

PERFORMANCE REPORT

As Required by

FEDERAL AID IN SPORT FISH RESTORATION ACT

TEXAS

FEDERAL AID PROJECT F-221-M-3

INLAND FISHERIES DIVISION MONITORING AND MANAGEMENT PROGRAM

2012 Fisheries Management Survey Report

Lake Wright Patman

Prepared by:

Timothy J. Bister, District Management Supervisor
and
Lynn D. Wright, Assistant District Management Supervisor

Inland Fisheries Division
District 3-A, Marshall, Texas



Carter Smith
Executive Director

Gary Saul
Director, Inland Fisheries

July 31, 2013

TABLE OF CONTENTS

Survey and management summary	2
Introduction	3
Reservoir description.....	3
Angler Access	3
Management history.....	3
Methods	4
Results and discussion	4
Fisheries management plan	6
Literature cited.....	8
Figures and Tables	9-25
Water Level (Figure 1)	9
Reservoir Characteristics (Table 1)	9
Boat Ramp Characteristics (Table 2)	10
Harvest Regulations (Table 3)	11
Stocking History (Table 4).....	12
Structural Habitat Survey (Table 5)	13
Aquatic Vegetation Survey (Table 6)	13
Gizzard Shad (Figure 2).....	14
Sunfishes (Figures 3-4).....	15
Catfish (Figures 5-6).....	17
White Bass (Figure 7).....	19
Largemouth Bass (Figures 8-9; Table 7)	20
Crappie (Figures 10-11)	23
Proposed Sampling Schedule (Table 8).....	25
Appendix A	
Catch Rates for all Species from all Gear Types	26
Appendix B	
Map of 2012-2013 Sampling Locations.....	27

SURVEY AND MANAGEMENT SUMMARY

Fish populations in Lake Wright Patman were surveyed in 2012 using electrofishing and trap netting and in 2013 using gill netting. Historical data are presented with the 2012-2013 data for comparisons. This report summarizes the results of the surveys and contains a management plan for the reservoir based on those findings.

- **Reservoir description:** Lake Wright Patman is a 20,143-acre impoundment located on the Sulphur River. The reservoir is located in Bowie and Cass Counties approximately 10 miles southwest of Texarkana.
- **Management history:** Important sport fish include Blue and Channel Catfishes, White Bass, Largemouth Bass, and crappie. All sport fish at Lake Wright Patman have historically been managed with statewide harvest regulations. Florida Largemouth Bass have been stocked in this reservoir to improve the quality of the largemouth bass fishery. Hydrilla, waterhyacinth, and giant salvinia were discovered in the reservoir in 2000, 2005, and 2012 respectively.
- **Fish community**
 - **Prey species:** Threadfin Shad were present in the reservoir. There were moderate numbers of Gizzard Shad available as prey to most sport fish. Sunfish were also available as prey with Bluegill being the most abundant.
 - **Catfishes:** Blue and Channel Catfish populations offer many fish above legal length and provide excellent angling opportunities. Flathead Catfish are also known to exist in the reservoir.
 - **Temperate basses:** White Bass were present in the reservoir. Relative abundance of White Bass is variable, but there are opportunities for anglers to catch fish. Palmetto Bass stockings were discontinued in 2002 and no fish were collected during the review period.
 - **Largemouth Bass:** The Largemouth Bass population can be characterized as consistently low in abundance and exhibiting slow growth.
 - **Crappie:** Both White and Black Crappie were present in the reservoir with White Crappie being the dominant species. Crappie species were abundant and provide excellent angling opportunities. Crappie species have been the most popular sportfish at Lake Wright Patman in past angler surveys.

Management strategies: Conduct general monitoring with electrofishing, trap netting, gill netting, and angler access surveying in 2016-2017. Surveys of invasive aquatic vegetation will be conducted annually beginning in 2013. Conduct an angler creel survey from June 2016 through May 2017 to estimate angling effort and harvest. All sport fish will continue to be managed under statewide harvest regulations.

INTRODUCTION

This document is a summary of fisheries data collected from Lake Wright Patman from June 2012 through May 2013. 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 fishes was collected, this report deals primarily with major sport fishes and important prey species. Historical data are presented with the 2012-2013 data for comparison.

