

PERFORMANCE REPORT

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FEDERAL AID IN SPORT FISH RESTORATION ACT

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FEDERAL AID PROJECT F-30-R-35

STATEWIDE FRESHWATER FISHERIES MONITORING AND MANAGEMENT PROGRAM

2009 Survey Report

Davy Crockett

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SURVEY AND MANAGEMENT SUMMARY

Fish populations in Davy Crockett Reservoir were surveyed in 2009 using an electrofisher and trap nets and in 2010 using gill nets. Habitat was surveyed in 2009. This report summarizes the results of the surveys and contains a management plan for the reservoir based on those findings.

- **Reservoir description:** Davy Crockett Reservoir is a 355-acre impoundment located on Dixon and Sandy Creeks approximately 14 miles northeast of Bonham. Water level has remained within 3 feet of the spillway since 2005. Davy Crockett Reservoir has high biological productivity. Habitat features consisted of open water, natural shoreline, and native aquatic vegetation (floating-leaved, emergent, submersed; greater than 45% coverage).
- **Management history:** Important sport fish included channel catfish, largemouth bass, and crappies. The management plan from the 2005 survey report included a recommendation to stock advanced sized channel catfish to supplement low recruitment to legal size. Advanced channel catfish were stocked in 2006 and 2008. The plan also included the introduction of threadfin shad to diversify the forage base. They were stocked successfully in 2008 and 2009. Electrofishing sampling indicated their establishment in the forage base. Habitat surveys have revealed an increase in emerged and submerged vegetation in this reservoir.
- **Fish community**
 - **Prey species:** Electrofishing catch rate of gizzard shad was low, but over half the gizzard shad were available as prey. Conversely threadfin shad had high catch rates, which established them as an abundant prey. Electrofishing catch rate of bluegills was high, but much lower than in previous years. They still remained an important prey species.
 - **Channel catfish:** Gill net catch rate of channel catfish was low, but the entire sample population was legal-size and in excellent condition. There was still little evidence of recruitment of young channel catfish, even though channel catfish fingerlings (2 and 9 inch) were stocked. Growth was good.
 - **Largemouth bass:** Electrofishing catch rate of largemouth bass was up from 2005; but no fish were collected over the slot and the percentage of slot-sized bass in the population has dropped. Largemouth bass had adequate growth rates and were generally in good condition.
 - **Crappies:** Abundance was good, growth was adequate, and body condition of fish ≥ 11 inches continued to be good for white crappie. Black crappie are routinely sampled in this reservoir, but in low numbers. A few were collected in this survey.
- **Management strategies:** The channel catfish population may benefit from stocking advanced size fingerlings, after the absence of substock fish has been verified. Pending results of the creel survey and early spring electrofishing, consideration will be given to dropping the existing slot length limit on largemouth bass. Due to possible winter (2009-2010) kill of threadfin shad, stock adult threadfin to ensure forage diversity. Encourage U.S. Forest Service to install and maintain lighting between existing boat ramp and boarding/fishing pier at the east campground. Inform U.S. Forest Service about new exotic species threats to Texas waters, and work with them to display appropriate signage, educate constituents, and understand appropriate enforcement actions.

INTRODUCTION

This document is a summary of fisheries data collected from Davy Crockett Reservoir in 2009-2010. 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 is presented with the 2009-2010 data for comparison.

Reservoir Description

Davy Crockett Reservoir is a 355-acre impoundment constructed in 1938 on Dixon and Sandy Creeks. It is located in Fannin County approximately 14 miles northeast of Bonham and is operated and controlled by the U.S. Forest Service. Primary water uses included wildlife management and recreation. Average Secchi disk transparency was 88 cm for 2009-2010 and suggests moderately eutrophic conditions as per Carlson's Trophic State Index (Texas Commission on Environmental Quality 2008). Dense macrophyte growth around the shoreline is another eutrophic indicator. Eutrophic conditions are further supported by a heavily vegetated watershed that deposits organic debris on the ground resulting in allochthonous enrichment (Findenegg 1966; Sorokin 1966). Habitat at time of sampling consisted of open water, natural shoreline, and native aquatic vegetation. Native plants present were southern naiad, common cattail, bulrush, American lotus, and coontail. Water level was not monitored in this reservoir, but anecdotal observations by our staff and U.S. Forest Service personnel concluded the reservoir has been within 3 feet of the spillway since 2005. Boat access consisted of one public boat ramp. Bank fishing access in one campground was augmented by a pier. The boat ramp and pier were not lighted, which causes some inconvenience for the angler. Bank angling is accessible at a second campground and other shoreline areas on the reservoir's perimeter. Other descriptive characteristics for Davy Crockett Reservoir are in Table 1.

Management History

Previous management strategies and actions: Management strategies and actions from the previous survey report (Hysmith and Moczygemba 2006) included:

1. Stock advanced fingerling channel catfish (12.5/acre) annually for 2 years beginning in 2007 or 2006 if available.
Action: Advanced fingerling channel catfish were stocked in 2006 (10/acre) and 2008 (12.5/acre). The reservoir was also stocked in 2008 with 2-inch fingerling channel catfish at 109/acre.
2. Conduct supplemental electrofishing survey for largemouth bass in fall 2006 to validate apparent decline of sub-stock largemouth bass.
Action: CPUE for sub-stock largemouth bass was 25 in 2006, but dropped again in 2009 to 20. The increase of macrophyte growth may have made collection of substock fish difficult, because CPUE of stock fish has increased since the 2005 sample.
3. Stock adult threadfin shad (1/acre) annually each spring from 2007 to 2009. Discontinue if they become established.
Action: Adult threadfin shad were stocked in 2008 (0.7/acre) and 2009 (2.3/acre). Electrofishing samples in 2009 indicated the threadfin shad were established.
4. Boat ramp and boarding/fishing pier are unlighted.
Action: U.S. Forest Service was encouraged to install and maintain lighting between existing boat ramp and boarding/fishing pier at the east campground. Lighting has not been installed.

Harvest regulation history: Sportfishes in Davy Crockett Reservoir are currently managed with statewide regulations with the exception of largemouth bass (Table 2). From 1986 to 1996, largemouth bass were managed with a 14-inch minimum length limit. A 14- to 18-inch slot length limit was implemented in 1996 to improve the population size structure.

Stocking history: Since the last survey in 2005-2006, Davy Crockett Reservoir was stocked with threadfin shad and channel catfish. Florida largemouth bass were stocked annually from 1997 to 1999. The complete stocking history since 1968 is in Table 3.

Vegetation/habitat history: Davy Crockett Reservoir supports a very diverse native aquatic vegetation community of emergent (common cattail and bulrush), submersed (southern naiad and coontail), and floating-leaved plants (American lotus). Over the years the submersed and floating-leaved vegetation has increased to cause some access problems in the upper end of each arm. In 2005 the native aquatic vegetation coverage was a little over 30%.

Water Transfer: Davy Crockett Reservoir is used exclusively for wildlife management and recreation and water is not transferred to any other location.

METHODS

Fishes were collected by electrofishing (1 hour at 12 5-min stations), gill netting (5 net nights at 5 stations), and trap netting (5 net nights at 5 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 and trap nets, as the number of fish caught 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 2009).

