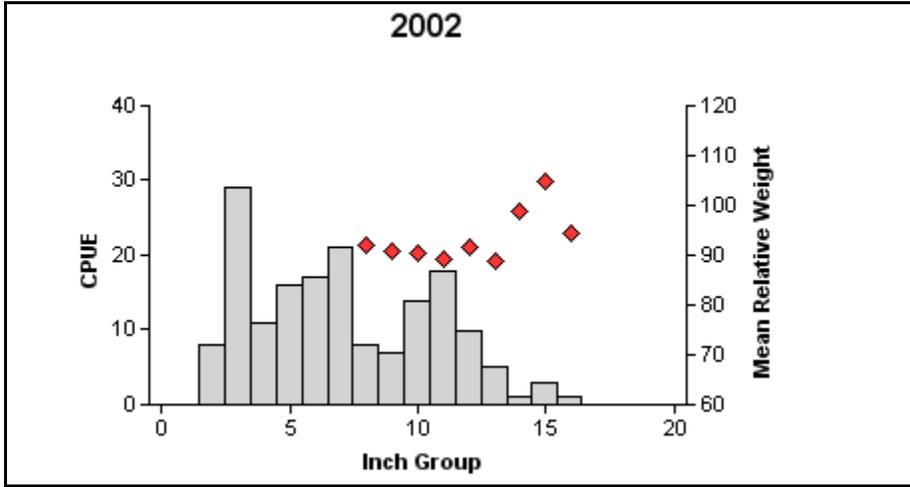
Effort = 5.0
 Total CPUE = 0.8 (25; 4)
 PSD = 100 (0.0)
 RSD-18 = 100 (0.0)

No Palmetto bass were collected in 2006.

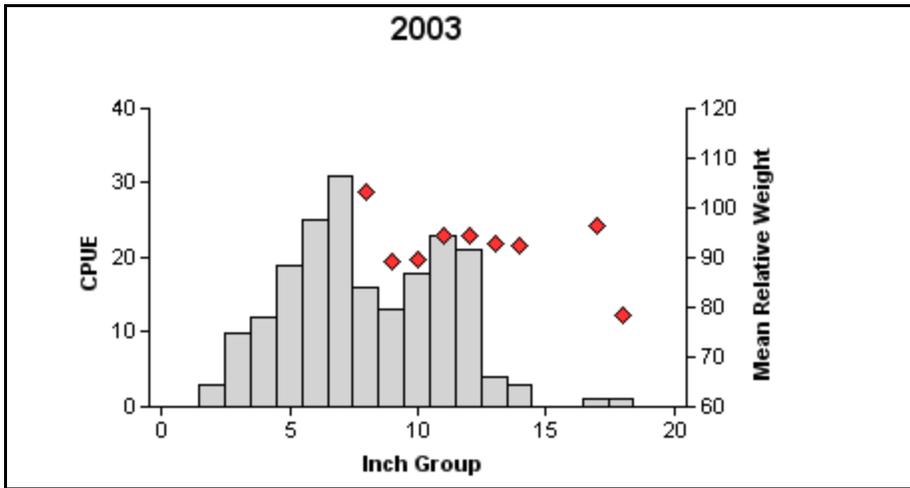
Effort = 5.0
 Total CPUE = 0.0

Figure 10. Number of palmetto bass caught per net night (CPUE, bars) and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for spring gill surveys, Coletto Creek Reservoir, Texas, 1998, 2002, and 2006.