Reservoir Description

Lake Wright Patman is a 20,143-acre impoundment constructed in 1956 on the Sulphur River. It is located in Bowie and Cass Counties approximately 10 miles southwest of Texarkana. The controlling authority is the U.S. Army Corps of Engineers (USACE). Primary water uses are flood control, municipal and industrial water supply, and public recreation. It has a drainage area of approximately 3,443 square miles and a shoreline length of 170 miles. USACE manipulates downstream flow releases in an attempt to manage for a summer conservation pool of 227.5 msl and a winter conservation pool of 220.6 msl. Average annual water fluctuation is usually 7-8 feet (Figure 1). Other descriptive characteristics for Lake Wright Patman are in Table 1.

Angler Access

Lake Wright Patman has 14 public boat ramps available to anglers. There are no issues currently identified at boat ramps and additional data related to elevation at end of ramp will be collected during future visits to the reservoir. Additional boat ramp characteristics are in Table 2. Bank fishing access is limited.

Management History

Previous management strategies and actions: Management strategies and actions from the previous survey report (Brice and Bister 2009) included:

1. Monitor water hyacinth.

Action:

1. Water hyacinth has been monitored annually.

2. Promote the Blue Catfish and White Bass fisheries.

Action:

1. Ark-La-Tex Sportsman television show was filmed about gill netting survey to inform anglers about these fisheries.

Harvest regulation history: All sport fishes in Lake Wright Patman are currently managed with statewide regulations (Table 3).

Stocking history: Florida Largemouth Bass (FLMB) were introduced into Lake Wright Patman in 1978. Additional stockings have been conducted periodically, most recently in 2008, in an attempt to increase the frequency of FLMB alleles. Paddlefish were stocked in 1992 and 1994 as part of a restoration project. Palmetto Bass were stocked annually from 1994-1999 and in 2002, but stockings were discontinued in 2002 so these fish are no longer abundant enough to support a fishery. Walleye stockings in 1974 and 1975 were unsuccessful in establishing a viable population. The complete stocking history is in Table 4.

Vegetation/habitat management history: Historically, Lake Wright Patman has been characterized as having small quantities of aquatic vegetation. Relatively turbid water and seasonal water level fluctuations are major factors that limit plant growth. Hydrilla is present in the lake and was discovered in 2000 (Ryan and Brice 2001). In 2004, hydrilla had increased to 5 acres (Brice 2005) and by 2008 it increased to an area of 102 acres (Brice and Bister 2009). During the 2012 survey hydrilla coverage was estimated at 2 acres. In 2006, trace amounts of waterhyacinth were found adjacent to a popular marina in the mid-lake

area. In 2007, an additional area in the upper end of the reservoir was found to be infested with waterhyacinth. During the 2008 vegetation survey waterhyacinth was found in both of these areas (Brice and Bister 2009). Most recently, waterhyacinth has shown some expansion in coverage and the USACE is investigating management options. Giant salvinia was discovered in fall 2012 and will require monitoring and management. Native floating plants, primarily American lotus, dominated the aquatic plant community accounting for 1.1% of reservoir surface area.

Water transfer: No interbasin transfers are known to exist.

METHODS

Fishes were collected by electrofishing (2 hours at 24, 5-min stations), gill netting (15 net nights at 15 stations), and trap 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 and trap 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 2011).

Sampling statistics (CPUE for various length categories), structural indices [Proportional Size Distribution (PSD), terminology modified 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 calculated for gizzard shad (DiCenzo et al. 1996). Standard error (SE) was calculated for structural indices and IOV. Relative standard error (RSE = 100 X SE of the estimate/estimate) was calculated for CPUE statistics. Ages were determined using otoliths for Largemouth Bass (27 fish, 9.1 to 16.3 inches), White Crappie (13 fish, 9.2 to 10.9 inches), Black Crappie (9 fish, 9.1 to 10.9 inches), and White Bass (13 fish, 9.1 to 10.7 inches).

Genetic analysis of Largemouth Bass was conducted according to the Fishery Assessment Procedures (TPWD, Inland Fisheries Division, unpublished manual revised 2011). Micro-satellite DNA analysis was used to determine genetic composition of individual fish from 2005 through 2012 and by electrophoresis for previous years.