Sampling statistics (CPUE for various length categories), structural indices [Proportional Size Distribution (PSD), as defined by Guy et al. (2007)], and condition indices [relative weights (W_r)] 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 = $100 \times \text{SE of the estimate/estimate}$) was calculated for all CPUE statistics and SE was calculated for structural indices and IOV. Ages for largemouth bass and white crappie were determined using Category 2 protocol and otoliths from 13 to 33 fish according to the Fishery Assessment Procedures (TPWD, Inland Fisheries Division, unpublished manual revised 2009). The manual specifies for largemouth bass only, but we adapted the protocol to include channel catfish and crappie to identify the number of fish to sample. Only one target size (11 – 12 inches) channel catfish was collected; so, otoliths were removed from 4 of the smaller fish. Source for water level data was TPWD and U.S. Forest Service observations.

RESULTS AND DISCUSSION

Habitat: Davy Crockett Reservoir supported emergent, submersed, and floating-leaved native aquatic vegetation (Table 4). Emergent aquatic vegetation (common cattail and bulrush) was common and not problematic. Submersed aquatic vegetation (southern naiad and coontail) was also common, but was considered a nuisance. Floating-leaved aquatic vegetation (American lotus) limited access to portions of both major bays in the upper part of the reservoir. Native aquatic vegetation covered over 45% of the reservoir and occurred from the shoreline out to 8 feet deep water. This was a 50% increase from the 2005 survey.

Prey species: Electrofishing CPUE of gizzard shad and bluegill were 10.0/h and 221.0/h, respectively. Index of vulnerability (IOV) for gizzard shad was good, indicating 70% of gizzard shad were available to existing predators; this was higher than IOV estimates in previous years (Figure 1). Total CPUE of gizzard shad was considerably lower in 2009 compared to the 2005 survey (Figure 1). However threadfin shad, introduced in 2008 and 2009, were collected in very high numbers (Appendices A and C), which provided a high abundance of vulnerable prey. The area experienced an unusually cold winter during 2009-2010 and may have resulted in a significant winter-kill of threadfin shad. Total CPUE of bluegill in 2009 was the lowest on record (Appendix C) and size structure continued to be dominated by small individuals (Figure 2). The abundant submersed and floating-leaved aquatic vegetation may have had an impact on the catch rates of prey species.

Channel catfish: The gill net CPUE of channel catfish was 2.2/nn in 2010 (Figure 3). The channel catfish population continued to decline in abundance with an apparent absence of sub-stock fish in 2010, 2006, and 2002. The fish were healthy as evidenced by relative weights above 100. Four of the smaller fish were aged to determine their year class. Three were from the 2008 year class (12.7-14.7 inches) and one from the 2006 year class (20.2 inches). Average growth for channel catfish in the Red River for same age channel catfish would be 8.5 inches and 12.6 inches, respectively (Prentice 1987). This suggests growth was excellent for channel catfish in Davy Crockett Reservoir. These fish were probably from the 2006 and 2008 stockings. No smaller fish were collected to indicate successful reproduction in 2009. The channel catfish population may benefit with stocking of advanced-size fingerlings, which will be considered after it has been verified there is an absence of sub-adult fish and that sampling is not being compromised by excessive aquatic vegetation.

Largemouth bass: The electrofishing CPUE of largemouth bass was 99.0/h in 2009, higher than the 82.0/h in 2005 (Figure 4). A supplemental electrofishing survey in 2006 collected 118.0/h. Size structure in previous surveys was adequate, but in 2009 no fish were collected above the slot and slot-fish numbers declined (Figure 4). The PSD-slot was the lowest since 1994, just before the 14-18 slot was implemented. Since 1997 sub-stock largemouth bass CPUEs declined until 2003 when the catch rate dropped to 13. From 2005 on, the CPUE of sub-stock bass stabilized around 20. Reasons for the decline could be harvest of sub-stock fish, low reproduction, or sampling efficiency. A creel survey in spring and fall of 2001 showed very little harvest of sub-stock fish (Hysmith and Moczygemba 2002). Low reproduction is hard to verify unless sampling efficiency is validated or improved. The high coverage of macrophytes (> 45%) may have hampered sampling. Body condition in 2009 was good (relative weight between 90 and 100) for nearly all size classes of fish, but below the body condition of largemouth bass in the 2005 sample especially for fish over 13 inches (Figure 4). Growth of largemouth bass in Davy Crockett Reservoir was average, growing to 14 inches in 3 years. Pre-slot growth was much slower (14 inches in 4 years) based on average length at capture from scale annuli (Hysmith and Moczygemba 1995). Despite a slight positive linear relationship ($r^2 = 0.0327$ [non-significant $P \leq 0.05$]) (Snedecor and Cochran 1967) of PSD_{14-18} over time, PSD_{14-18} has declined over the past three electrofishing surveys (Figure 5); the absence of above slot fish (Table 5); and very little sub-slot harvest by anglers (Hysmith and Moczygemba 2002) are symptoms that the 14-18-inch slot length limit is not effective.

Crappies: The trap net CPUE of white crappie was 4.2/nn in 2009, much lower than in 2001 (13.0/nn) or 2005 (25.8/nn). However the PSD was 86, much higher than previous years (Figure 6) with mean relative weights much improved from previous years. Growth of white crappie in Davy Crockett Reservoir was slow, taking 3-4 years to reach 10 inches ($N = 10$; range = 2 – 5 years).

Black crappie were found in low numbers in surveys from 2001 to 2009 (Figure 7) with the 2009 survey producing only two black crappie. The mean relative weights have been consistently between 80 and 90.

Fisheries management plan for Davy Crockett Reservoir, Texas

Prepared – July 2010.

ISSUE 1: The channel catfish fishery may benefit with stocking advanced channel catfish fingerlings. Stocked fish survive, grow, and contribute to the fishery (Hysmith and Moczygemba 2002). As evidenced by channel catfish moving through the system from 2001 through 2010, there is very little recruitment to legal size without supplemental stocking.

MANAGEMENT STRATEGIES

1. Verify absence of sub-stock channel catfish by sampling with hoop nets fall 2010.
2. Request advanced fingerling channel catfish (5 - 10/acre) when surplus become available from fish hatcheries.

ISSUE 2: The largemouth bass population structure has not improved over the past several surveys. The PSD₁₄₋₁₈ has declined over the past three electrofishing surveys (2005, 2006, & 2009). No fish above the slot were collected in 2009. A creel survey in 2001 (Hysmith and Moczygemba 2002) indicated anglers were keeping very few sub-slot bass and no above-slot, but 40 to 48% of the angling time was spent on largemouth bass. Apparently the 14-18 slot length limit for largemouth bass has not worked.

MANAGEMENT STRATEGY

1. Conduct a spring quarter (9 days) fixed access creel survey in 2011 to obtain current angler trends.
2. Conduct electrofishing for bass only in January, February, and March 2011 to verify population statistics.
3. Based on electrofishing and creel survey results, consider dropping the slot length limit.

ISSUE 3: Threadfin shad were established after stocking adults in 2008 and 2009. However they may have been killed during extreme cold temperatures of the winter of 2009-2010. To keep the diversity of prey available to predators, this species needs to be present in Davy Crockett Reservoir.

MANAGEMENT STRATEGY

1. Stock adult threadfin shad (1/acre) when available to ensure their presence in the fishery.

ISSUE 4: Boat ramp and boarding/fishing pier are unlighted.

MANAGEMENT STRATEGY

1. Encourage U.S. Forest Service to install and maintain lighting between existing boat ramp and boarding/fishing pier at the east campground.

