

PERFORMANCE REPORT

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FEDERAL AID IN SPORT FISH RESTORATION ACT

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FEDERAL AID PROJECT F-221-M-2

INLAND FISHERIES DIVISION MONITORING AND MANAGEMENT PROGRAM

2011 Survey Report

**Fayette County Reservoir**

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## SURVEY AND MANAGEMENT SUMMARY

Fish populations in Fayette County Reservoir were surveyed in 2009 and 2011 using electrofishing and in 2012 using gill nets. This report summarizes results of the surveys and contains a fisheries management plan for the reservoir based on those findings.

- **Reservoir Description:** Fayette County Reservoir is a 2,394-acre impoundment of Cedar Creek; an intermittent stream in the Colorado River watershed. It was constructed in 1978 by the Lower Colorado River Authority (LCRA) for the purpose of supplying cooling water for steam-electric power generation. The reservoir is located in Fayette County, approximately seven miles east of La Grange, Texas. The reservoir lies within the Post Oak Savannah ecological area. Water in the reservoir is maintained at a near-constant level (1-2 ft annual fluctuation). During periods of low rainfall, water is pumped into the reservoir from the Colorado River. Surrounding shoreline is mostly undeveloped. Shoreline length is approximately 20 miles. Fayette County Reservoir was opened to fishing in 1979.
- **Management history:** Important sport fish include largemouth bass and catfish species. Florida largemouth bass were stocked into nursery ponds during 1977 prior to reservoir filling. Largemouth bass have been managed since 1979 with several differing length limit regulations; but currently managed under a 14- to 24-inch slot length limit with a 5 fish daily bag, only 1 over 24 inches. Trap netting for white crappie was not performed due to historically low catch rates and the high cost/benefit ratio associated with collecting these data. Crappie have not been collected with any gear type since the early 1990s (Bonds and Magnelia 2003). There was no directed effort for crappie (De Jesus and Magnelia 2008). A volunteer angler survey was conducted from October 2004 to May 2006 to determine catch trends and length distribution of trophy largemouth bass. Aquatic vegetation habitat surveys have been conducted annually to monitor invasive species and evaluate angler access conditions.
- **Fish Community**
  - **Prey species:** Sunfishes were the most abundant prey species available. Threadfin and gizzard shad were available as well.
  - **Catfishes:** Channel catfish were the most abundant catfish species present. Flathead catfish were present in low density.
  - **Largemouth bass:** Largemouth bass were abundant.

**Management Strategies:** The reservoir should continue to be managed with existing length limit and harvest regulations. Aquatic vegetation should continue to be monitored with annual vegetation surveys.

## INTRODUCTION

This document is a summary of fisheries data collected from Fayette County Reservoir from 2008–2012. 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 for comparison.

### *Reservoir Description*

Fayette County Reservoir is a 2,394-acre impoundment of Cedar Creek; an intermittent stream in the Colorado River watershed. It was constructed in 1978 by the LCRA for the purpose of supplying cooling water for steam-electric power generation. The reservoir is located in Fayette County, approximately seven miles east of La Grange, Texas. The reservoir lies within the Post Oak Savannah ecological area. Water in the reservoir is maintained at a near-constant level (1-2 ft annual fluctuation). During periods of low rainfall, water is pumped into the reservoir from the Colorado River. Shoreline surrounding the reservoir was undeveloped and shoreline length is approximately 20 miles. Fayette County Reservoir was opened to fishing in 1979. Shoreline access was limited within LCRA park boundaries, with main access by fishing pier in two parks. Multi-lane, concrete boat ramps (two boat lanes total) were located within both parks, offering adequate boat access to the reservoir. Other descriptive characteristics for Fayette County Reservoir are in Table 1.

### *Management History*

**Previous management strategies and actions:** Management strategies and actions from the previous survey report (De Jesus and Magnelia 2008) included:

1. Continue to promote the quality largemouth bass fishery at Fayette County Reservoir.  
**Action:** In 2009, results of the trophy bass survey were published in the North American Journal of Fisheries Management. Fayette County Reservoir was highlighted in several outdoor magazines to promote its fishing opportunities.
2. Continue additional fall electrofishing surveys to monitor the largemouth bass population.  
**Action:** An optional bass-only electrofishing survey was conducted in fall 2009.
3. Continue annual aquatic vegetation monitoring.  
**Action:** Annual aquatic vegetation surveys were conducted since 2007 to monitor the potential for expansion of invasive species.

**Harvest regulation history:** Sportfishes in Fayette County Reservoir were managed with statewide regulations with the exception of largemouth bass (Table 2). From 1979 to 1985, largemouth bass were managed with a 16-inch minimum length limit. Slot length limits have been implemented since September 1, 1985 to: increase abundance of bass greater than 14 inches in length; increase angler catches of bass greater than 14 inches in length; and re-direct harvest at individuals less than 14 inches in length. A 14- to 24-inch slot length limit with a 5 fish daily bag, only 1 over 24-inches was implemented on September 1, 1995 to try to protect larger, quality fish from harvest while trying to increase the availability of trophy-size largemouth bass.

**Stocking history:** Florida largemouth bass and catfishes were important species stocked. A complete stocking history is in Table 3.

**Aquatic vegetation/habitat history:** Fayette County Reservoir supported a mix of aquatic vegetation species (Table 4). Aquatic vegetation surveys were conducted every summer from 2008 to 2011 (Table 5a - c). The plant community composition has not changed since the 2007 survey, when Marine Naiad (*Najas marina*) was the dominant aquatic vegetation (De Jesus and Magnelia 2008). The exotic plant “hydrilla” (*Hydrilla verticillata*) was present in this reservoir along with other native aquatic plant species.

Hydrilla coverage remained low and covered <1% of the reservoir during each survey. Mean total coverage over the past four years was 6.5%. Aquatic plants offered excellent fish habitat, especially for largemouth bass.

**Water Transfer:** There were no inter-basin water diversion structures at Fayette County Reservoir. Water is pumped in from the Colorado River to maintain reservoir levels needed to maintain operations when levels decline.

## METHODS

Fishes were collected by electrofishing (1.5 hour at 18 five-min stations) and gill netting (5 net nights at 5 stations). Sampling effort was increased for largemouth bass to get a more precise assessment of this important fishery. This was accomplished by increasing the number of electrofishing stations to 18 (12 required) and adding a bass-only electrofishing survey in 2009. 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 Manual (TPWD, Inland Fisheries Division, unpublished manual revised 2011). Aquatic vegetation surveys were conducted during peak growing season around the entire reservoir. Aquatic vegetation coverage was estimated by the use of Trimble® GPS unit in conjunction with sonar depth finder. Species identification was confirmed on samples collected with a modified aquatic rake. Littoral habitat was observed and documented along the entire shoreline from a survey boat. Reservoir access was surveyed during vegetation surveys.