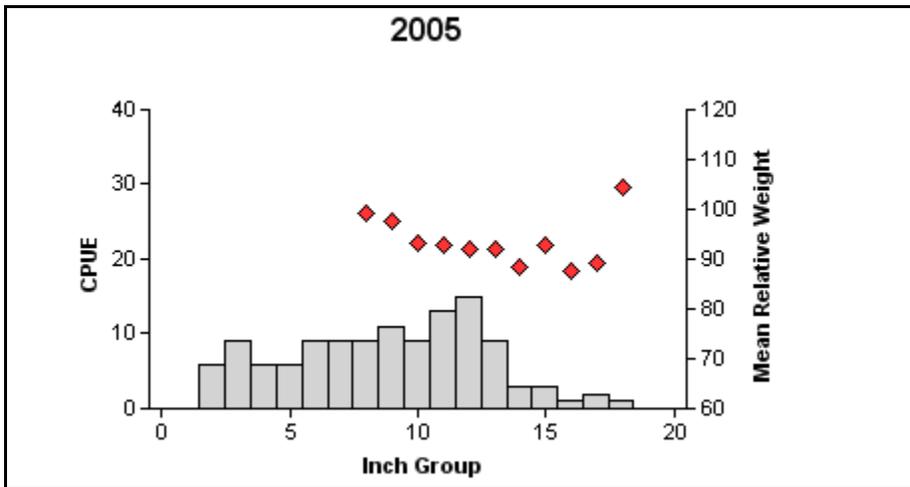
Largemouth Bass



Effort = 1.0
 Total CPUE = 169.0 (19; 169)
 Stock CPUE = 67.0 (17; 67)
 PSD = 30 (0.07)
 RSD-14 = 7 (0.03)



Effort = 1.0
 Total CPUE = 200.0 (22; 200)
 Stock CPUE = 100.0 (24; 100)
 PSD = 30 (0.06)
 RSD-14 = 5 (0.02)



Effort = 1.0
 Total CPUE = 121.0 (23; 121)
 Stock CPUE = 76.0 (22; 76)
 PSD = 45 (0.06)
 RSD-14 = 13 (0.05)

Figure 11. Number of largemouth bass caught per hour (CPUE, bars) and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for fall electrofishing surveys, Coletto Creek Reservoir, Texas, 2002, 2003, and 2005.

Largemouth Bass

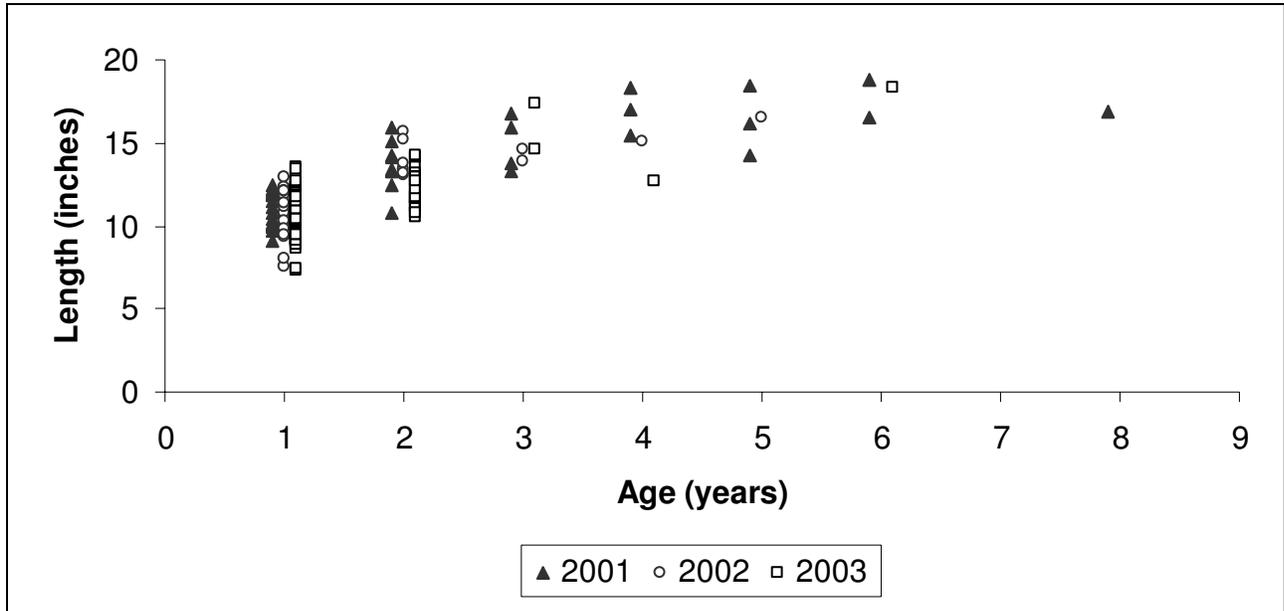


Figure 12. Length at age for largemouth bass (sexes combined) from electrofishing surveys at Coletto Creek Reservoir, Texas, 2001, 2002, and 2003.