ISSUE 5: 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. Cooperate with the U.S. Forest Service to post appropriate signage at access points around the reservoir.
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) existing and future inter-basin water transfers to facilitate potential invasive species responses.

SAMPLING SCHEDULE JUSTIFICATION:

The proposed sampling schedule consists of mandatory monitoring in 2013-2014 (Table 6). Additionally, electrofishing surveys will be conducted in January, February, and March, 2011; hoop netting surveys will be conducted in fall, 2010; and a creel survey to be conducted spring 2011.

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Table 1. Characteristics of Davy Crockett Reservoir, Texas.

Characteristic	Description
Year constructed	1938
Controlling authority	U.S. Forest Service
County	Fannin
Reservoir type	Offstream
Shoreline development index	2.1
Conductivity	164 umhos/cm

Table 2. Harvest regulations for Davy Crockett Reservoir.

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

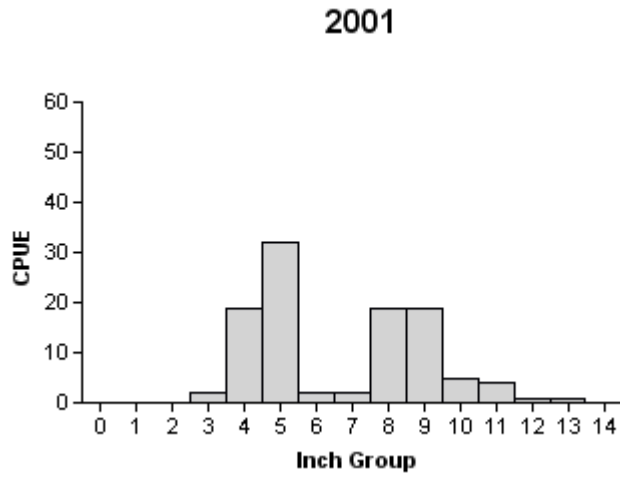
Table 3. Stocking history of Davy Crockett, Texas. Life stages are fingerlings (FGL), advanced fingerlings (AFGL), adults (ADL) and unknown (UNK). Life stages for each species are defined as having a mean length that falls within the given length range. For each year and life stage the species mean total 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.

Species	Year	Number	Life Stage	Mean TL (in)
Channel catfish	1968	48,680	AFGL	7.9
	1978	10,859	AFGL	7.9
	1991	7,500	AFGL	6.5
	1992	6,106	AFGL	5.8
	1994	1,100	ADL	11.3
	1995	1,200	AFGL	6.0
	1999	8,776	AFGL	7.8
	2006	3,559	AFGL	10.0
	2008	4,449	AFGL	8.3
	2008	38,640	FGL	3.2
	Total	130,869		
Florida largemouth bass	1997	35,000	FGL	1.3
	1998	35,004	FGL	1.1
	1999	35,281	FGL	1.9
	Total	105,285		
Green sunfish x redear sunfish	1976	260		UNK
	1978	17,785		UNK
	Total	18,045		
Largemouth bass	1976	260	UNK	UNK
	Total	260		
Threadfin shad	2008	245	ADL	3.1
	2009	800	ADL	3.9
	Total	1,045		

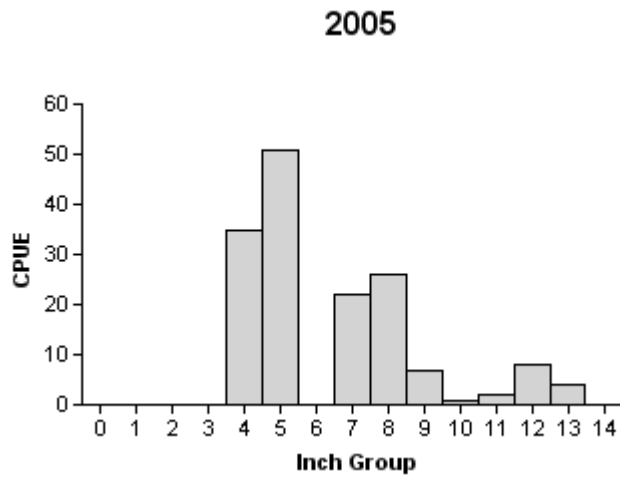
Table 4. Survey of shoreline habitat and littoral and pelagic habitat types, Davy Crockett Reservoir, Texas, 2009. A linear shoreline distance (miles) and percent of total was recorded for each shoreline habitat type found. Surface area (acres) and percent of total was determined for each type of littoral and pelagic habitat type found.

	Shoreline distance		Surface area	
	Miles	% of total	Coverage (acres)	% of total
Shoreline habitat type				
Natural shoreline	5.1	93		
Bulkhead	0.2	3.5		
Rocky shoreline	0.2	3.5		
Littoral and pelagic habitat type				
Native emergent			55.6	15.7
Native floating leaved			48.0	13.5
Native submersed			60.0	16.9
Open water			191.4	53.9

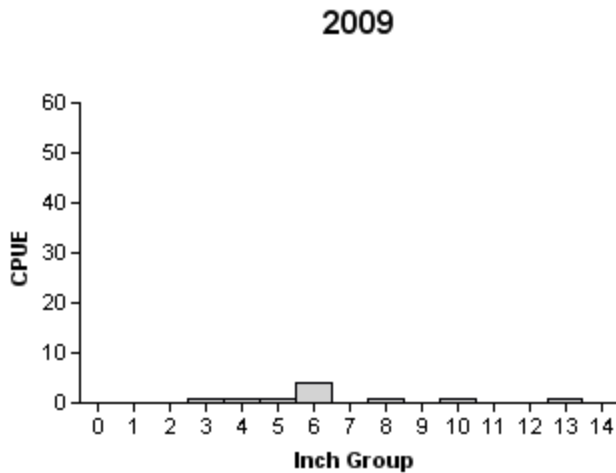
Gizzard Shad



Effort = 1.0
 Total CPUE = 106.0 (28; 106)
 PSD = 12 (6.1)
 IOV = 53.77 (6.6)



Effort = 1.0
 Total CPUE = 156.0 (30; 156)
 PSD = 20 (10.6)
 IOV = 69.23 (7.7)



Effort = 1.0
 Total CPUE = 10.0 (44; 10)
 PSD = 33 (28.4)
 IOV = 70.0 (7.7)

Figure 1. Number of gizzard shad caught per hour (CPUE) and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for fall electrofishing surveys, Davy Crockett Reservoir, Texas, 2001, 2005, and 2009.

