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

Martin Creek Reservoir

Prepared by:

Dan Ashe
and
Todd Driscoll

Inland Fisheries Division
District 3-D, Jasper, Texas

Robert L. Cook
Executive Director

Phil Durocher
Director, Inland Fisheries

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SURVEY AND MANAGEMENT SUMMARY

Fish populations in Martin Creek Reservoir were surveyed in 2005 using electrofishing and in 2006 using gill nets. A creel survey scheduled for December 2005 – February 2006 was cancelled due to low water levels and lack of boat access. A structural habitat/aquatic vegetation survey was conducted in July 2005. This report summarizes the results of the surveys and contains a management plan for the reservoir based on those findings.

- **Reservoir description:** Martin Creek Reservoir is located on Martin Creek, a tributary of the Sabine River in Rusk County. TXU Energy impounded the reservoir in 1974 to provide cooling water for their coal-powered generators. At conservation pool, Martin Creek Reservoir is 4,981 acres in size, has a shoreline length of 62 miles, and a mean depth of 16 feet. Water level fluctuations average 2-3 feet annually.

- **Management history:** Past creel surveys indicated that the catfish fishery was the most popular at Martin Creek Reservoir, followed by largemouth bass and crappie fisheries. Both the catfish and crappie fishery were highly consumptive. The management plan from the 2001 survey report included stocking blue catfish at 50 fish/acre for two consecutive years in an attempt to establish a self-sustaining population to provide catfish anglers an additional sport fish with greater growth potential. Blue catfish fingerlings were stocked into Martin Creek Reservoir in 2003, but limited hatchery production has prevented a second stocking. The reservoir is scheduled for stocking in 2006. Triploid grass carp were stocked from 1996 through 1999 at a rate of 0.6/acre each year to reduce hydrilla that covered about a third of the reservoir. There is little to no vegetation in the reservoir at present. The triploid grass carp stockings in conjunction with extreme low water conditions in 1996 and 2005 have decresed the aquatic vegetation coverage.

- **Fish community**
  - **Prey species:** Primary prey species are gizzard shad, threadfin shad, and bluegill. Electrofishing rates and body condition of largemouth bass suggests that these species provided ample forage for predator species.

  - **Catfishes:** Channel catfish appear to be increasing in abundance based on gill net data. The catfish fishery is the most popular fishery for the reservoir. Blue catfish fingerlings were stocked in 2003 and are scheduled to be stocked again in 2006. Gill net data indicates that the stocked blue catfish have had good survival and excellent growth.

  - **Largemouth bass:** Largemouth bass provide the second most popular fishery for the reservoir. Largemouth bass are relatively abundant, with the size structure observed in the fall of 2005 indicating a strong year class.

  - **Crappies:** White crappie are present in the reservoir, but sampling indicated black crappie was the predominant species. The department has not conducted trap net surveys for crappie since 2001, due to the inefficiency of the gear in this reservoir. No crappie were collected during the 2006 gill net survey. Past growth rate analysis have shown that black crappie reach legal size during their second year, greatly exceeding ecological region averages. Angler catch rates for crappie were 0.75/h.

- **Management Strategies:** Due to reduced vegetation and habitat, largemouth abundance has experienced variability over recent years. Anglers on this reservoir are consumptive fishermen harvesting most of the legal sized fish they catch. We recommend stocking white bass to provide an additional fishing opportunity that

would be ideal for a consumptive public. The department has stocked blue catfish to provide an additional trophy sport fish for the reservoir. The reservoir is scheduled to be stocked with blue catfish fingerlings again in 2006. The reservoir has the potential to produce an increased number of memorable and trophy largemouth bass. The department plans to gather angler opinion data on the subject of amending the largemouth bass minimum length limits that may increase abundance of larger largemouth bass.

INTRODUCTION

This document is a summary of fisheries data collected from Martin Creek Reservoir in 2005-2006. 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. Historical data are presented with the 2005-2006 data for comparison.

Reservoir Description

Martin Creek Reservoir was impounded in 1974 on Martin Creek. It is located in Rusk County approximately 10 miles northeast of Henderson and is operated and controlled by TXU Energy to provide cooling water for their coal-powered generators. At conservation pool, Martin Creek Reservoir is 4,981 surface acres in size, has a shoreline length of 62 miles, and a mean depth of 16 feet. Water level fluctuations average 2-3 feet annually (Figure 1). A public boat ramp and one handicap-accessible fishing pier are present at Martin Creek State Park. The primary habitat type is standing timber. Most of the land around the reservoir is used for agriculture and oil and gas production. Other descriptive characteristics for Martin Creek Reservoir are in Table 1.

Management History

Previous management strategies and actions: Management strategies and actions from the previous survey report (Driscoll and Parks 2001) included:

1. Contact the Texas Department of Health and request that the fish consumption advisory be posted at public places around the reservoir.
   Action: The Texas Department of Health rescinded the fish consumption advisory on October 14, 2003.
2. Stock blue catfish fingerlings at a rate of 50 fish/acre in 2003 and 2004.
   Action: Blue catfish fingerlings were stocked at a rate of 50 fish/acre in 2003. Due to limited hatchery production, blue catfish fingerlings were not stocked in 2004. Blue catfish fingerlings were requested in 2006 at a rate of 50 fish/acre.
3. Conduct surveys every four years to monitor the status of vegetation in the reservoir.
   Action: A habitat and vegetation survey was conducted in July 2005, with no vegetation documented and no change in habitat observed from the 2001 survey. Four brushpiles consisting of 20 trees/brushpile were placed along the shoreline of the reservoir in 2006.
4. Contact local newspapers and publicize results of monitoring surveys and management actions in a series of news releases. Provide state park personnel copies of the management plan and all news releases for distribution.
   Action: State park personnel were given a copy of the final 2001 management survey report for distribution. A news release addressing the management plan was released in April 2003.

Harvest regulation history: Sport fishes in Martin Creek Reservoir are currently managed with statewide regulations (Table 2).

Stocking history: Martin Creek Reservoir was stocked in 2003 with 273,789 blue catfish

fingerlings and again in 2004 with 200 blue catfish adults. The reservoir had not been stocked with blue catfish since 1985. Florida largemouth bass have not been stocked since 1990. The last palmetto bass stocking occurred in 1984. Approximately 3,000 triploid grass carp were stocked annually from 1996 through 1999. The complete stocking history is in Table 3.

Vegetation/habitat history: Martin Creek Reservoir is nearly devoid of aquatic vegetation (Table 4). The controlling authority stocked triploid grass carp in 1993, and 1996 - 1999 to reduce hydrilla that had become problematic. The reservoir had nearly 35% hydrilla coverage prior to the triploid grass carp stockings. Standing timber is present in half of the reservoir comprising 2,426 acres. There is no residential shoreline development. The majority of the land surrounding the reservoir is used for agriculture and oil and gas production.

METHODS

Fishes were collected by electrofishing (1.5 hours at 18 5-min stations) and gill netting (15 net nights at 15 stations). Catch per unit effort (CPUE) for electrofishing was recorded as the number of fish caught per hour (fish/h) of actual electrofishing and, for gill nets, as the number of fish per net night (fish/nn). All survey sites were randomly selected and all surveys were conducted according to the Fishery Assessment Procedures (TPWD, Inland Fisheries Division, unpublished manual revised 2005).