Sampling statistics (CPUE for various length categories), structural indices [Proportional Size Distribution (PSD), as defined by Guy et al. (2007)], and condition indices [relative weight ( $W_r$ )] were calculated for target fishes according to Anderson and Neumann (1996). Index of vulnerability (IOV) was used to determine the percentage of gizzard shad vulnerable to predation (DiCenzo et al. 1996). Relative standard error ( $RSE = 100 \times SE \text{ of the estimate/estimate}$ ) was calculated for all CPUE statistics and SE was calculated for structural indices and IOV. Ages were determined for largemouth bass using otoliths from 13 fish from 13- to 15-inches (category 1 age-and-growth sampling design recommendations (TPWD, Inland Fisheries Division, unpublished manual revised 2011)).

## RESULTS AND DISCUSSION

**Habitat:** Shoreline habitat changes little in this stable-level reservoir, and consisted primarily of vegetated (terrestrial) shoreline, as described in 2004 (Table 4). Emergent aquatic vegetation provided good habitat for phytophilic fish species. Submerged aquatic vegetation provided littoral habitat for fish (Appendix C). Aquatic vegetation coverage (4%) in August 2011 was below optimal (20%) for fish production (Durocher et al. 1984, Dibble et al. 1996). Aquatic vegetation coverage commonly fluctuates in this reservoir so decreasing coverage tends to recover shortly after, portraying a historically cyclic trend visible in the past 3 years. Bulrush (*Scirpus* sp.) linear shoreline coverage was calculated at 13,191m, while aerial coverage was estimated at 20 acres in 2007. It was difficult to tell if bulrush is expanding due to inaccessible stands and variability in the mapping process. During the 2010 vegetation survey, it was noted there were no access or fishing issues created by emergent vegetation on the reservoir.

**Prey species:** Electrofishing catch rates of gizzard shad, bluegill and redear sunfish were 14.7/h, 64.0/h, and 52.0/h, respectively. Threadfin shad (70.7/h) and blue tilapia (1.3/h) were also available as forage. Catch rates for gizzard shad rebounded from zero in 2007 (Figure 1) and the index of vulnerability (IOV) improved, indicating that 64% of gizzard shad sampled were of vulnerable size ( $\leq 8$  inches) to existing predators. Low gizzard shad catch rates have been characteristic for this reservoir, but not alarming as other forage species are abundant. Total catch rates of threadfin shad increased from 15.0/h in 2007 to 70.7/h in 2011. Bluegill decreased to 64.0/h in 2011 from 174.0/h in 2007 (Figure 2). The bluegill size structure continued to be dominated by small individuals. Redear sunfish abundance increased to 52.0/h in 2011 from 35.0/h in 2007. Over the last three surveys, redear sunfish catch rates and size distributions have increased with more quality-size individuals ( $\geq 7$  inches) present (Figure 3). These larger individuals offered the opportunity for quality sunfish fishing. The changes in prey structure may have reflected the recent changes in the abundance of aquatic vegetation community. The observed vegetation decline in 2010 may have left sunfish vulnerable to predators while pelagic species may have had a chance to recover. As aquatic vegetation expands, so should the abundance of sunfish, which comprise the bulk of the prey.

**Catfishes:** The gill net catch rate for channel catfish was 3.8/nn, down from 10.0/nn and 14.8/nn in 2008 and 2004, respectively, (Figure 4). The decline was possibly due in part to predation of smaller individuals by largemouth bass. In 2004, channel catfish CPUE began decreasing from a historic high in 1999 (Appendix D). This coincided with an increase in largemouth bass stock CPUE in 2004 (Appendix E). This may also explain why (other than gear recruitment) there were low numbers of channel catfish sampled below 12-inches for the last 3 surveys (Figure 4). Another possibility for declining channel catfish CPUE was angler harvest. The 2005/2006 creel survey showed directed effort toward channel catfish was 4,480 hours, while total harvest was 6,378 fish (De Jesus and Magnelia 2008). With a release rate of 13 percent (De Jesus and Magnelia 2008), not many legal sized adults were returned to the lake. The 2012 catch rate for channel catfish did not appear to be abnormal compared to historic catch data (Appendix D). Channel catfish CPUE decreased to 0.6/nn in 1996 but rebounded to 17.2/nn in 1999. This suggested the potential for recovery was possible. Spawning habitat should still be plentiful, so poor recruitment is more likely an issue than poor reproduction. The average CPUE for channel catfish since 1993 has been 8.4/nn. Legal-size fish greater than 12 inches in length made up 100% of the 2012 gill net catch, and larger ( $\geq 20$  inches) individuals were available to anglers. Channel catfish condition was excellent in 2012, as mean relative weight ( $W_r$ ) values for all but one stock-size inch group exceeded 100 (range 90 –130). The gill net catch rate for flathead catfish was 0.4/nn in 2012. Flathead catfish have been historically present in low abundance. Blue catfish have not been sampled since 1990.

**Largemouth bass:** The reservoir contained a high-density largemouth bass population relative to bass populations in other central Texas Reservoirs. In 2011, Total CPUE was 188.0/h, which was similar to catch rates in 2007 (172.0/h) and higher than in 2009 (88.7/h, Figure 5). Stock CPUE in 2011 was 166.0/h which was also higher than 2007 and 2009 (141.0/h and 71.3/h, respectively). The 2011 Stock CPUE was above the average (119.1/h) for largemouth bass since 1996 (Appendix E). Size structure was

adequate as PSD ranged from 68 to 81 over the past three surveys (Figure 5), confirming the quality of the fishery. Similar to trends observed and reported in 2008 (De Jesus and Magnelia), few ( $N = 6$ ) largemouth bass  $\geq 21$  inches in length were collected during the past two electrofishing surveys in 2009 and 2011; with catch rates averaging 2.0/h during this time. No larger individuals 24 inches or greater were collected during this period. However, anecdotal reports of larger fish being caught are consistent from personal communications with anglers and in fishing forums; suggesting larger fish are available at Fayette County Reservoir. This is similar to what was reported in De Jesus et al. (2009), regarding the availability of trophy bass in spite of poor electrofishing catch rates of larger fish. Overall, largemouth bass collected during electrofishing surveys in 2009 and 2011 displayed good body condition as mean relative weight ( $W_r$ ) values for most stock-size inch groups ranged between 85 and 120. Growth of largemouth bass in Fayette County Reservoir was excellent; average age at which they attained 14 inches in length was 1.5 years ( $N = 13$ ; range = 1–4 years), which was considered fast growth for central Texas (Figure 6). This growth trend is typical of power plant reservoirs with year-long warm water temperatures and extended growing seasons. Florida largemouth bass influence was strong in 2007 when the genetic analysis indicated 94% of the population contained Florida largemouth bass alleles, and 40% of the sample was pure Florida bass (De Jesus and Magnelia 2008).