Bluegill

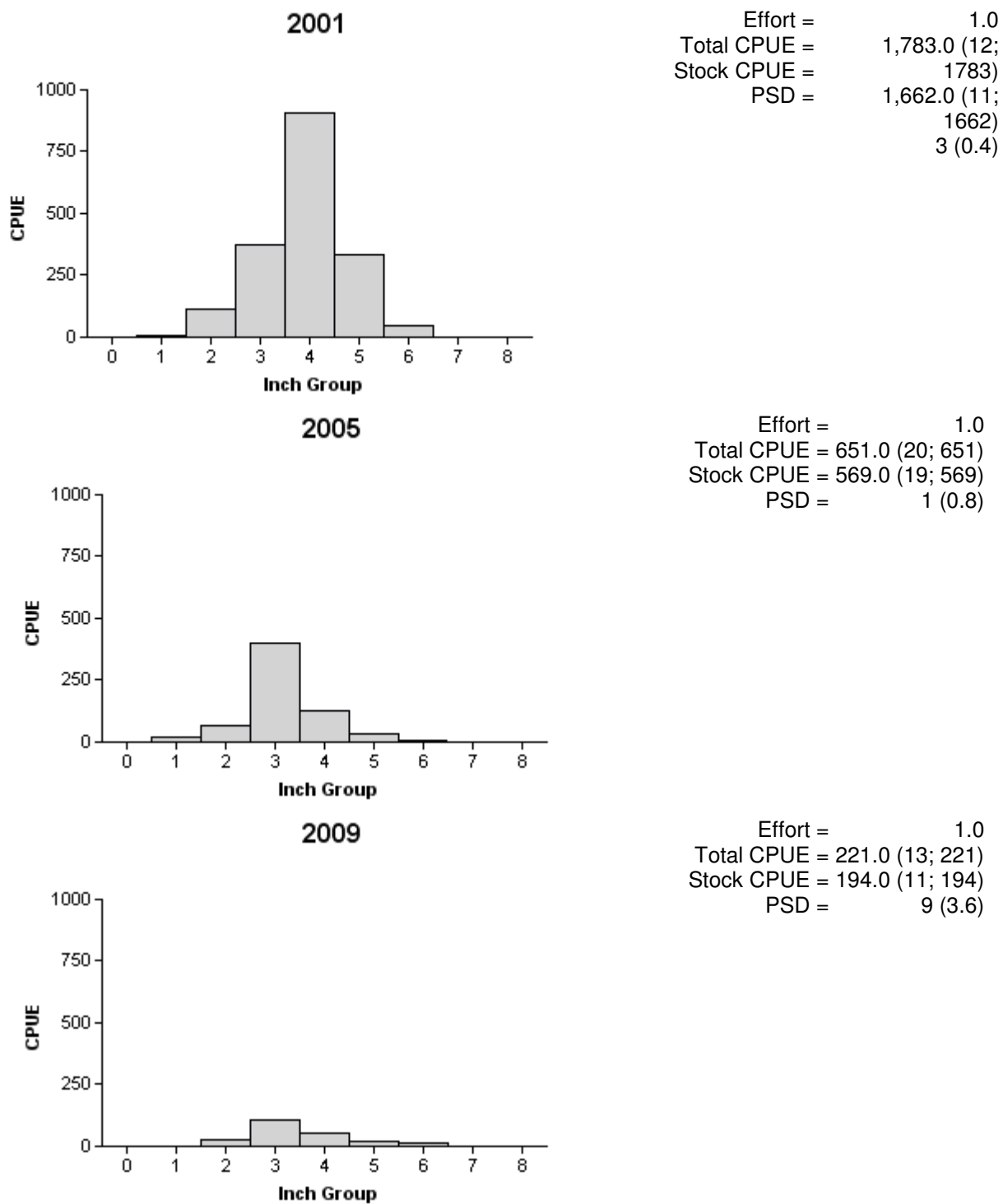
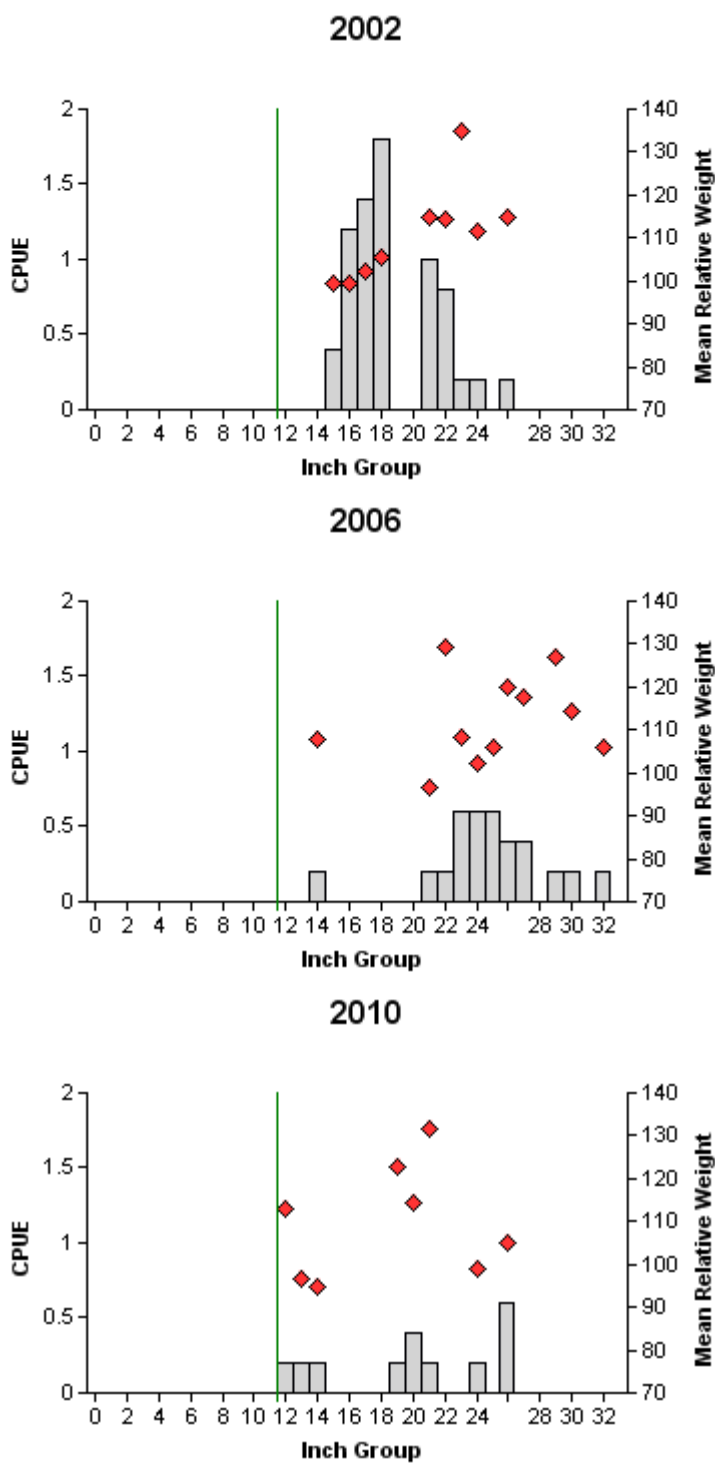


Figure 2. Number of bluegill caught per hour (CPUE) and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for fall electrofishing surveys, Davy Crockett Reservoir, Texas, 2001, 2005, and 2009.

Channel Catfish



Effort = 5.0
 Total CPUE = 7.2 (35; 36)
 Stock CPUE = 7.2 (35; 36)
 PSD = 94 (2.7)

Effort = 5.0
 Total CPUE = 3.8 (42; 19)
 Stock CPUE = 3.8 (42; 19)
 PSD = 95 (3.3)

Effort = 5.0
 Total CPUE = 2.2 (39; 11)
 Stock CPUE = 2.2 (39; 11)
 PSD = 73 (9.2)

Figure 3. 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, Davy Crockett Reservoir, Texas, 2002, 2006, and 2010. Vertical lines represent length limit at time of collection.