Sampling statistics (CPUE for various length categories), structural indices [Proportional Stock Density (PSD), Relative Stock Density (RSD)], and condition indices [relative weight (Wr)] were calculated for target fishes according to Anderson and Neumann (1996). Index of vulnerability (IOV) was calculated for gizzard shad (DiCenzo et al. 1996). Relative standard error (RSE = 100 X SE of the estimate/estimate) was calculated for all CPUE statistics and for creel statistics and SE was calculated for structural indices and IOV. Mean age of minimum legal length channel catfish (11.5 – 12.5 inches) and largemouth bass 13.5 – 14.5 inches) was determined by examining 13 otoliths from each species. Source for water level data was the United States Geological Survey (USGS).

RESULTS AND DISCUSSION

Habitat: Littoral zone habitat consisted primarily of overhanging brush, concrete, and standing timber (Table 4).

Creel: A creel survey was scheduled for December 2005 - February 2006, but low water levels prevented boat access and the creel survey was canceled. The last completed quarterly creel survey was conducted from February - April 2002 (Driscoll and Parks 2002). Directed fishing effort by anglers was highest for catfish (30%), followed by anglers fishing for largemouth bass (24%), and crappie (22%) (Table 5). Total fishing effort for all species at Martin Creek Reservoir was 27,261 h from February - April 2002, and anglers spent an estimated $95,500 on direct expenditures during this time period.

Prey species: Electrofishing catch rates of gizzard shad and bluegill were 66.0/h and 310.0/h, respectively in 2005 (Figures 2 and 3). Index of vulnerability (IOV) for gizzard shad was adequate, indicating that 76% of gizzard shad were available to predators; this was higher than IOV estimates in previous years (Figure 2). Total CPUE of gizzard shad was considerably greater in 2005 compared to the 2000 and 2001 surveys (Figure 2). Total CPUE of bluegill in 2005 was similar to total CPUE from surveys in 2000 and 2001, and size structure continued to be dominated by small individuals (Figure 3).

Channel catfish: The gill net catch rate of channel catfish was 29.8/nn in 2006 versus an historical average of 5.1 fish/nn (Figure 4). Prior to 1998, the hydrilla coverage for the reservoir typically exceeded 30% and may have affected past gill net efficiency. A similar relationship between hydrilla coverage and channel catfish catch rates have been observed at Nacogdoches

Reservoir (Driscoll and Parks 2001). The channel catfish population continued to have an increasing relative abundance with an apparent increase in the number of stock sized fish in 2006 compared to the 2002 and 1997 surveys (Figure 4). Relative weights and observed PSD for channel catfish in 2006 were low with a weighted Wr average of 83 and a PSD value of 33. This compares to an historical average PSD value of 46. The PSD value decline can attributed to increased recruitment and subsequently more small fish, not a decrease in quality sized fish. Relative weights may be low due to increased intraspecific competition with an increase in recruitment and interspecific competition with newly introduced blue catfish. In 2002, directed fishing effort, catch per hour, and total harvest for channel catfish showed a significant catfish fishery (Table 6). The channel catfish fishery is harvest-oriented, with no legal-sized fish observed as released. Harvested fish ranged in length from 12 to 21 inches (Figure 6).

Blue Catfish: The gill net catch rate of blue catfish was 3.9/nn in 2006. Catch rates and size structure indices suggest that blue catfish have experienced adequate survival and growth from the 2003 stocking (Figure 5). There were no observed catch or harvest of blue catfish from the creel survey conducted from February - April 2002, prior to blue catfish being stocked into the reservoir in 2003.

Largemouth bass: The electrofishing catch rate of largemouth bass in 2005 (109.3/h) was similar to the historical reservoir average (111.0/h). Size structure appears to have improved since the last survey as PSD increased from 19 to 35 from 2001 to 2005 (Figure 7). Length frequencies from 2005 suggest a relatively strong 2005 year class as well as recruitment of larger fish from what was observed in 2001. Growth of largemouth bass in Martin Creek Reservoir was good; average age at 14 inches (13.5 to 14.5 inches) was 1.2 years (N = 13; range = 1 – 2 years). Body condition in 2005 was adequate (Wr > 90) for nearly all size classes of fish and was similar to Wr in previous surveys (Figure 7). Directed fishing effort, catch per hour, and total harvest for largemouth bass was 6,435 h, 0.42 fish/h, and 1,039 fish, respectively, from February through April 2002 (Table 7). Few legal largemouth bass were released (< 5%), (Table 7) with harvested fish ranging in length from 14 to 21 inches (Figure 8). Florida largemouth bass influence has remained relatively constant, as Florida alleles have ranged from 68% to 65% while the pure Florida genotype has decreased from 27% to 2% from 2001 to 2005 respectively (Table 8).

Crappies: White and black crappie are present in the reservoir. No trap net surveys have been conducted since 2001, due to gear inefficiency. The February - April 2002 creel survey indicated directed effort for crappies was 5,933 hours, with an estimated harvest of 4,101 black and 943 white crappie (Table 9). Size of harvested crappies observed during the 2002 creel survey was excellent and ranged from 10 - 15 inches in total length (Figures 9 and 10).

Fisheries management plan for Martin Creek Reservoir, Texas

Prepared – July 2006.

ISSUE 1: Littoral habitat has declined significantly with a resultant variable largemouth bass population in recent years. The 2002 creel survey indicated the fishery is highly consumptive, with nearly all legal sized fish harvested. The forage base is abundant with population size structures that provide prey that can be utilized by all sized predators.

MANAGEMENT STRATEGY

1. In conjunction with state park staff, gather opinion data from Martin Creek Reservoir anglers from August – December 2006 to determine if they favor establishing a white bass fishery. This fishery will be intended to expand opportunity and augment harvest.
2. Stock a minimum of 500 adult white bass in 2007 and 2008 to establish the population .
3. In 2009 – 2010, monitor stocking with a creel survey and a gill net survey to determine if adequate angler effort, growth, and survival are occurring.

ISSUE 2: There was a significant catfish fishery at Martin Creek Reservoir, essentially comprised of only channel catfish. To provide larger catfish available for harvest, blue catfish were stocked at a rate of 50/acre in 2003 and requested again in 2006. Gill net data from 2006 indicates that blue catfish growth and survival were excellent. Channel catfish numbers have increased considerably since 1997 and Wr values have decreased.

MANAGEMENT STRATEGY

1. Discontinue blue catfish stockings after the 2006 stocking and evaluate population size structure, angler effort, and harvest in 2009 – 2010.
2. Examine channel catfish growth in 2010.

ISSUE 3: There is virtually no aquatic vegetation present in the reservoir due to the combination of 1996-1999 triploid grass carp stockings and low water levels in 1996 and 2005. Due to the continued presence of triploid grass carp, this situation will persist for some time. Lack of vegetation has negatively impacted reproduction and recruitment of largemouth bass based on recently observed variability of elctrofishing CPUE.