Table 10. Results of genetic analysis of largemouth bass collected by fall electrofishing, Coletto Creek Reservoir, Texas 2001, 2003, and 2005. Electrophoresis analysis was used to determine genetic composition in 2001 and 2003 and micro-satellite DNA analysis was used in 2005. FLMB = Florida largemouth bass, NLMB = Northern largemouth bass, F1 = first generation intergrade between a FLMB and a NLMB, Fx = second or higher generation intergrade between a FLMB and a NLMB.

Year	Sample size	Genotype				% FLMB alleles	% Pure FLMB
		FLMB	F1	Fx	NLMB		
2001	30	22	2	6	0	91.7	Unknown
2003	30	18	1	11	0	89.2	Unknown
2005	31	13	0	17	0	80.7	43

Largemouth Bass

Table 11. Creel survey statistics for largemouth bass at Coletto Creek Reservoir from June 2005 through May 2006, where total catch per hour is for anglers targeting largemouth bass and total harvest is the estimated number of largemouth bass harvested by all anglers. Relative standard errors (RSE) are in parentheses.

Creel Survey Statistic	Year	
	2005/2006	
Directed effort	49,244.8	(13)
Directed effort/acre	19.7	(13)
Total catch/hour	1.5	(15)
Total harvest	5,702.0	(38)
Harvest/acre	2.3	(38)
Percent legal released	83	

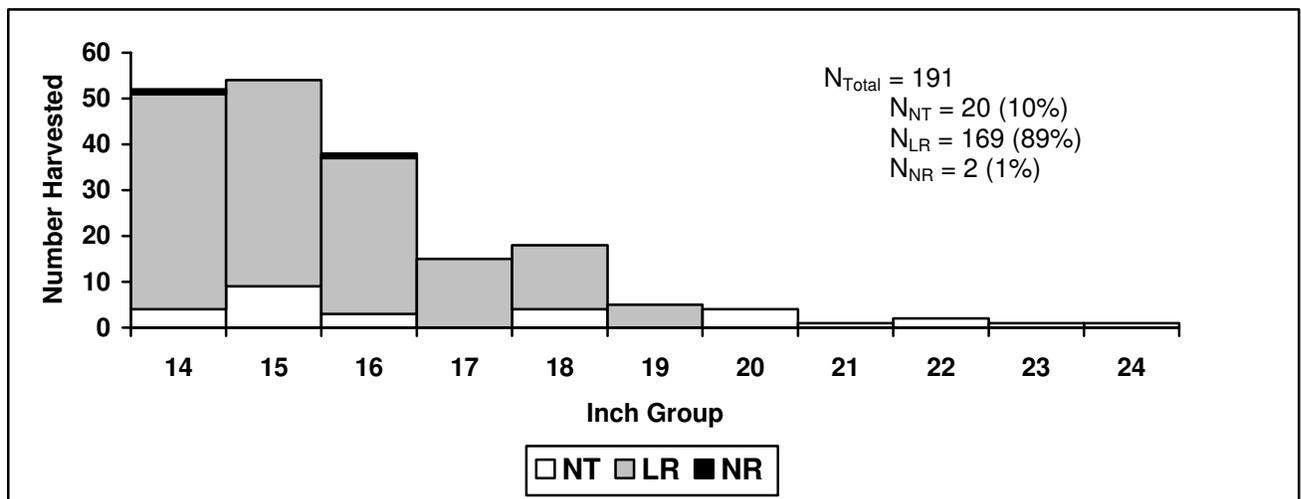
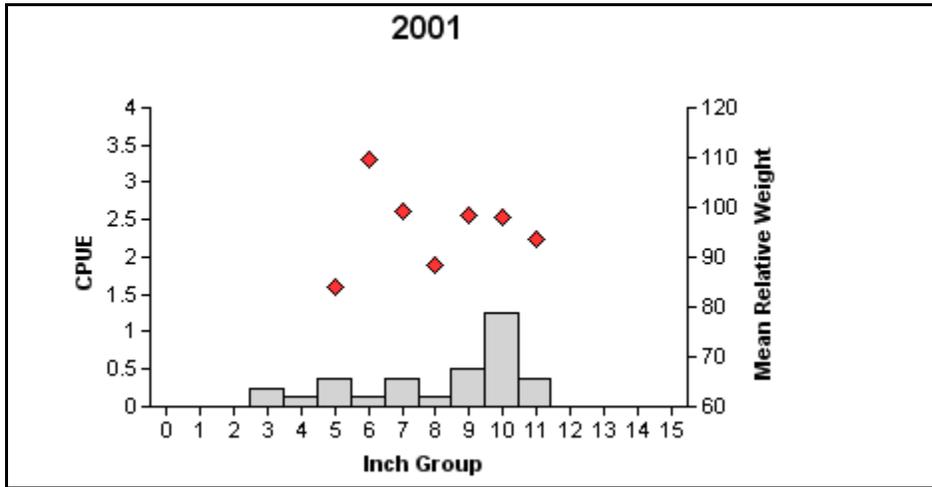
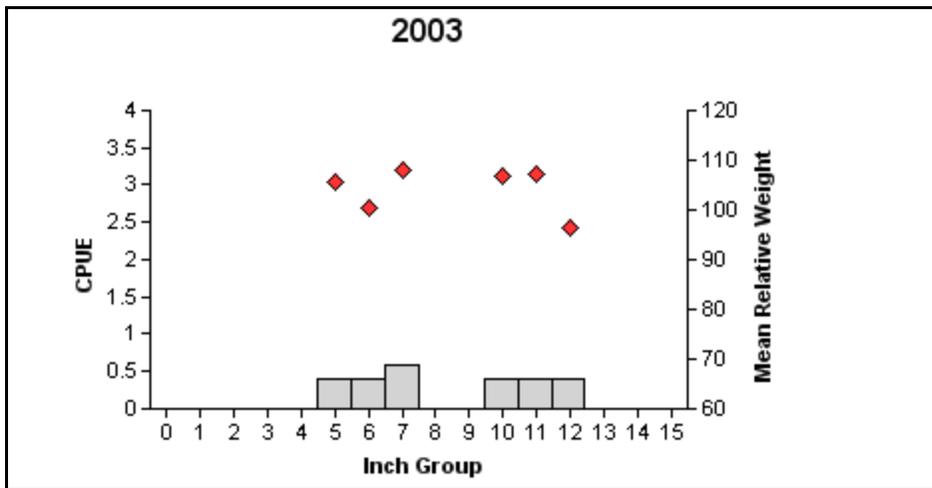