Largemouth Bass

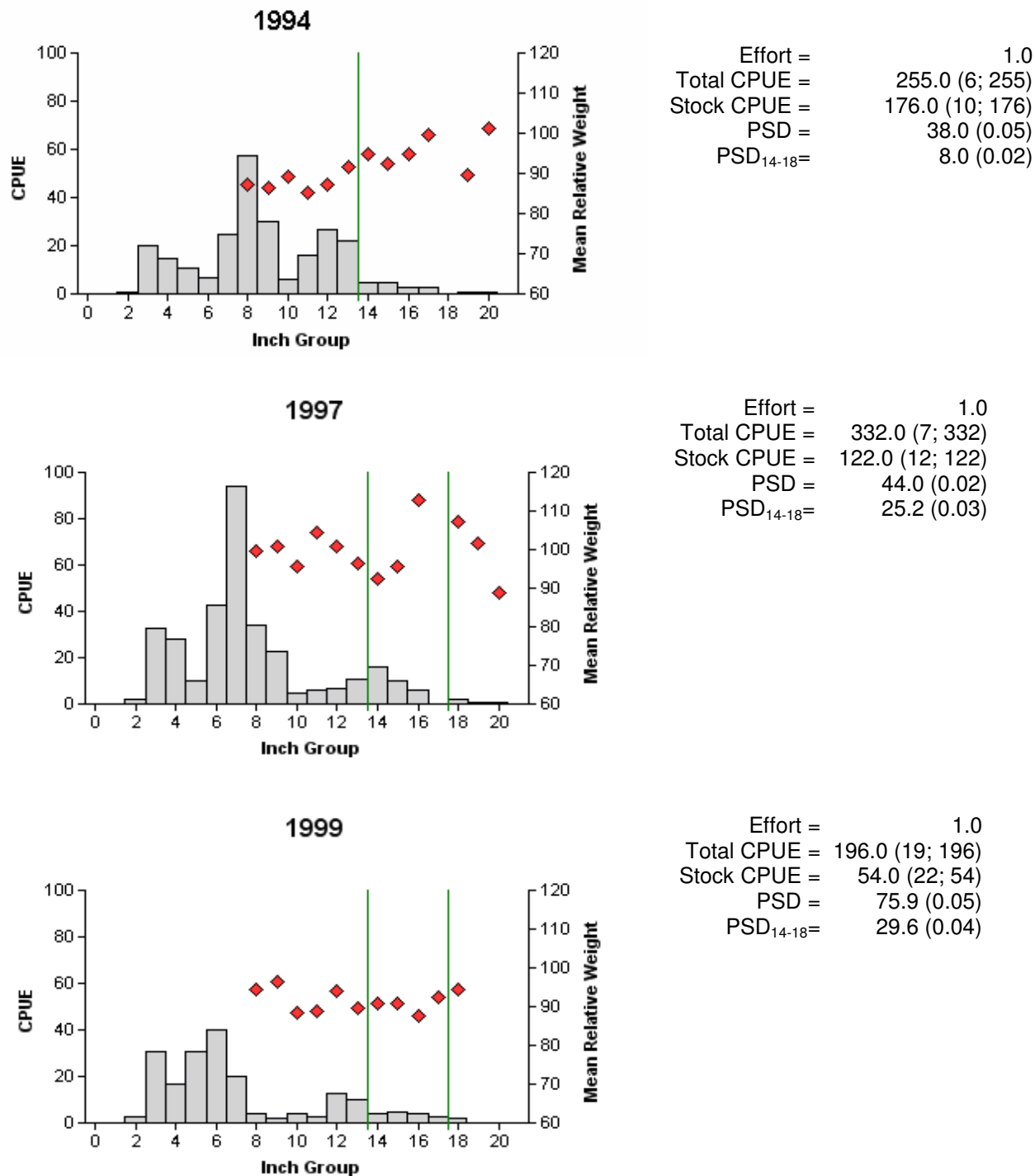


Figure 4. Number of largemouth bass caught per hour (CPUE, bars), mean relative weight (diamonds), and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for fall electrofishing surveys, Davy Crockett Reservoir, Texas, 1994, 1997, 1999. Vertical lines represent length limit at time of collection.

Largemouth Bass

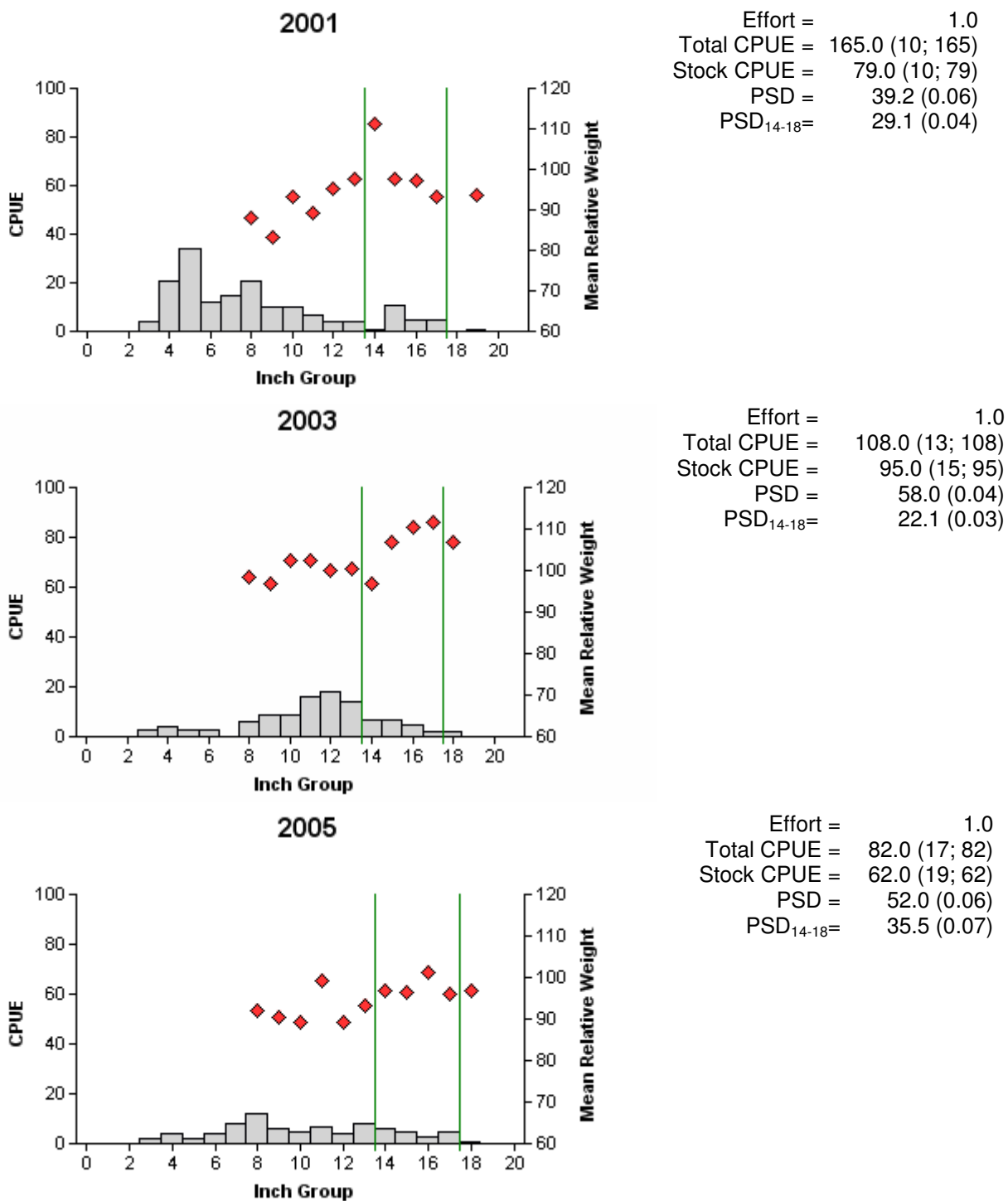


Figure 4 continued. Number of largemouth bass caught per hour (CPUE, bars), mean relative weight (diamonds), and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for fall electrofishing surveys, Davy Crockett Reservoir, Texas, 2001, 2003, and 2005. Vertical lines represent slot length limit at time of collection.