## Fisheries management plan for Fayette County Reservoir, Texas

Prepared – July 2012

**ISSUE 1:** Recent creel surveys and anecdotal reports have revealed that largemouth bass over 24 inches long are present in Fayette County Reservoir, and it is considered by many one of the premier largemouth bass lakes in the state. Electrofishing surveys have consistently revealed healthy largemouth bass populations the past several years due to suitable aquatic vegetation habitat and forage. Aquatic vegetation abundance and species composition in Fayette County Reservoir have the potential to fluctuate. These fluctuations have the potential to affect predator/prey composition in the reservoir.

### MANAGEMENT STRATEGIES

1. Continue to promote the quality largemouth bass fishery at Fayette County Reservoir when possible.
2. Continue to conduct additional fall electrofishing surveys to monitor the largemouth bass population.
3. Continue annual aquatic vegetation surveys to monitor aquatic vegetation coverage.

**ISSUE 2:** Many invasive species threaten aquatic habitats and organisms in Texas and can adversely affect the state ecologically, environmentally, and economically. For example, zebra mussels (*Dreissena polymorpha*) can multiply rapidly and attach themselves to any available hard structure, restricting water flow in pipes, fouling swimming beaches and plugging engine cooling systems. Giant Salvinia (*Salvinia molesta*) and other invasive vegetation species can form dense mats, interfering with recreational activities like fishing, boating, skiing and swimming. The financial costs of controlling and/or eradicating these types of invasive species are significant. Additionally, the potential for invasive species to spread to other river drainages and reservoirs via watercraft and other means is a serious threat to all public waters of the state.

### MANAGEMENT STRATEGIES

1. Monitor the status of hydrilla during annual aquatic vegetation surveys.
2. Educate the public about invasive species through the use of media and the internet.
3. Make a speaking point about invasive species when presenting to constituent and user groups.
4. Keep track of (i.e., map) future inter-basin water transfers to facilitate potential invasive species responses.

### SAMPLING SCHEDULE JUSTIFICATION:

The proposed sampling schedule included mandatory monitoring by electrofishing and gill netting in 2015/2016 (Table 7). Additional electrofishing in fall 2013 is necessary to monitor the largemouth bass population. Trap net sampling for white crappie was eliminated on this reservoir because of low historical trap net catches and low directed angler effort for this species.

## LITERATURE CITED

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Table 1. Characteristics of Fayette County Reservoir, Texas.

Characteristic	Description
Year constructed	1978
Controlling authority	Lower Colorado River Authority
County	Fayette
Reservoir type	Power cooling
Shoreline Development Index (SDI)	unknown
Conductivity	1,400 $\mu$ mhos/cm

Table 2. Harvest regulations for Fayette County Reservoir.

Species	Bag Limit	Length Limit (inches)
Catfish: channel catfish, hybrids and subspecies	25 (in any combination)	12 minimum
Catfish, flathead	5	18 minimum
Bass: largemouth	5 (1 over 24")	14 – 24 slot
Crappie: white and black crappie, their hybrids and subspecies	25 (in any combination)	10 minimum

Table 3. Stocking history of Fayette County Reservoir, Texas. Life stages are fry (FRY), fingerlings (FGL), advanced fingerlings (AFGL), adults (ADL) and unknown (UNK). Life stages for each species are defined as having a mean length that falls within the given length range. For each year and life stage the species mean total length (Mean TL; in) is given. For years where there were multiple stocking events for a particular species and life stage the mean TL is an average for all stocking events combined.

<b>Species</b>	<b>Year</b>	<b>Number</b>	<b>Life Stage</b>	<b>Mean TL (in)</b>
Black crappie x White crappie	1994	111,979	FRY	0.9
	1996	120,895	FRY	0.9
	1997	118,977	FRY	0.9
	Total	351,851		
Blue catfish	1976	27,860	UNK	UNK
	1985	6,784	FGL	2.0
	1986	12,150	FGL	2.0
	Total	46,794		
Channel catfish	1976	96,000	AFGL	7.9
	1985	13,803	AFGL	5.0
	1986	12,070	AFGL	5.0
	Total	121,873		
Flathead catfish	1976	12,000	UNK	UNK
	Total	12,000		
Florida largemouth bass	1977	96,375	FRY	1.0
	1994	208	ADL	12.0
	Total	96,583		

Table 4. Survey of littoral and physical habitat types, Fayette County Reservoir, Texas, 2004. 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 in August, 2011.

Shoreline habitat type	Shoreline Distance		Surface Area	
	Miles	Percent of total	Acres	Percent of reservoir surface area
Vegetated bank	13.0	61		
Rip rap	3.5	17		
Dead trees/stumps w/ vegetated bank	2.8	13		
Concrete	1	5		
Eroded bank	0.3	1		
Boat dock	0.3	1		
Sandy bank	0.3	1		
Dead tree/stumps w/ overhanging brush	0.3	1		
Bulrush			20	<1
Hydrilla			14	<1
Marine naiad			50	2
Southern naiad			21	<1

Table 5a. Aquatic plants observed during aquatic vegetation surveys in Fayette County Reservoir, Texas, September 2010. Surface area (acres) and percent reservoir coverage were determined for each plant species.

Common Name	Scientific name	Acres	% coverage
Bulrush	<i>Scirpus</i> sp.	20	<1
Hydrilla	<i>Hydrilla verticillata</i>	9	<1
Marine naiad	<i>Najas marina</i>	1	<1
Mixed 1	<i>N. marina/H. verticillata</i>	63	3
	Total	93	4

Table 5b. Aquatic plants observed during aquatic vegetation surveys in Fayette County Reservoir, Texas, September 2009. Surface area (acres) and percent reservoir coverage were determined for each plant species.

Common Name	Scientific name	Acres	% coverage
Bulrush	<i>Scirpus</i> sp.	20	<1
Hydrilla	<i>Hydrilla verticillata</i>	34	1
Marine naiad	<i>Najas marina</i>	141	6
Mixed 1	<i>N. marina/H. verticillata</i>	8	<1
Pondweed	<i>Potamogeton</i> sp.	2	<1
	Total	205	9

Table 5c. Aquatic plants observed during aquatic vegetation surveys in Fayette County Reservoir, Texas, September 2008. Surface area (acres) and percent reservoir coverage were determined for each plant species.