Source for water level data was the United States Geological Survey (USGS) website.

RESULTS AND DISCUSSION

Habitat: Structural habitat consisted primarily of inundated timber, flooded brush, and riprap (Brice 2005). Less than 2% of the reservoir surface area was occupied by aquatic vegetation (Table 6). Native species observed included arrowhead, American lotus, water primrose, pondweed, and coontail. Waterhyacinth coverage has increased from a trace amount in 2008 to 61 acres in 2012. Hydrilla occupied 2 acres during the 2012 survey. Giant salvinia was not observed during the aquatic vegetation survey, but it was found at the Malden Lake boat ramp during a subsequent trip to the reservoir in fall 2012. Herbicide treatment was conducted, but the status of the plant is unknown at this time. Additional information can be found in Table 6.

Prey species: Gizzard Shad, Threadfin Shad, and several sunfish species were present, indicating a diversity of forage fishes. Electrofishing catch rates of Gizzard Shad and Bluegill were 299.0/h and 127.0/h, respectively. The Index of Vulnerability (IOV) indicated the majority of Gizzard Shad (92%) were available to most predators, which was a substantial increase from the 2008 survey (Figure 2). Electrofishing catch rate of Gizzard Shad in 2012 was lower than 2006 (416.5/h) but similar to 2008 (289.0/h) (Figure 2). Threadfin Shad were caught at a similar rate (304.5/h) to Gizzard Shad. Bluegill CPUE in 2012 was much lower than in 2008 (308.5/h), but similar to 2006 (151.5/h) (Figure 3).

Catfishes: Blue Catfish and Channel Catfish were both present in Lake Wright Patman and they provide a popular fishery which was responsible for 31% of directed angler effort in an earlier creel survey (Brice and Bister 2009). The Blue Catfish population shows evidence of increased abundance as shown by higher CPUE in 2013 gill-netting (3.4/nn) versus 2009 (2.6/nn) and 2005 (0.1/nn) (Figure 5). Blue Catfish collected in 2013 ranged from 4 to 34 inches in length. High numbers of legal-length fish were available for angler harvest. Blue Catfish body condition was good with mean W_r for most inch groups exceeding 90. Ryan and Brice (2001) reported that Blue Catfish in Wright Patman attain legal-size (≥ 12 inches) during their second or third growing season. CPUE of Channel Catfish (22.6/nn) in 2013 was higher than that of Blue Catfish and highest of any year in the review (Figure 6). Channel Catfish body condition was moderately high with mean W_r for most inch groups exceeding 90. Channel Catfish growth has been moderately slow, with fish attaining legal-size (≥ 12 inches) during their fourth growing season (Ryan and Brice 2001). No Flathead Catfish were collected during the 2013 gill-netting survey, but they have been collected in low numbers in previous surveys (Brice 2005).

White Bass: The gill-net CPUE of White Bass in 2013 was 6.3/nn, which was higher than 2009 (2.1/nn) but lower than 2005 (11.5/nn) (Figure 7). Body condition of White Bass was moderately high with mean W_r for most inch groups exceeding 90 (Figure 7). White Bass up to 17 inches in length were collected in gill nets in 2013. White Bass growth was relatively fast. The average age of White Bass at 10 inches (9.1 to 10.7 inches) was 1.7 years (N = 13; range 1 – 4 years). Previous surveys (Ryan and Brice 2001) have shown faster growth with fish attaining legal-size (≥ 10 inches) by age one.