Largemouth Bass

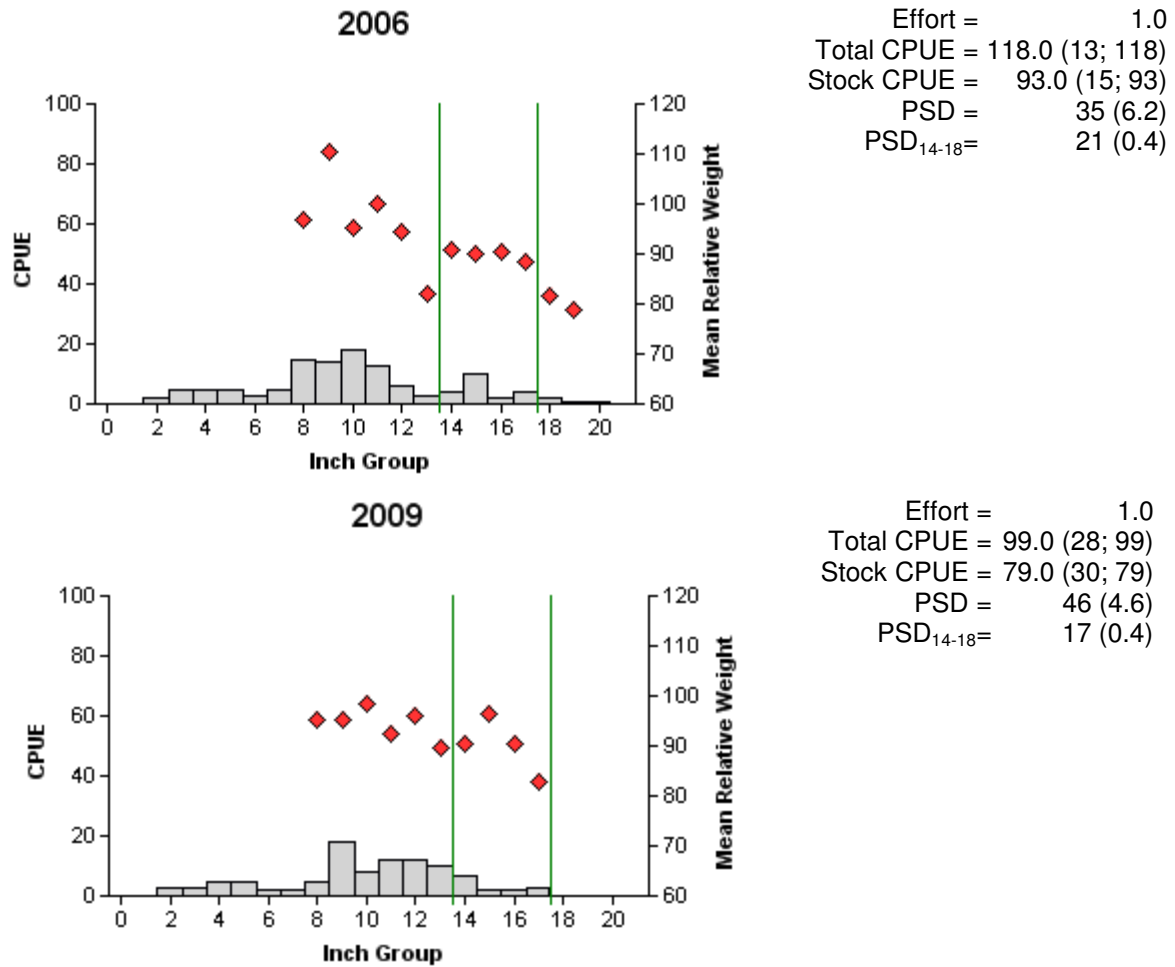


Figure 4 continued. Number of largemouth bass caught per hour (CPUE, bars), mean relative weight (diamonds), and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for fall electrofishing surveys, Davy Crockett Reservoir, Texas, 2006 and 2009. Vertical lines represent slot length limit at time of collection.

Table 5. Number of largemouth bass caught per hour (CPUE) for selected size groups and selected population indices for fall electrofishing surveys, Davy Crockett Reservoir, Texas 1994, 1997, 1999, 2001, 2003, 2005, 2006, and 2009.

Year	CPUE _{stock}	PSD ₁₄₋₁₈	CPUE ₁₄₋₁₈	CPUE _{>18}
1994	176	8.0	16	2
1997	122	25.2	32	4
1999	54	29.6	16	2
2001	79	29.1	22	1
2003	95	22.1	21	2
2005	62	35.5	19	1
2006	93	21.0	20	4
2009	79	17.0	14	0

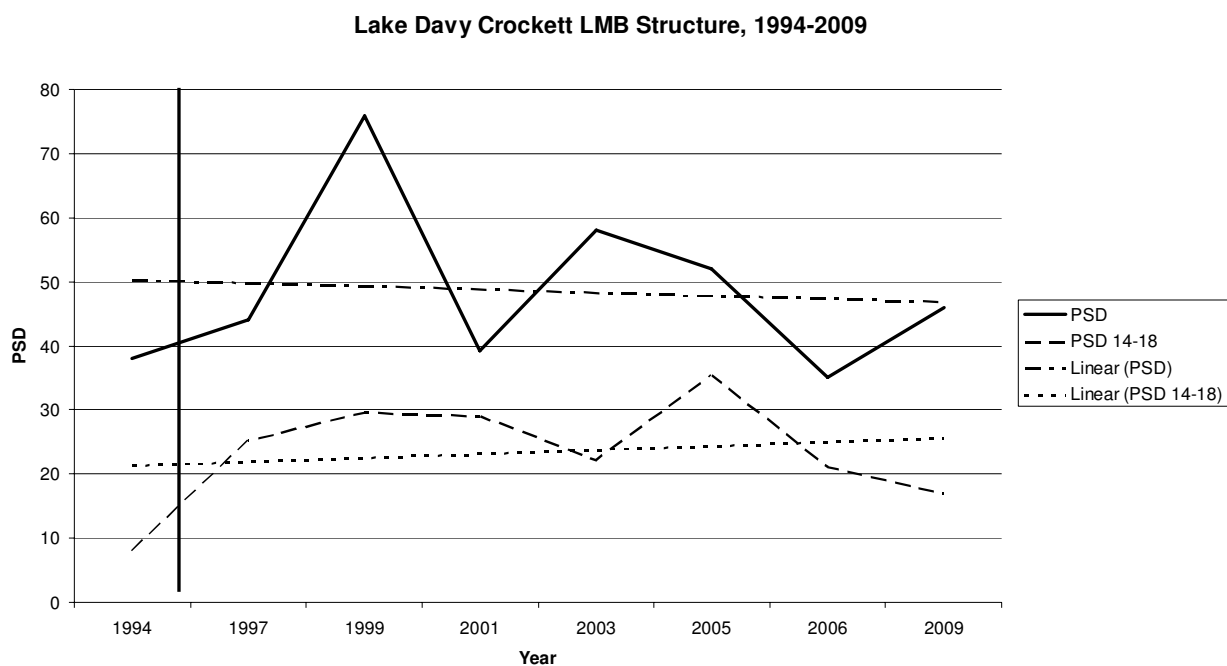


Figure 5. Population indices of largemouth bass for fall electrofishing surveys, Davy Crockett Reservoir, Texas, 1994, 1997, 1999, 2001, 2003, 2005, 2006, and 2009. Vertical line represents implementation of 14-18 inch slot limit. $r^2 = 0.0327$ (non-significant $P \leq 0.05$) for linear PSD₁₄₋₁₈. $r^2 = 0.0083$ (non-significant $P \leq 0.05$) for linear PSD.