MANAGEMENT STRATEGIES

1. Conduct surveys every four years to monitor the status of vegetation in the reservoir. In the future, if hydrilla becomes reestablished, consult with TXU Energy and the state park to develop a vegetation management plan that balances industrial and recreational uses.
2. Continue to advise state park personnel regarding the placement of brushpiles in the reservoir.

ISSUE 4: The reservoir has the potential to produce an increased abundance of memorable and trophy largemouth bass. This is evident through the age at length data and the population size structure.

MANAGEMENT STRATEGIES

1. In conjunction with state park staff, gather opinion data from Martin Creek Reservoir anglers from August 2006 – March 2007 to determine if they favor amending the largemouth bass fishery regulations to increase the minimum length limit from the current statewide 14-in limit to either a 16-in or 18-in minimum length limit.
2. Based on the results of the angler opinion survey either maintain the current 14-in minimum length limit or propose increasing the minimum length limit to the desired limit as expressed by the anglers.

ISSUE 5: Historically, public outreach efforts directed at Martin Creek Reservoir constituents have been minimal.

MANAGEMENT STRATEGIES

1. Contact local newspapers and publicize results of monitoring surveys and management recommendations via news releases. Provide state park personnel copies of the management plan and all news releases for distribution.

SAMPLING SCHEDULE JUSTIFICATION:

The proposed sampling schedule includes mandatory monitoring in 2009/2010 (Table 10).

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Driscoll, T., and J. Parks. 2002. Statewide freshwater fisheries monitoring and management program survey report for Martin Creek Reservoir, 2001. Texas Parks and Wildlife Department, Federal Aid Report F-30-R-27, Austin.

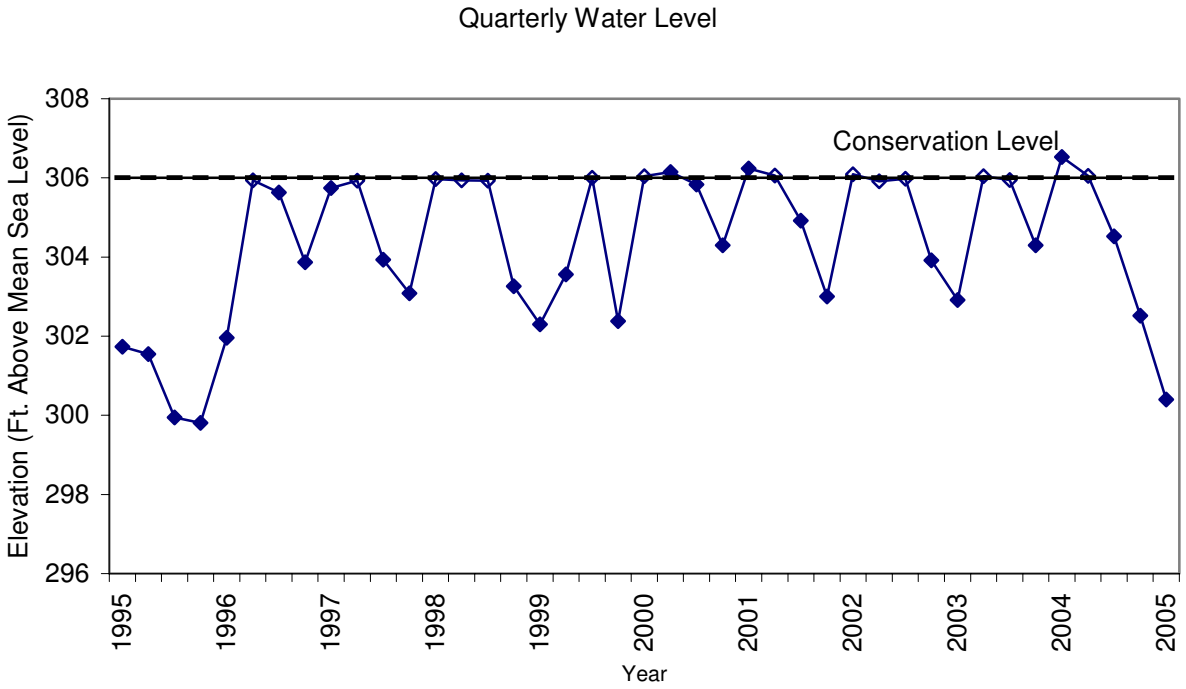


Figure 1. Quarterly water level elevations in feet above mean sea level (MSL) recorded for Martin Creek Reservoir, Texas.

Table 1. Characteristics of Martin Creek Reservoir, Texas.

Characteristic	Description
Year Constructed	1974
Controlling authority	TXU Energy
Counties	Rusk
Reservoir type	Secondary stream
Shoreline Development Index (SDI)	4.7
Conductivity	120 umhos/cm

Table 2. Harvest regulations for Martin 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: largemouth	5	14 – No Limit
Crappie: white and black crappie, their hybrids and subspecies	25 (in any combination)	10 - No Limit

Table 3. Stocking history at Martin Creek Reservoir, Texas. FRY= < 1 inch; FGL = 1-3 inches; ADFGL = 6-8 inches and ADL=Adults.

Species	Year	Number	Size
Blue catfish	1974	81,520	FGL
	1982	600	FGL
	1984	100,758	FGL
	1985	50,062	FGL
	2003	273,789	FGL
	2004	200	ADL
	Total	506,929	
Channel catfish	1973	15	FGL
	1974	100,888	FGL
	Total	100,903	
Florida largemouth bass	1974	365,000	FGL
	1984	559,970	FGL
	1990	251,357	FRY
	Total	1,176,327	
Redbreast sunfish	1983	346,853	FGL
	1984	404,236	FGL
	Total	751,089	
Striped x white bass	1974	49,880	FGL
	1975	15,000	FGL
	1983	49,800	FGL
	1984	99,875	FGL
	Total	214,555	FGL
Triploid grass carp	1993	800	ADFGL
	1996	2,899	ADFGL
	1997	2,857	ADFGL
	1998	3,000	ADFGL
	1999	3,000	ADFGL
	Total	12,556	
Walleye	1974	1,250,676	FRY
	Total	1,250,676	
White crappie	1983	30,913	FGL
	1984	134,227	FGL
	1986	91,696	FGL
	Total	256,836	

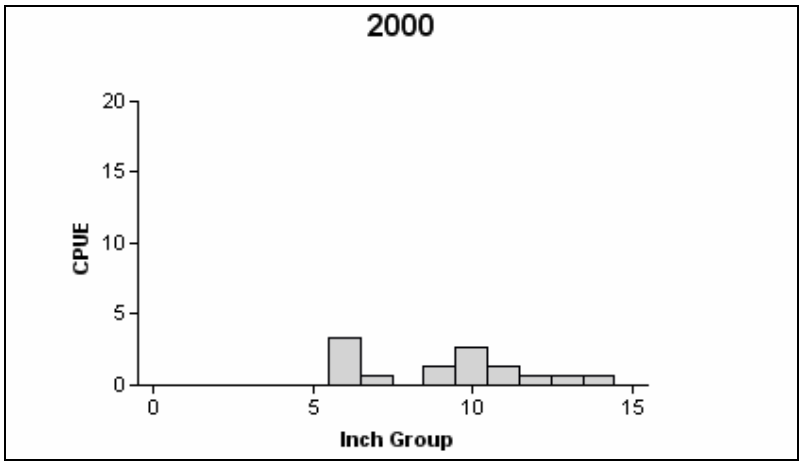
Table 4. Survey of littoral zone and physical habitat types, Martin Creek Reservoir, Texas, 2005. A linear shoreline distance (miles) was recorded for each habitat type found. Surface area (acres) and percent of reservoir surface area was determined for each type of aquatic vegetation found.