Common Name	Scientific name	Acres	% coverage
Bulrush	<i>Scirpus</i> sp.	20	<1
Hydrilla	<i>Hydrilla verticillata</i>	13	<1
Marine naiad	<i>Najas marina</i>	162	7
Mixed 1	<i>H. verticillata/Potamogeton</i> sp.	3	<1
Mixed 2	<i>N. marina/H. verticillata</i>	1	<1
Pondweed	<i>Potamogeton</i> sp.	6	<1
	Total	205	9

## Gizzard Shad

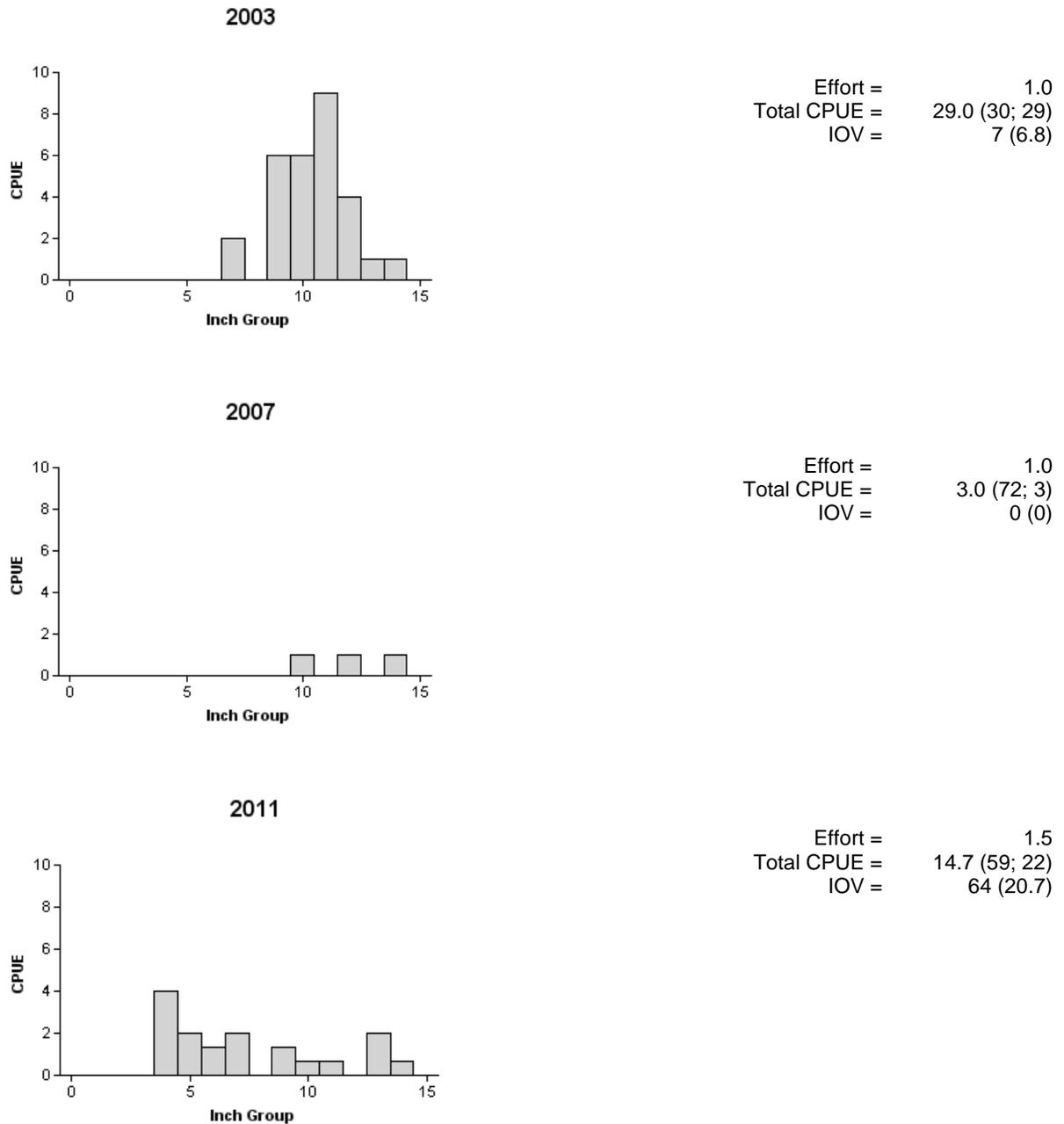
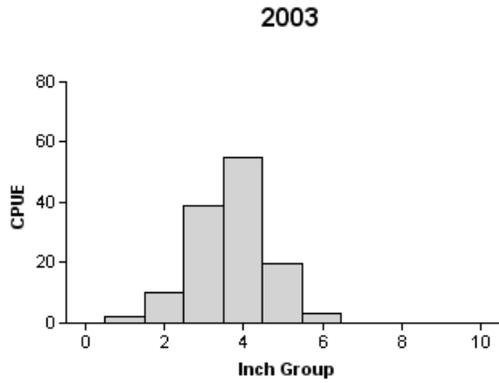
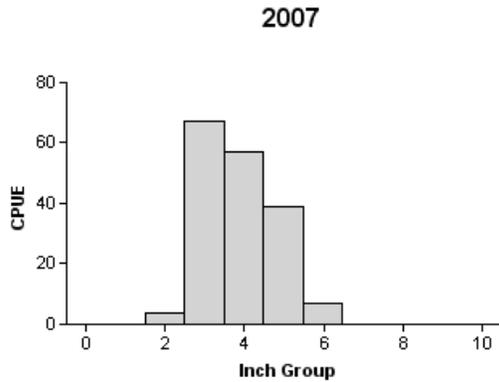


Figure 1. Number of gizzard shad caught per hour (CPUE) and population indices (RSE and N for CPUE and SE for IOV are in parentheses) for fall electrofishing surveys, Fayette County Reservoir, Texas, 2003, 2007 and 2011.