Largemouth Bass: The electrofishing catch rate of Largemouth Bass in 2012 (54.5/h) was more than in 2008 (43.5/h) and less than 2006 (64.0/h) (Figure 8). CPUE of stock-sized fish (≥ 8 inches) and legal-sized fish (≥ 14 inches) have been relatively consistent in recent surveys. Body condition was generally good with most inch groups having relative weights greater than 100. Largemouth Bass up to 19 inches were collected during 2012 electrofishing. Directed angler effort for Largemouth Bass in a creel survey conducted from 2008-2009 (Brice and Bister 2009) represented 24% of total effort and was the lake's third most sought species group. Genetic analysis of Largemouth Bass in 2012 indicated 15.0% FLMB alleles (Table 7), which was higher than the range observed from 1991 to 2006 (0.0 – 9.2). No pure Florida Largemouth Bass were collected in the 2012 sample (Table 7). The majority (57%) of fish sampled were intergrades between FLMB and Northern Largemouth Bass (NLMB), and the remainder were pure NLMB (43%). It was difficult to obtain an adequate sample of fish for age-and-growth analysis to estimate the average age of fish at 14 inches, but individual fish were aged from 9.1 to 16.3 inches (Figure 9). Also, the average length of age-1 largemouth bass was 11.5 inches (N = 18; range 9.1 – 14.3 inches).

Crappie: The crappie fishery was responsible for the highest directed fishing pressure of any species group (41.4% of total effort) according to a previous creel survey (Brice and Bister 2009). Trap-net CPUEs for White and Black Crappie in 2012 were 19.4/nn and 2.1/nn, respectively (Figures 10 and 11) and the majority of fish captured were shorter than the minimum size limit (10 inches). Body condition was good for both crappie species with all inch groups having mean W_r values greater than 100. White Crappie grew faster than Black Crappie, with fish reaching 10 inches (9.2 to 10.9 inches) in 1.15 years (N = 13; range 1 – 3 years) compared with Black Crappie which took 2.89 years (N = 9; range 1 – 4 years) to reach the same average size (9.1 to 10.9 inches).

Fisheries management plan for Lake Wright Patman, Texas

Prepared – July 2013.

ISSUE 1: Waterhyacinth coverage in the upper end of the reservoir has begun to expand. Giant salvinia was discovered in the upper end of the reservoir in fall 2012.

MANAGEMENT STRATEGIES

1. Conduct supplemental annual surveys to monitor coverage of giant salvinia and waterhyacinth.
2. Provide USACE with results of invasive aquatic vegetation surveys and provide technical guidance for any treatment plans.

ISSUE 2: The White Bass and Blue Catfish populations are underutilized at Lake Wright Patman. Gill-netting surveys indicate harvestable-size fish are abundant and available to anglers. However, during the 2008-2009 creel survey, no directed effort was expended towards White Bass and no Blue Catfish harvest was observed. White Bass and Blue Catfish are desirable sport fish at other area reservoirs and should be promoted at Lake Wright Patman.

MANAGEMENT STRATEGIES

1. Provide information to print and broadcast media promoting the White Bass and Blue Catfish populations at Lake Wright Patman. Educate anglers of successful angling techniques for both fisheries.
2. Promote fishing for White Bass and Blue Catfish at Atlanta State Park located on Lake Wright Patman. Post signage and ask park rangers to promote these underutilized fisheries.
3. Contact Ark-La-Tex Sportsman Outdoor Show (Texarkana) to film separate shows showcasing White Bass and Blue Catfish at Lake Wright Patman.
4. Provide fisheries presentations to angling groups promoting the fish community of Lake Wright Patman.

ISSUE 3: An invasive Asian carp species, the Bighead Carp (*Hypophthalmichthys nobilis*), is present in the Sulphur River downstream of Lake Wright Patman. The dam is a barrier to their upstream migration, but anglers must be informed of the threat of their expansion. A new regulation was enacted in 2012 to prevent the spread of Bighead and Silver Carp. The new rule made it illegal to transport live non-game fishes from the Sulphur River downstream of the Wright Patman dam along with identical restrictions at two other areas in the state where Asian carp are also present.

MANAGEMENT STRATEGIES

1. Maintain signage at spillway to inform anglers of the threat of Asian (Bighead and Silver) carp.
2. Work with the USACE to ensure future actions at the spillway do not result in the possibility of the movement of Asian carp upstream of the dam.

ISSUE 4: Little is known about the Flathead Catfish population in Lake Wright Patman. Handfishing became a legal method to harvest catfish in Texas in 2012, and Wright Patman is believed to be a popular destination for handfishers. There are little data available to ascertain the impact handfishing may have on Flathead Catfish populations.

MANAGEMENT STRATEGY

1. Conduct low-pulse electrofishing survey during 2014 to collect Flathead Catfish baseline population size structure data.