Figure 13. Length frequency of harvested largemouth bass observed during creel surveys at Coletto Creek Reservoir, Texas, from June 2005 through May 2006, all anglers combined. N_{Total} is the number of harvested largemouth bass measured during creel surveys and N_{NT} , N_{LR} , and N_{NR} are the proportions of the total harvested largemouth bass retained by non-tournament, tournament live release, and non-live release tournament anglers, respectively.

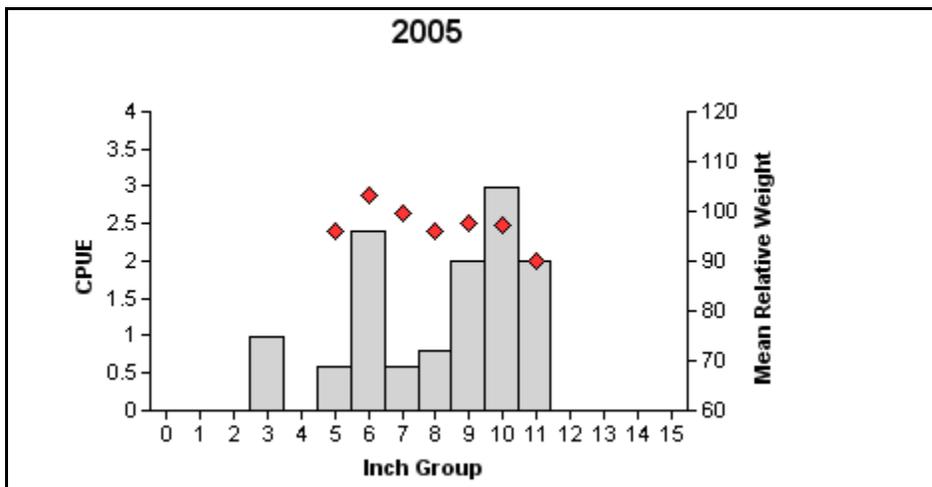
White Crappie



Effort = 8.0
 Total CPUE = 3.5 (32; 28)
 PSD = 72 (0.10)
 RSD-10 = 52 (0.15)



Effort = 5.0
 Total CPUE = 2.6 (41; 13)
 PSD = 46 (0.14)
 RSD-10 = 46 (0.14)



Effort = 5.0
 Total CPUE = 12.4 (52; 62)
 PSD = 68 (0.11)
 RSD-10 = 44 (0.09)

Figure 14. Number of white crappie caught per net night (CPUE, bars) and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for fall trap net surveys, Coletto Creek Reservoir, Texas, 2001, 2003, and 2005.