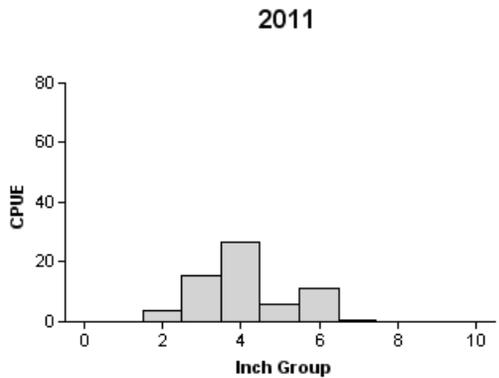
# Bluegill



Effort = 1.0  
 Total CPUE = 129.0 (45; 129)  
 PSD = 3 (2.7)



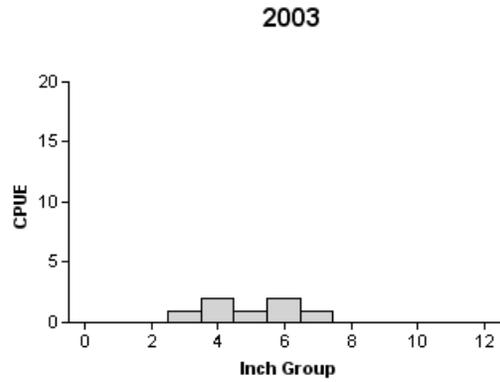
Effort = 1.0  
 Total CPUE = 174.0 (27; 174)  
 PSD = 4 (1.2)



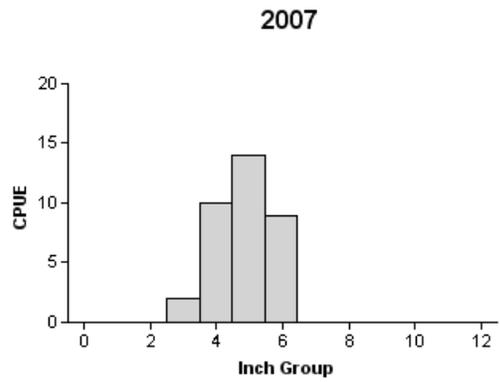
Effort = 1.5  
 Total CPUE = 64.0 (33; 96)  
 PSD = 20 (6.3)

Figure 2. 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, Fayette County Reservoir, Texas, 2003, 2007 and 2011.

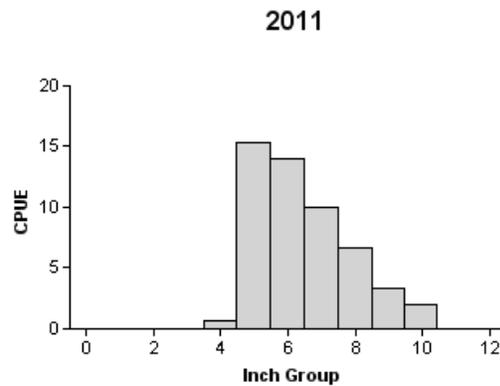
## Redear Sunfish



Effort = 1.0  
 Total CPUE = 7.0 (58; 7)  
 PSD = 17 (10)



Effort = 1.0  
 Total CPUE = 35.0 (38; 35)  
 PSD = 0 (51.3)



Effort = 1.5  
 Total CPUE = 52.0 (30; 78)  
 PSD = 42 (5.7)

Figure 3. Number of redear sunfish caught per hour (CPUE) and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for fall electrofishing surveys, Fayette County Reservoir, Texas, 2003, 2007 and 2011.

## Channel Catfish

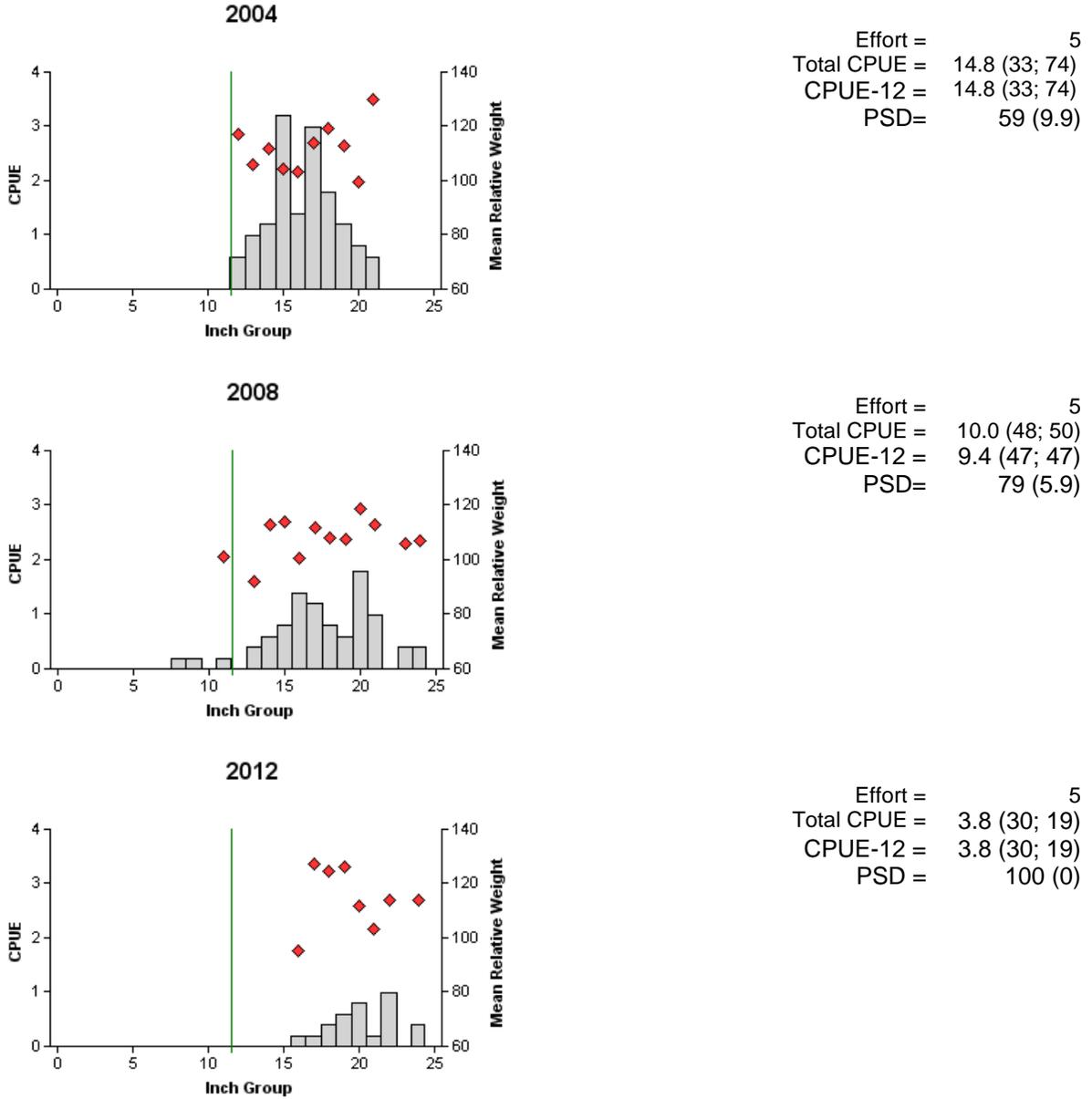


Figure 4. Number of channel catfish caught per net night (CPUE, bars), mean relative weight (diamonds), and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for spring gill net surveys, Fayette County Reservoir, Texas, 2004, 2008 and 2012. Vertical lines represent minimum length limit at the time of the survey.