Shoreline habitat type	Shoreline Distance		Surface Area	
	Miles	Percent of total	Acres	Percent of reservoir surface area
Rocky shore	1.2	2.0		
Standing timber	0.1	< 1.0	2,426	
Indescript	24.5	45.0		
Native submerged vegetation	0	0	0	0
Native emerged vegetation	< 1.0	< 1.0	10	< 1.0

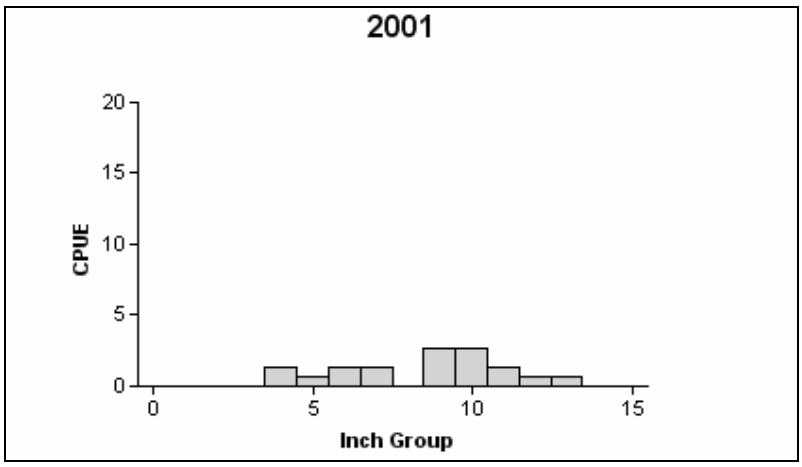
Table 5. Percent directed angler effort by species or groups for Martin Creek Reservoir, Texas, February-April 2002.

Species/Groups	Percent Directed Effort
Catfishes	29.6
Largemouth bass	23.6
Crappies	21.8
Anything	22.3
Panfishes	2.0

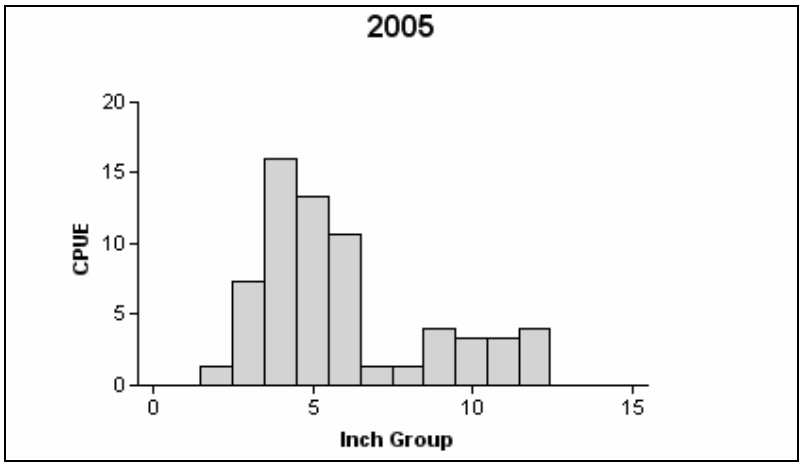
Gizzard Shad



Effort = 1.5
Total CPUE = 11.3 (21; 17)
Stock CPUE = 8.0 (18; 12)
PSD = 42.0 (0.13)
IOV = 35.29 (0.11)



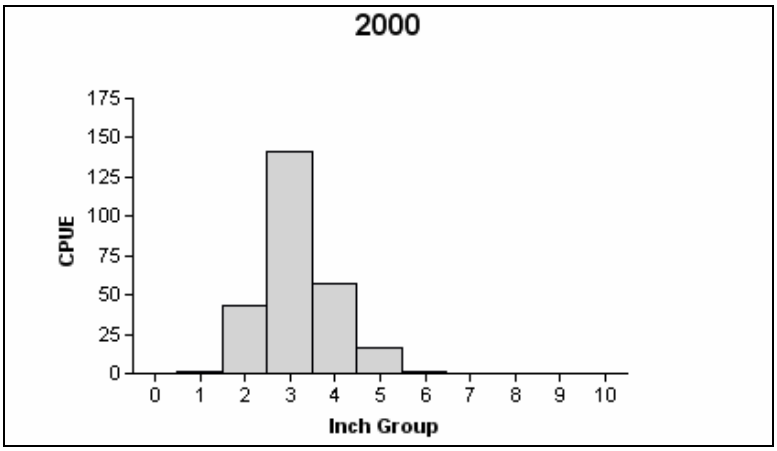
Effort = 1.5
Total CPUE = 12.7 (16; 19)
Stock CPUE = 9.3 (15; 14)
PSD = 29.0 (0.12)
IOV = 36.84 (0.14)



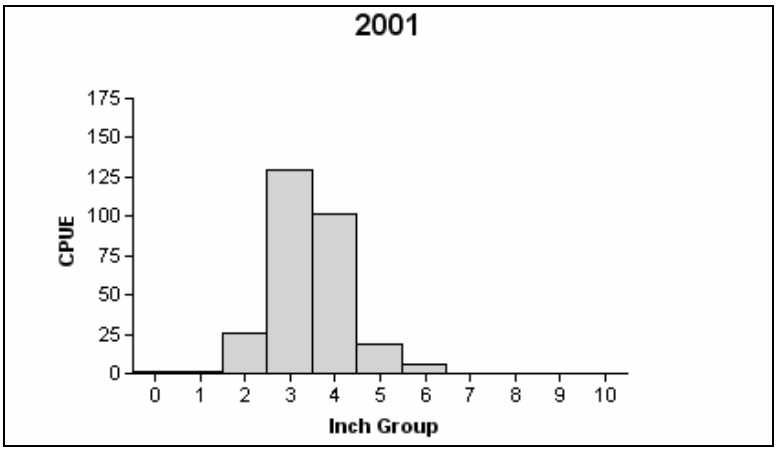
Effort = 1.5
Total CPUE = 66.0 (21; 99)
Stock CPUE = 17.3 (36; 26)
PSD = 42.0 (0.09)
IOV = 75.76 (0.08)

Figure 2. Number of gizzard shad caught per hour (CPUE) and population indices (RSE and N for CPUE and SE for IOV are in parentheses) for fall electrofishing surveys, Martin Creek Reservoir, Texas, 2000, 2001, and 2005.