White Crappie

Table 12. Creel survey statistics for white crappie at Coletto Creek Reservoir from June 2005 through May 2006, where total catch per hour is for anglers targeting white crappie and total harvest is the estimated number of white crappie harvested by all anglers. Relative standard errors (RSE) are in parentheses.

Creel Survey Statistic	Year	
	2005/2006	
Directed effort	6,432.3 (23)	
Directed effort/acre	2.6 (23)	
Total catch/hour	3.7 (40)	
Total harvest	10,550.0 (36)	
Harvest/acre	4.2 (36)	
Percent legal released	<1	

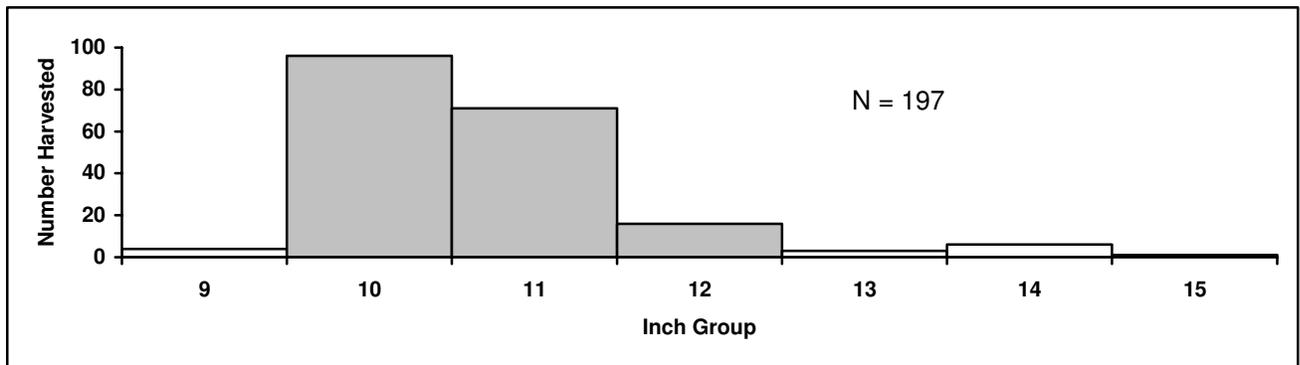


Figure 15. Length frequency of harvested white crappie observed during creel surveys at Coletto Creek Reservoir, Texas, from June 2005 through May 2006, all anglers combined. N is the number of harvested white crappie observed during creel surveys.

Table 13. Proposed sampling schedule for Coletto Creek Reservoir, Texas. Electrofishing and trap net surveys are conducted in the fall and the gill net survey in the spring. Standard surveys are denoted by S and additional surveys are denoted by A.