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 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 and other invasive vegetation species can form dense mats, interfering with recreational activities like fishing, boating, skiing and swimming. The financial costs of controlling 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 controlling authority to post appropriate signage at access points around the reservoir.
2. Contact and educate marina owners about invasive species, and provide them with posters and literature so that they can educate their customers.
3. Educate the public about invasive species through the use of media and the internet.
4. Discuss invasive species when presenting to constituent and user groups.
5. Document existing and future inter-basin water transfers to facilitate potential invasive species responses.

SAMPLING SCHEDULE JUSTIFICATION:

The proposed sampling schedule includes aquatic vegetation surveys, and required electrofishing, trap netting, gill netting, and angler access surveys in 2016/2017 (Table 8). Annual aquatic vegetation surveys are necessary to monitor giant salvinia, hydrilla, and waterhyacinth. A roving angler creel survey will be conducted June 2016 through May 2017.

LITERATURE CITED

- Anderson, R. O., and R. M. Neumann. 1996. Length, weight, and associated structural indices. Pages 447-482 in B. R. Murphy and D. W. Willis, editors. Fisheries techniques, 2nd edition. American Fisheries Society, Bethesda, Maryland.
- Brice, M. W. 2005. Statewide freshwater fisheries monitoring and management program survey report for Lake Wright Patman, 2004. Texas Parks and Wildlife Department, Federal Aid Report F-30-R, Austin.
- Brice, M. W., and T. J. Bister. 2009. Statewide freshwater fisheries monitoring and management program survey report for Lake Wright Patman, 2008. Texas Parks and Wildlife Department, Federal Aid Report F-30-R, Austin.
- DiCenzo, V. J., M. J. Maceina, and M. R. Stimert. 1996. Relations between reservoir trophic state and gizzard shad population characteristics in Alabama reservoirs. *North American Journal of Fisheries Management* 16:888-895.
- Guy, C. S., R. M. Neuman, D. W. Willis, and R. O. Anderson. 2007. Proportional size distribution (PSD): a further refinement of population size structure index terminology. *Fisheries* 32(7): 348.
- Ryan, M. J., and M. W. Brice. 2001. Statewide freshwater fisheries monitoring and management program survey report for Lake Wright Patman, 2000. Texas Parks and Wildlife Department, Federal Aid Report F-30-R, Austin.

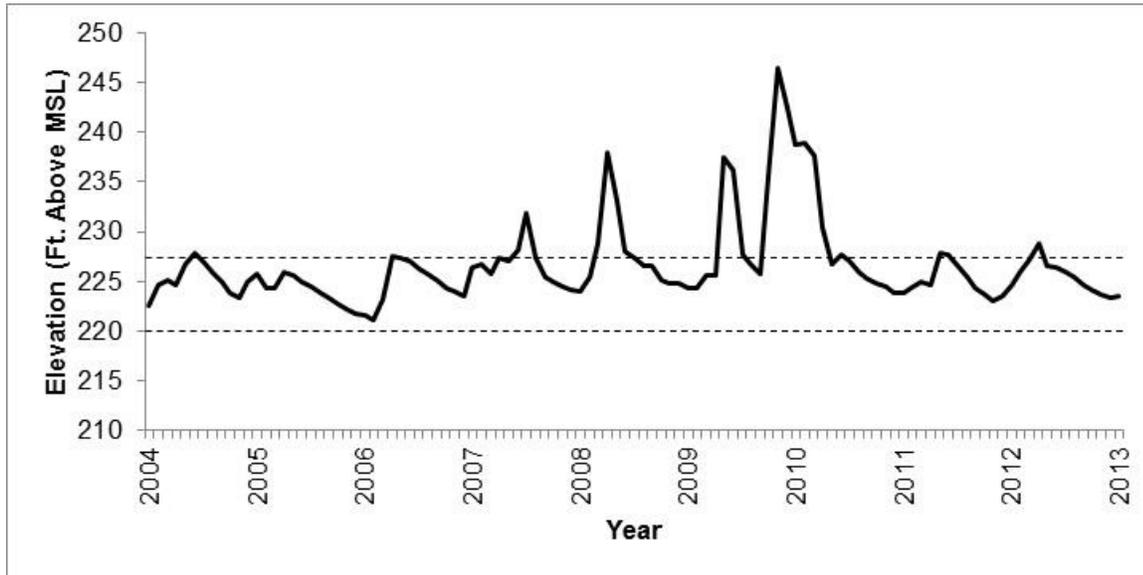


Figure 1. Monthly water level elevations in feet above mean sea level (ft-msl) recorded for Lake Wright Patman, Texas. Horizontal dashed-lines denote conservation pool level (220.60 ft-msl) and summer pool level (227.5 ft-msl).