## Largemouth Bass

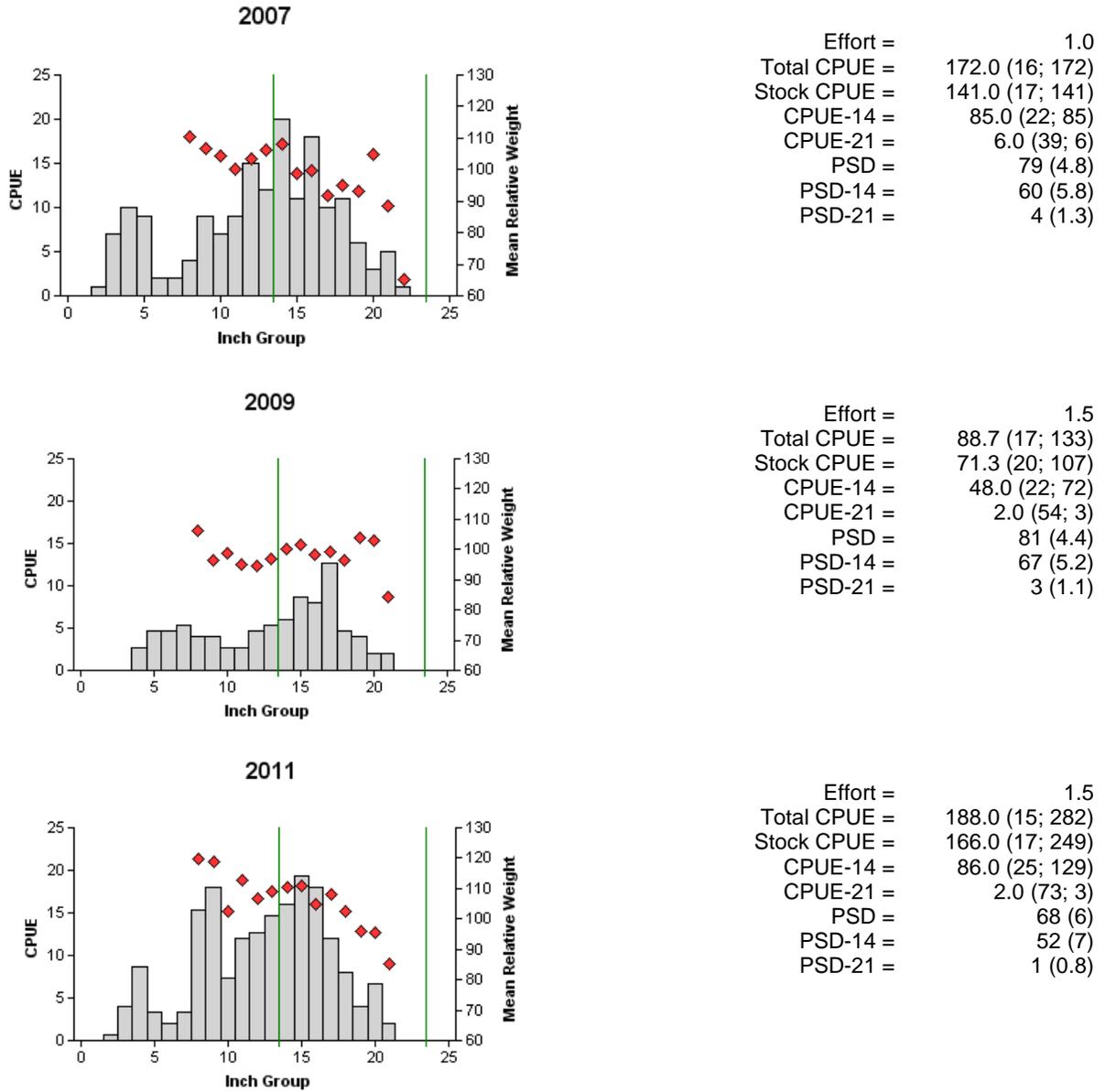


Figure 5. Number of largemouth bass caught per hour (CPUE, bars), mean relative weight (diamonds), and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for fall electrofishing surveys, Fayette County Reservoir, Texas, 2007, 2009 and 2011. Vertical lines represent the slot length limits at the time of the survey.