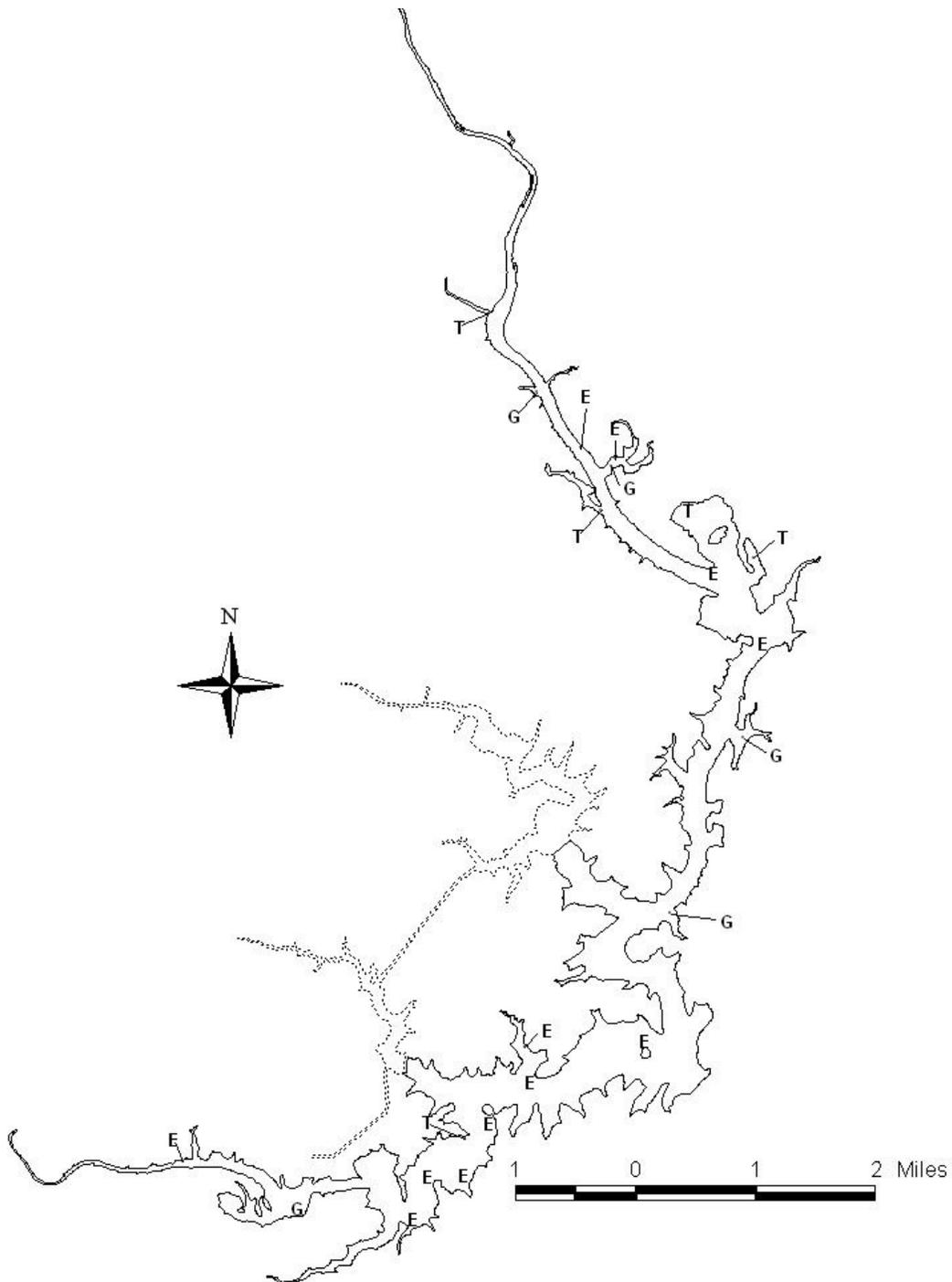
Survey Year	Electrofishing	Trap Netting	Gill Netting	Creel Survey	Report
Fall 2006-Spring 2007					
Fall 2007-Spring 2008	S	S			
Fall 2008-Spring 2009					
Fall 2009-Spring 2010	S	S	S	A	S

APPENDIX A

Number (N) and catch rate (CPUE) of all target species collected from all gear types from Coletto Creek Reservoir, Texas, 2005-2006.