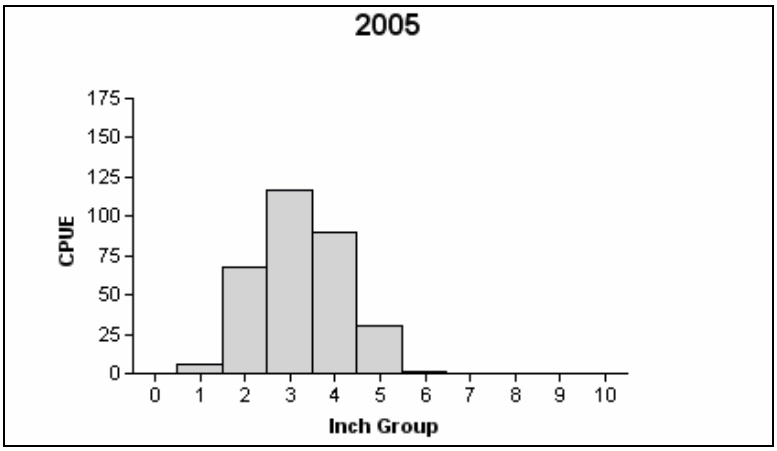
Bluegill



Effort = 1.5
Total CPUE = 258.7 (30; 388)
Stock CPUE = 215.3 (28; 323)
PSD = 0.0 (0)



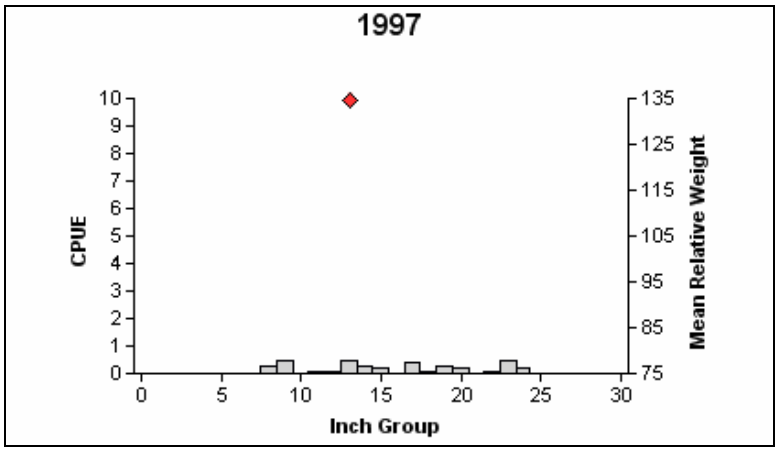
Effort = 1.5
Total CPUE = 284.7 (19; 427)
Stock CPUE = 256.0 (18; 384)
PSD = 2.0 (0.02)



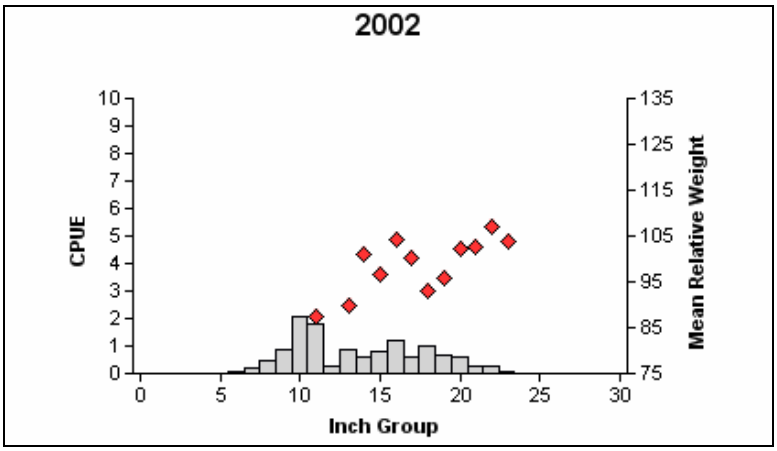
Effort = 1.5
Total CPUE = 310.0 (24; 465)
Stock CPUE = 236.7 (24; 355)
PSD = 0.0 (0)

Figure 3. Number of bluegill caught per hour (CPUE) and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for fall electrofishing surveys, Martin Creek Reservoir, Texas, 2000, 2001, and 2005.

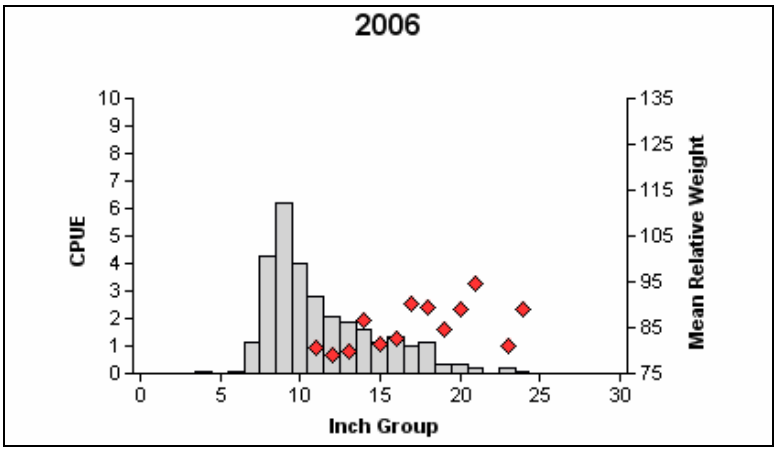
Channel Catfish



Effort = 10.0
Total CPUE = 3.8 (21; 38)
Stock CPUE = 3.0 (24; 30)
PSD = 60.0 (0.12)



Effort = 10.0
Total CPUE = 13.0 (24; 130)
Stock CPUE = 9.2 (29; 92)
PSD = 52.0 (0.08)



Effort = 15.0
Total CPUE = 29.8 (17; 447)
Stock CPUE = 14.1 (29; 211)
PSD = 33.0 (0.04)

Figure 4. Number of channel catfish caught per hour (CPUE, bars), mean relative weight (diamonds), and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for spring gill net surveys, Martin Creek Reservoir, Texas, 1997, 2002, and 2006.