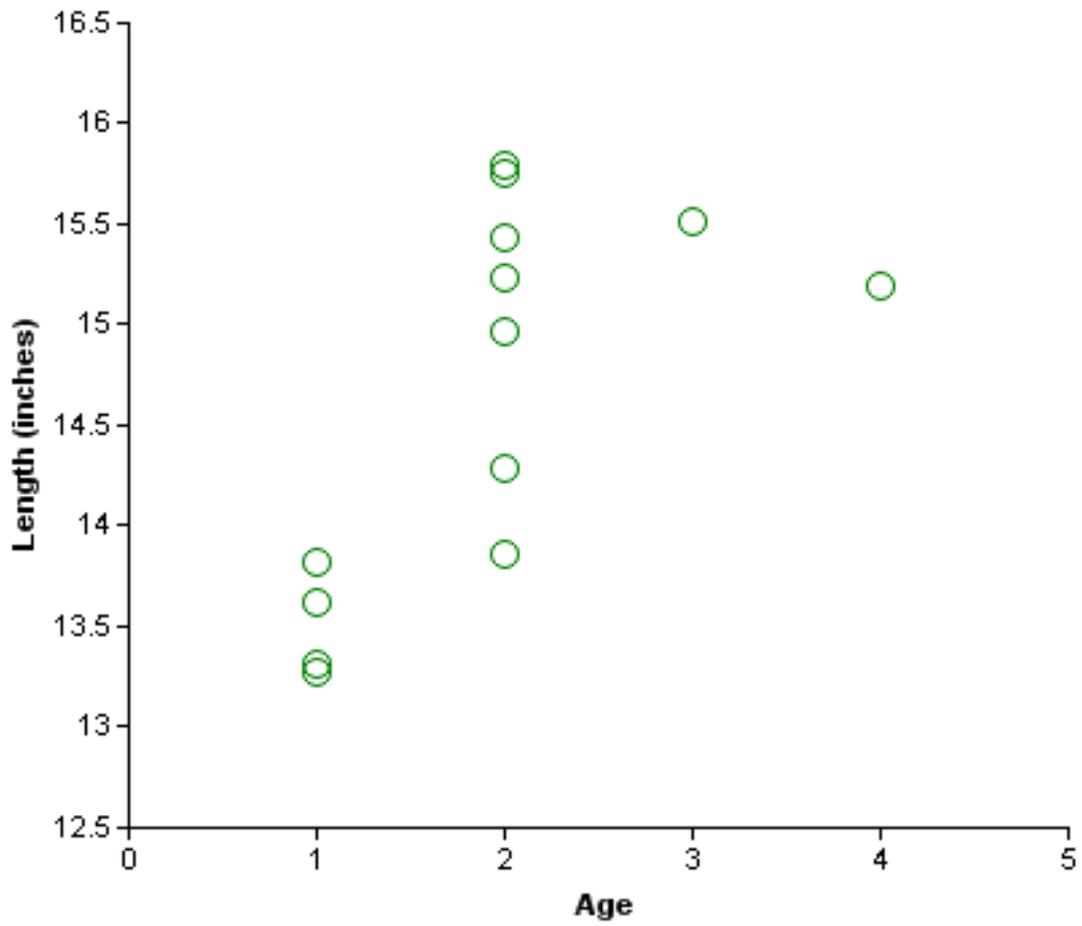


Figure 6. Length at age for largemouth bass collected electrofishing, Fayette County Reservoir, November 2011 (N = 13).

Table 6. Proposed sampling schedule for Fayette County Reservoir, Texas. Gill netting surveys are conducted in the spring, while electrofishing surveys are conducted in the fall. Standard survey denoted by S and additional survey denoted by A.

Survey Year	Electrofisher	Trap Net	Gill Net	Creel Survey	Vegetation Survey	Access Survey	Habitat Survey	Report
Fall 2012-Spring 2013					A			
Fall 2013-Spring 2014	A				A			
Fall 2014-Spring 2015					A			
Fall 2015-Spring 2016	S		S		S	S	S	S

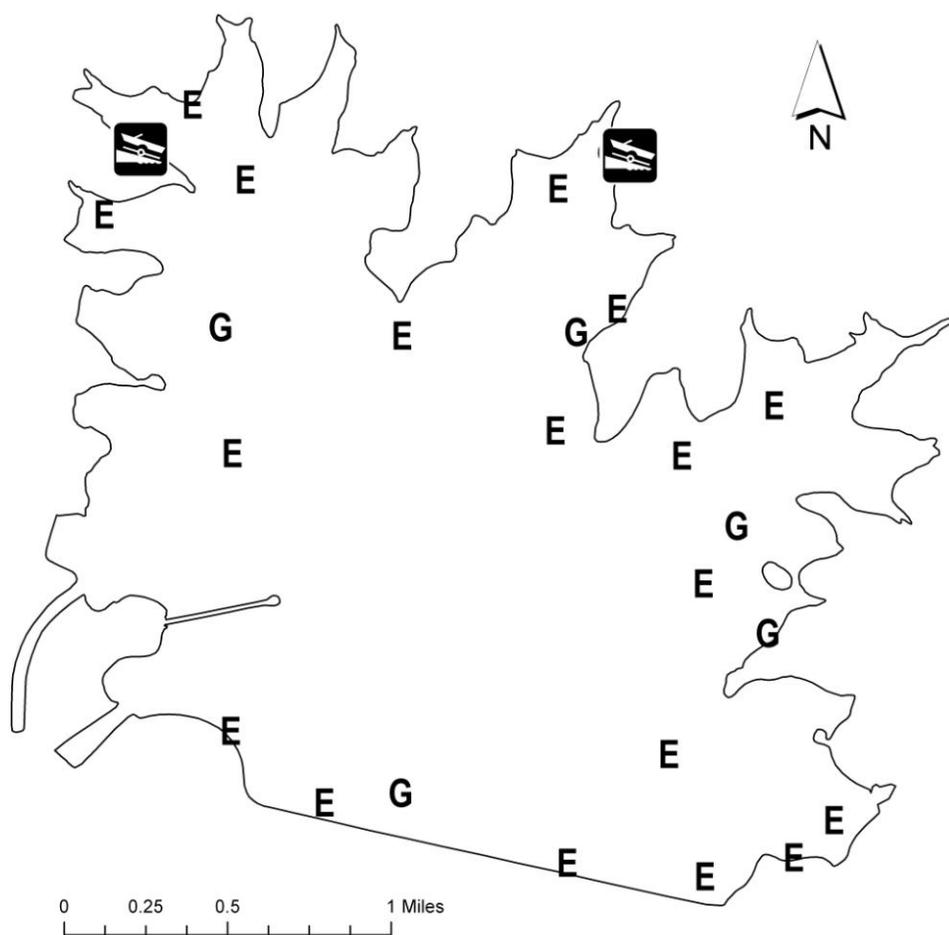
**APPENDIX A**

Number (N) and catch rate (CPUE) of all species collected from all gear types from Fayette County Reservoir, Texas, 2011-2012.

Species	Gill Netting		Electrofishing	
	N	CPUE	N	CPUE
Gizzard shad			22	14.7
Threadfin shad			106	70.7
Channel catfish	19	3.8		
Flathead catfish	2	0.4		
Bluegill			96	64.0
Redear sunfish			78	52.0
Largemouth bass			282	188.0
Blue tilapia			2	1.3
Inland Silverside			5	3.3