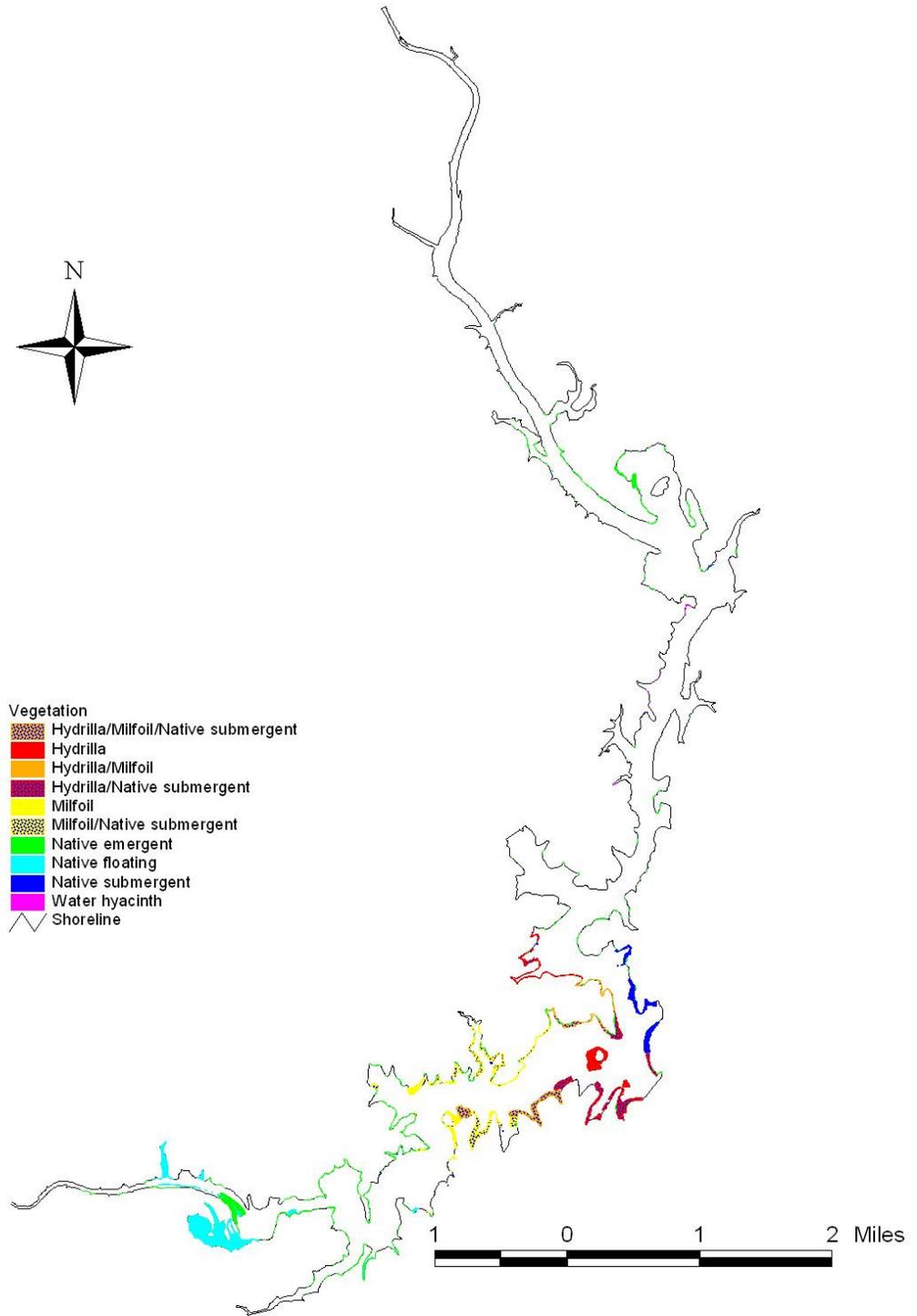
Species	Electrofishing		Trap netting		Gill netting	
	N	CPUE	N	CPUE	N	CPUE
Spotted gar	5	5.0			16	3.2
Longnose gar					4	0.8
Gizzard shad	97	97.0			128	25.6
Threadfin shad	11	11.0	1	0.2		
River carpsucker					4	0.8
Smallmouth buffalo					34	6.8
Blue catfish					6	1.2
Yellow bullhead					1	0.2
Channel catfish	32	32.0			44	8.8
White bass	9	9.0			53	10.6
Redbreast sunfish	18	18.0				
Green sunfish			1	0.2		
Warmouth	3	3.0				
Bluegill	302	302.0	102	20.4	1	0.2
Longear sunfish	11	11.0	1	0.2		
Redear sunfish	48	48.0	11	2.2	3	0.6
Largemouth bass	121	121.0	1	0.2	14	2.8
White crappie			62	10.4	34	6.8
Logperch	6	6.0				
Rio Grande cichlid	1	1.0				
Blue tilapia	2	2.0			7	1.4

APPENDIX B



Location of sampling sites, Coletto Creek Reservoir, Texas, 2005-2006. Trap net, gill net, and electrofishing stations are indicated by T, G and E, respectively. Dotted lake outline indicates area inaccessible to anglers.

APPENDIX C



Aquatic vegetation map for Coletto Creek Reservoir, Texas, 2005.