White Crappie

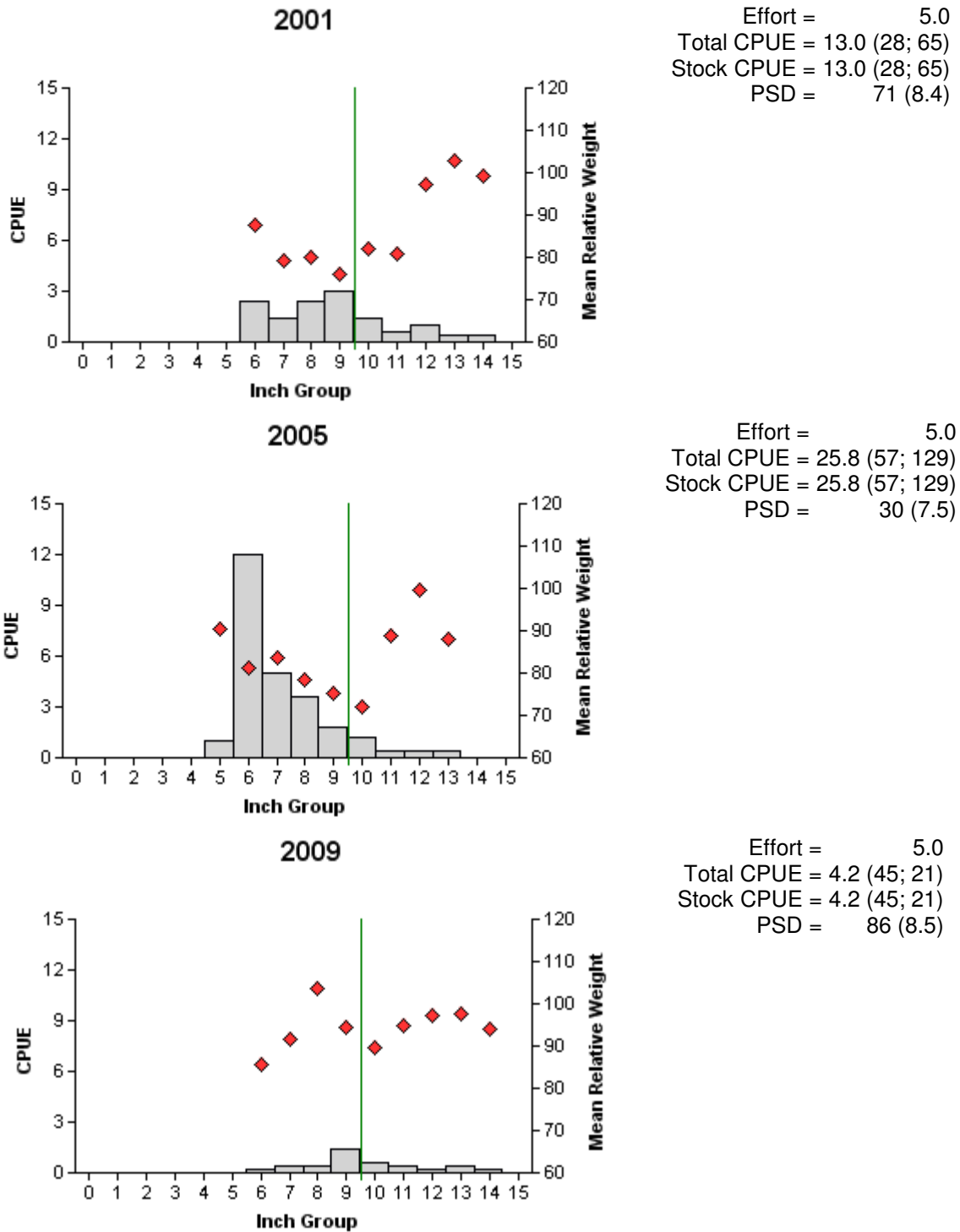


Figure 6. Number of white crappie caught per net night (CPUE, bars), mean relative weight (diamonds), and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for fall trap netting surveys, Davy Crockett Reservoir, Texas, 2001, 2005, and 2009. Vertical lines represent length limit at time of collection.