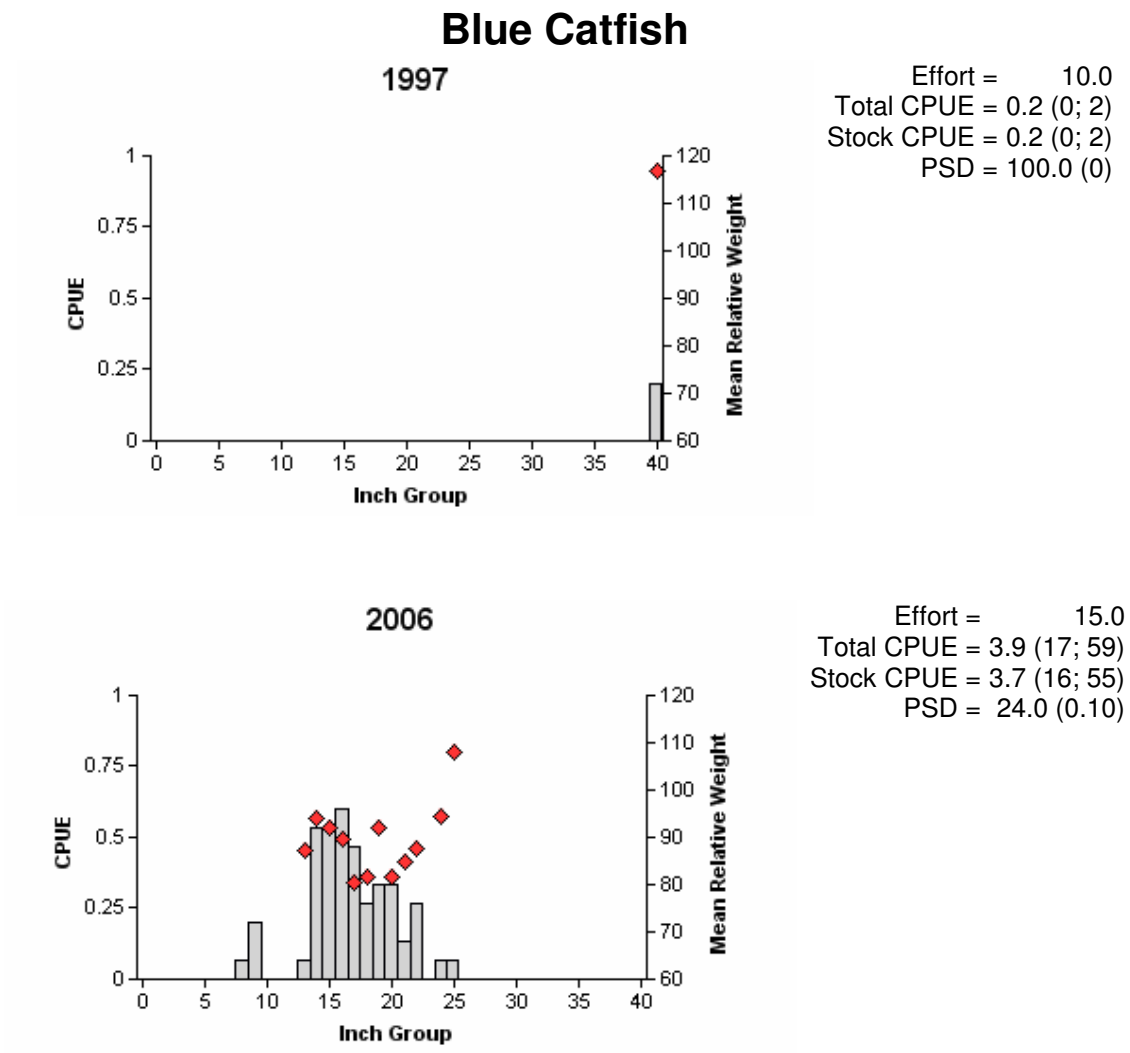


Figure 5. Number of blue catfish caught per hour (CPUE, bars), mean relative weight (diamonds), and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for spring gill net surveys, Martin Creek Reservoir, Texas, 1997 and 2006. No blue catfish were collected in 2002.

Catfishes

Table 6. Creel survey statistics for catfishes for Martin Creek Reservoir from February - April 2002, where total catch per hour is for anglers targeting catfishes and total harvest is the estimated number of catfishes harvested by all anglers. Relative standard errors (RSE) are in parentheses.

Creel Survey Statistic	February-April 2002
Directed effort (h)	8,077.0 (30)
Directed effort/acre	1.6 (30)
Total catch per hour	1.2 (29)
Total harvest	9,672.5 (54)
Harvest/acre	1.9 (54)
Percent legal released	0.00

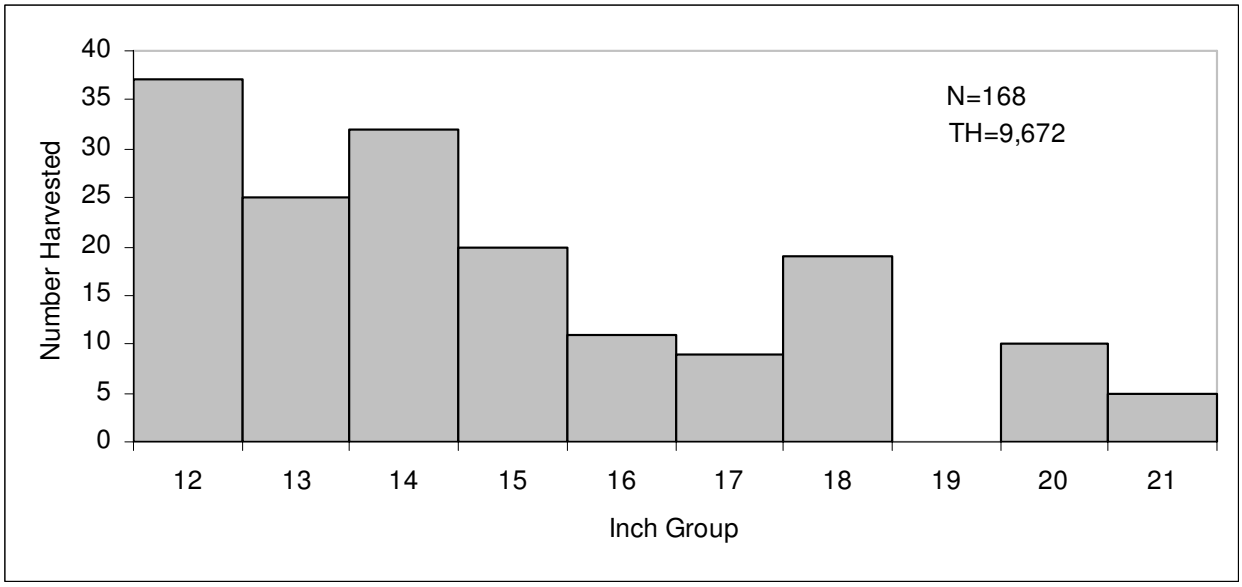
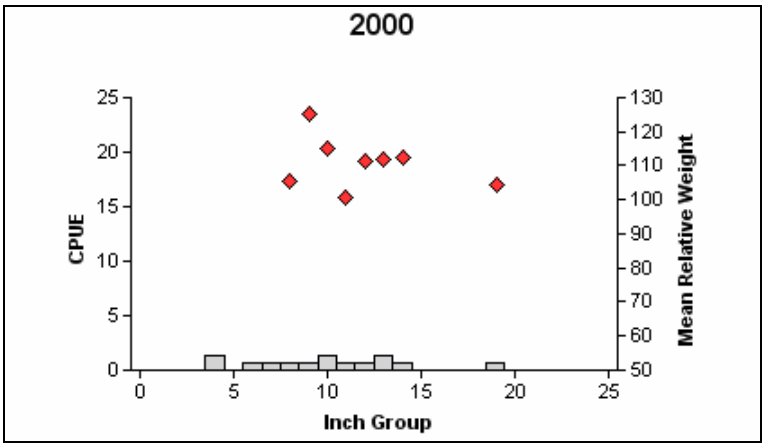


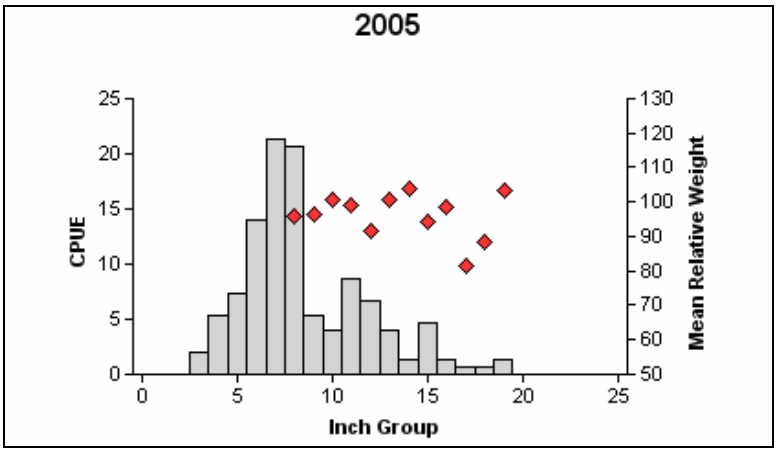
Figure 6. Length frequency of harvested channel catfish observed during creel surveys at Martin Creek Reservoir, Texas, February - April 2002, all anglers combined. N is the number of harvested channel catfish observed during creel surveys, and TH is the total estimated harvest for the creel period.