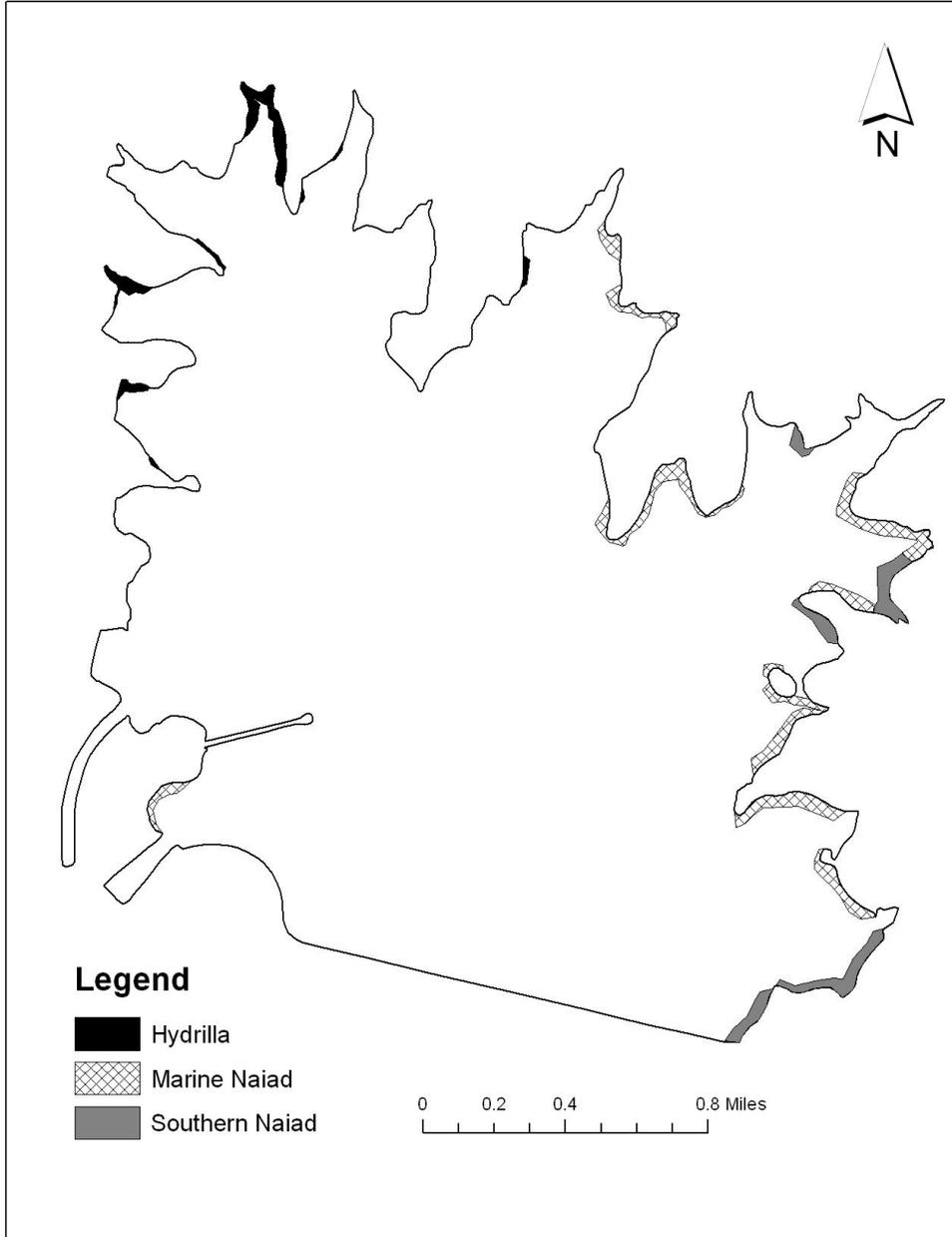
**APPENDIX B**

Location of sampling sites, Fayette County Reservoir, Texas, 2011-2012. Gill net and electrofishing stations are indicated by G and E, respectively. Boat ramps are denoted by this symbol: 



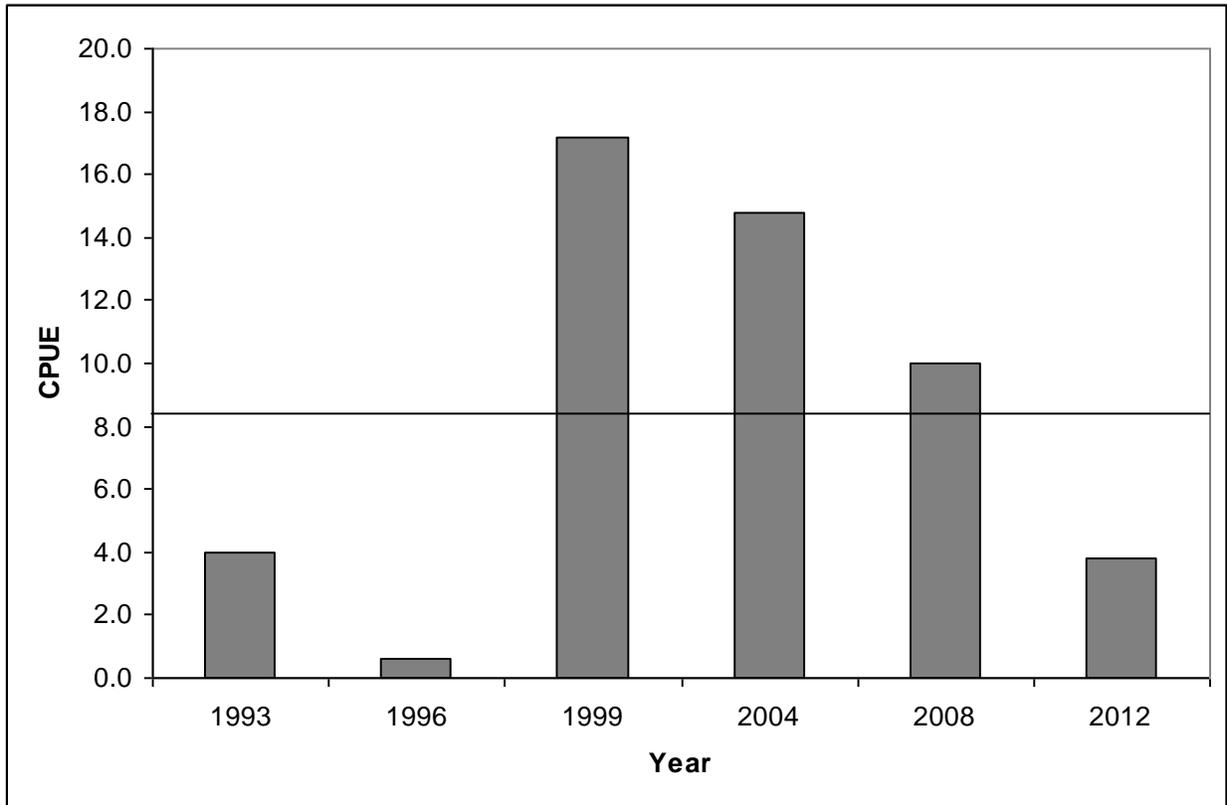
**APPENDIX C**

Aquatic vegetation survey coverage map for Fayette County Reservoir, Texas August 2011.



**APPENDIX D**

Number of Channel catfish caught per net night from Fayette County Reservoir, Texas 1993–2012. Total CPUE represented by bars. Horizontal line represents average CPUE (fish/nn) over time.



**APPENDIX E**

Number of stock-sized largemouth bass caught per hour (Stock CPUE) from Fayette County Reservoir, Texas 1996–2011. Standard and bass-only surveys included for spring and fall electrofishing. Stock CPUE represented by bars. Horizontal line represents average Stock CPUE over time.