Black Crappie

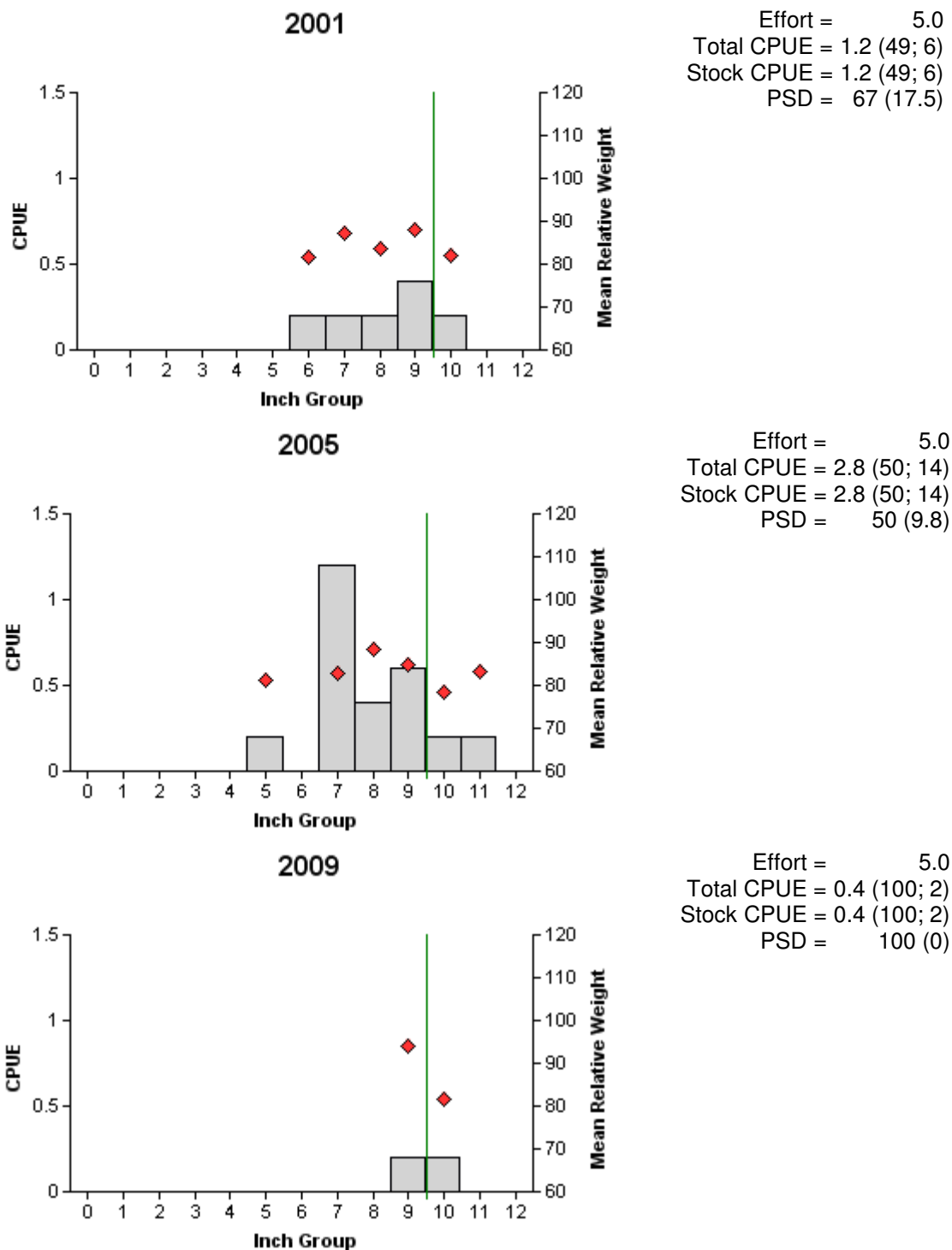


Figure 7. Number of black crappie caught per net night (CPUE, bars), mean relative weight (diamonds), and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for fall trap netting surveys, Davy Crockett Reservoir, Texas, 2001, 2005, and 2009. Vertical lines represent length limit at time of collection.

Table 6. Proposed sampling schedule for Davy Crockett Reservoir, Texas. Electrofishing and trap netting surveys are conducted in the fall, while gill netting surveys are conducted during the following spring. Standard survey denoted by S. Additionally (A), electrofishing surveys will be conducted in January, February, and March, 2011; hoop netting surveys will be conducted in fall, 2010; and a creel survey to be conducted spring 2011.

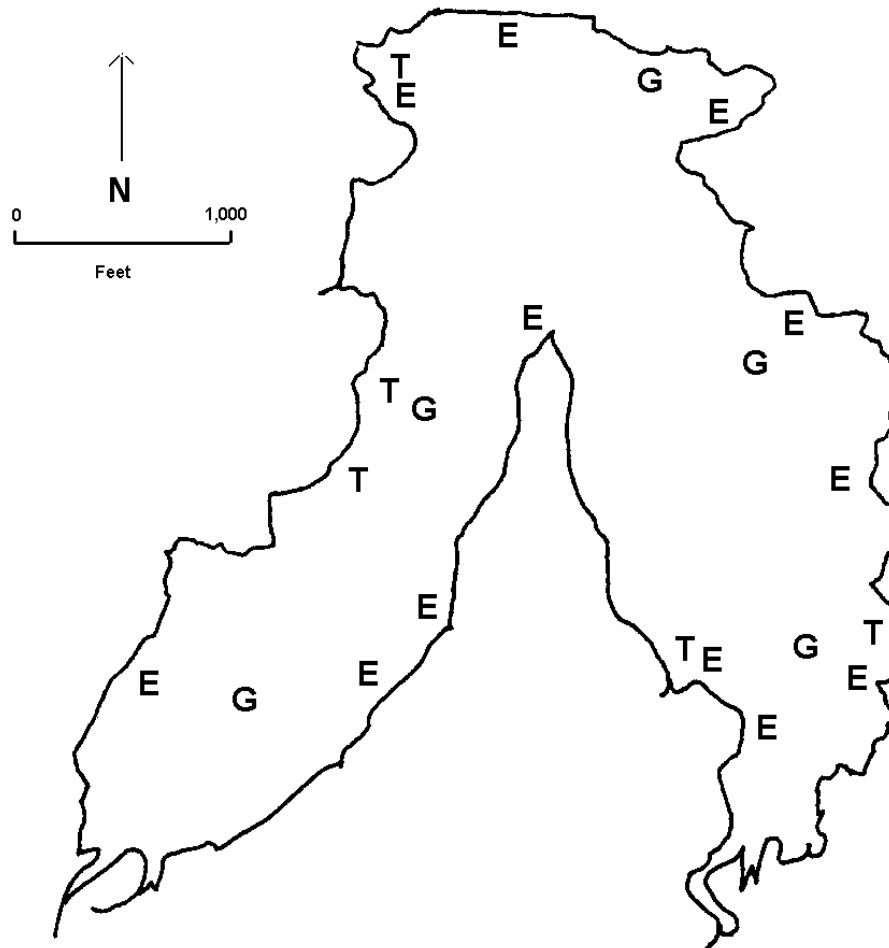
Survey Year	Electrofisher	Trap Net	Hoop Net	Gill Net	Creel Survey	Report
Fall 2010-Spring 2011	A		A		A	
Fall 2011-Spring 2012						
Fall 2012-Spring 2013						
Fall 2013-Spring 2014	S	S		S		S

APPENDIX A

Number (N) and catch rate (CPUE) of all target species collected from all gear types from Davy Crockett Reservoir, Texas, 2009-2010.

Species	Gill Netting		Trap Netting		Electrofishing	
	N	CPUE	N	CPUE	N	CPUE
Gizzard shad					10	10.0
Threadfin shad					4,535	4,535.0
Channel catfish	11	2.2				
Green sunfish					3	3.0
Warmouth					2	2.0
Bluegill					221	221.0
Redear sunfish					18	18.0
Largemouth bass					99	99.0
White crappie			21	4.2		
Black crappie			2	0.4		

APPENDIX B



Location of sampling sites, Davy Crockett Reservoir, Texas, 2009-2010. Trap netting, gill netting, and electrofishing sampling stations are indicated by T, G, and E, respectively. Water level was at conservation during all sampling.

APPENDIX C

Historical catch rates of targeted species by gear type for Davy Crockett Reservoir, Texas, 1994, 1997, 1999_a, 2001, 2002, 2003_a, 2005, 2006_a, 2009, and 2010.

Gear	Species	Year										Avg.
		1994	1997	1999 _a	2001	2002	2003 _a	2005	2006 _a	2009	2010	
Gill Netting (fish/net night)	Channel catfish	16.8	9.4			7.2			3.8		2.2	7.9
Electrofishing (fish/hour)	Gizzard shad	68.0	112.0		106.0			156.0		10.0		90.4
	Threadfin shad									4,535.0		4,535.0
	Green sunfish	3.0	1.0		5.0			9.0		3.0		4.2
	Warmouth	76.0	176.0		70.0			5.0		2.0		65.8
	Bluegill	502.0	2,141.0		1,783.0			651.0		221.0		1059.6
	Redear sunfish	31.0	128.0		109.0			31.0		18.0		63.4
	Largemouth bass	255.0	332.0	196.0	165.0		108.0	82.0	118.0	99.0		169.4
Trap Netting (fish/net night)	White crappie	25.6	23.0		13.0			25.8		4.2		18.3
	Black crappie	5.2	12.6		1.2			2.8		0.4		4.4

_a Largemouth bass sampled only.