Largemouth Bass



Effort = 1.5
Total CPUE = 9.3 (21; 14)
Stock CPUE = 6.7 (25; 10)
PSD = 50.0 (0.2)
RSD-14 = 20.0 (0.11)

Effort = 1.5
Total CPUE = 96.7 (17; 145)
Stock CPUE = 55.3 (16; 83)
PSD = 19.0 (0.04)
RSD-14 = 16.0 (0.04)



Effort = 1.5
Total CPUE = 109.3 (12; 164)
Stock CPUE = 59.3 (15; 89)
PSD = 35.0 (0.05)
RSD-14 = 17.0 (0.04)

Figure 7. Number of largemouth bass caught per hour (CPUE, bars), mean relative weight (diamonds), and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for fall electrofishing surveys, Martin Creek Reservoir, Texas, 2000, 2001, and 2005.

Black Basses

Table 7. Creel survey statistics for black basses for Martin Creek Reservoir from February - April 2002, where total catch per hour is for anglers targeting black basses and total harvest is the estimated number of black basses harvested by all anglers. Relative standard errors (RSE) are in parentheses.

Creel Survey Statistic	February-April 2002
Directed effort (h)	6,435.8 (36)
Directed effort/acre	1.2 (36)
Total catch per hour	0.4 (29)
Total harvest	1,039.2 (174)
Harvest/acre	0.2 (174)
Percent legal released	< 1.0

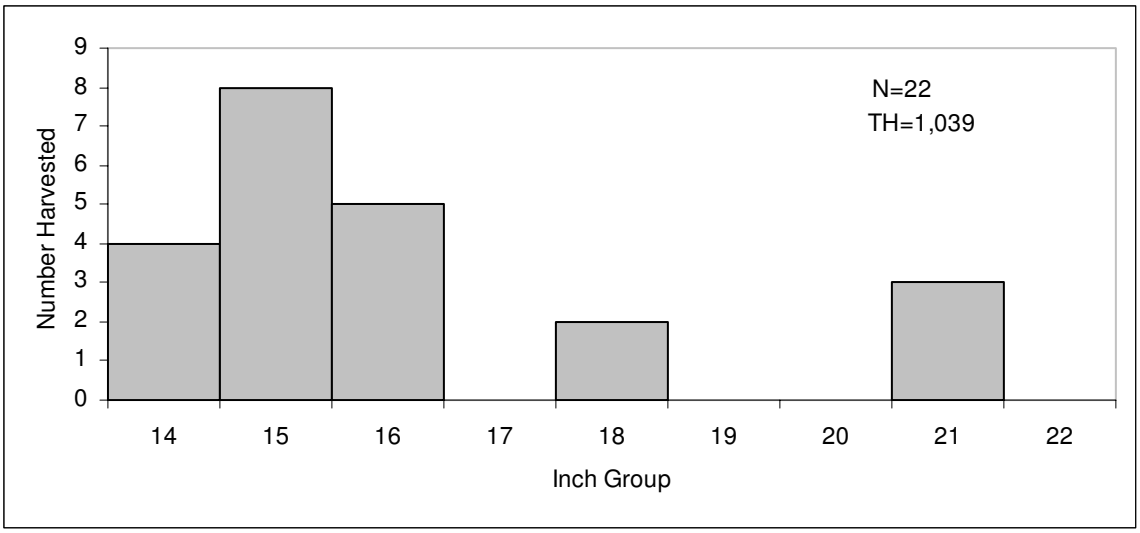


Figure 8. Length frequency of harvested largemouth bass observed during creel surveys at Martin Creek Reservoir, Texas, February - April 2002, all anglers combined. N is the number of harvested largemouth bass observed during creel surveys, and TH is the total estimated harvest for the creel period.

Table 8. Results of genetic analysis of largemouth bass collected by fall electrofishing, Martin Creek Reservoir, Texas, 1997, 1999, 2001, and 2005. FLMB = Florida largemouth bass, NLMB = Northern largemouth bass, F1 = first generation hybrid between a FLMB and a NLMB, Fx = second or higher generation hybrid between a FLMB and a NLMB.

		Genotype					
Year	Sample size	FLMB	F1	Fx	NLMB	% FLMB alleles	% pure FLMB
1999	30	7	9	14	0	66.7	23.3
2001	47	12	8	26	1	68.1	26.7
2005	55	1	3	51	0	65.4	2.0

Crappies

Table 9. Creel survey statistics for crappies (white and black crappies combined) at Martin Creek Reservoir from February - April 2002, where total catch per hour is for anglers targeting crappies and total harvest is the estimated number of crappies harvested by all anglers. Relative standard errors (RSE) are in parentheses.

Creel Survey Statistic	February-April 2002
Directed effort (h)	5,933.6 (35.46)
Directed effort/acre	1.1 (35.46)
Total catch per hour	0.8 (56)
Total harvest	5,044.9 (109)
Harvest/acre	1.0 (109)
Percent legal released	0.0

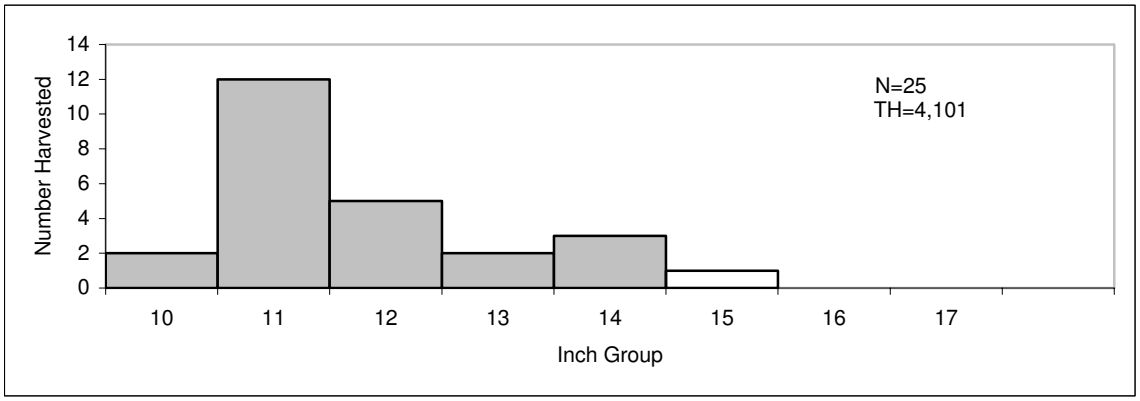


Figure 9. Length frequency of harvested black crappie observed during creel surveys at Martin Creek Reservoir, Texas, February - April 2002, all anglers combined. N is the number of harvested black crappie observed during creel surveys, and TH is the total estimated harvest for the creel period.

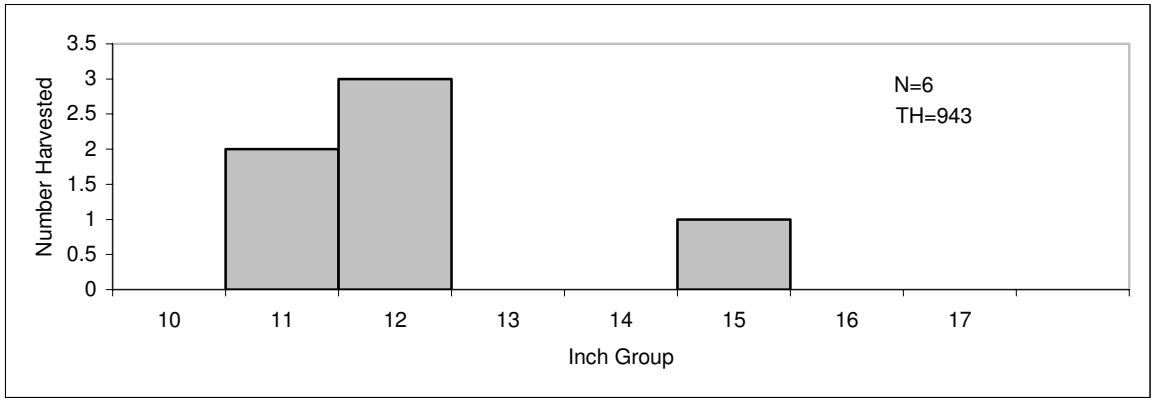


Figure 10. Length frequency of harvested white crappie observed during creel surveys at Martin Creek Reservoir, Texas, February - April 2002, all anglers combined. N is the number of harvested white crappie observed during creel surveys, and TH is the total estimated harvest for the creel period.

Table 10. Proposed sampling schedule for Martin Creek Reservoir, Texas. Gill netting surveys are conducted in the spring, while electrofishing surveys are conducted in the fall. Standard survey denoted by S.

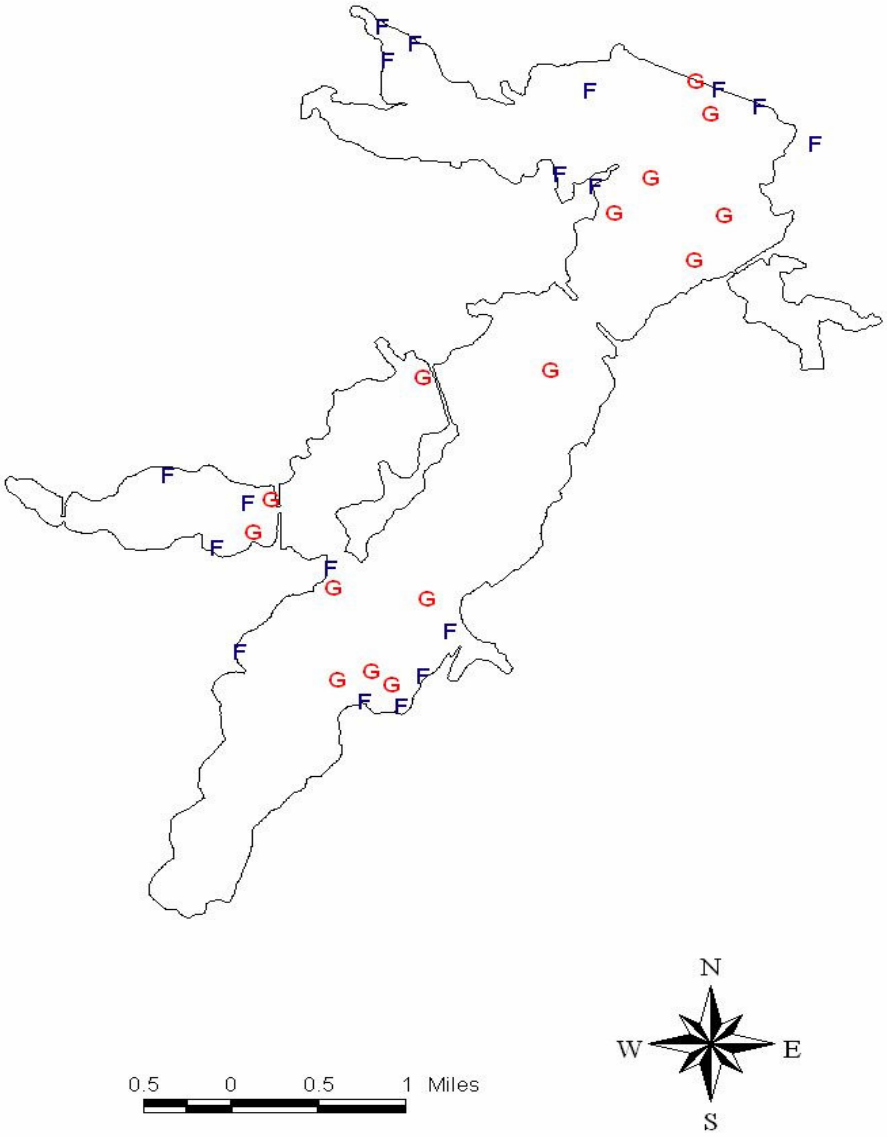
Survey Year	Electrofishing	Gill Net	Creel Survey	Habitat / Vegetation Survey	Report
Fall 2006-Spring 2007					
Fall 2007-Spring 2008					
Fall 2008-Spring 2009					
Fall 2009-Spring 2010	S	S	S	S	S

APPENDIX A

Number (N) and catch rate (CPUE) of species collected from gill netting and fall electrofishing, Martin Creek Reservoir, Texas, 2005-2006. Only data from targeted species were recorded from electrofishing.

	Gill Net		Fall Electrofishing	
Species	N	CPUE	N	CPUE
Spotted Gar	17	1.13		
Gizzard Shad	165	11.00	99	66.00
Threadfin Shad			104	69.33
Common Carp	2	0.13		
Triploid Grass Carp	1	.07		
Spotted Sucker	20	1.33		
Blue Catfish	59	3.93		
Channel Catfish	447	29.80		
Redbreast sunfish			171	114.00
Warmouth			1	0.67
Bluegill			465	310.00
Longear sunfish			207	138.00
Redear sunfish			13	8.67
Spotted Sunfish			1	0.67
Spotted Bass			1	0.67
Largemouth Bass	18	1.2	164	109.33

APPENDIX B



Location of sampling sites, Martin Creek Reservoir, Texas, 2005-2006. Gill net and electrofishing stations are indicated by G and F, respectively. Water level was 2-3 feet below conservation pool at time of sampling.