Table 1. Characteristics of Lake Wright Patman, Texas.

Characteristic	Description
Year constructed	1956
Controlling authority	U.S. Army Corps of Engineers
Counties	Bowie and Cass
Reservoir type	Mainstream
Shoreline Development Index (SDI)	8.5
Conductivity	190 umhos/cm

Table 2. Boat ramp characteristics for Lake Wright Patman, Texas, August, 2012. Reservoir elevation at time of survey was 225 ft-msl.

Boat ramp	Latitude Longitude (dd)	Public	Parking capacity (N)	Condition
Malden Lake	33.26437 -94.34804	Y	8	Excellent, no access issues
Herron Creek	33.28753 -94.32867	Y	10	Excellent, no access issues
Berry Farm Park	33.26086 -94.26554	Y	10	Excellent, no access issues
Kelly Creek Marina	33.28784 -94.25136	Y	10	Excellent, no access issues
Big Creek Marina	33.31562 -94.24062	Y	10	Excellent, no access issues
Clear Springs	33.35441 -94.19714	Y	16	Excellent, no access issues
North Shores	33.35048 -94.17752	Y	35	Excellent, no access issues
Intake Hill	33.32087 -94.16454	Y	19	Excellent, no access issues
Cass County Park	33.26502 -94.19272	Y	5	Excellent, no access issues
Rocky Point	33.28580 -94.17209	Y	10	Excellent, no access issues
Piney Point	33.29993 -94.17267	Y	50	Excellent, no access issues
Overcup Landing	33.23769 -94.36632	Y	10	Excellent, no access issues
Jackson Creek	33.22491 -94.30289	Y	10	Excellent, no access issues
Atlanta State Park	33.23462 -94.25736	Y	30	Excellent, no access issues

Table 3. Harvest regulations for Lake Wright Patman, Texas.

Species	Bag limit	Length limit
Catfish: Channel and Blue Catfish, their hybrids and subspecies	25 (in any combination)	12-inch minimum
Catfish, Flathead	5	18-inch minimum
Bass, White	25	10-inch minimum
Bass, Palmetto	5	18-inch minimum
Bass, Largemouth	5 ^a	14-inch minimum
Bass: Spotted	5 ^a	None
Crappie: White and Black Crappie, their hybrids and subspecies	25 (in any combination)	10-inch minimum

^a Daily bag for largemouth bass, spotted bass = 5 fish in any combination.

Table 4. Stocking history of Wright Patman, Texas. FGL = fingerling; AFGL = advanced fingerling; ADL = adults.

Species	Year	Number	Life Stage
Florida Largemouth Bass	1978	295,460	FGL
	1991	80,745	FGL
	1991	419,682	FRY
	1992	499,718	FGL
	1994	400,854	FGL
	1994	106,524	FRY
	2002	500,228	FGL
	2003	500,240	FGL
	2008	503,509	FGL
	Total	3,306,960	
Paddlefish	1992	11,991	
	1994	4,976	
	Total	16,967	
Palmetto Bass (Striped X White Bass hybrid)	1994	208,174	FGL
	1995	530,541	FGL
	1996	152,271	FGL
	1997	105,274	FGL
	1998	184,564	FGL
	1999	91,254	FGL
	2002	100,444	FGL
Total	1,372,522		
Walleye	1974	334,317	FRY
	1975	338,000	FRY
	Total	672,317	

Table 5. Survey of structural habitat types, Lake Wright Patman, Texas (Brice 2005). Shoreline habitat type units are in miles.

Habitat type	Estimate	% of total
Natural	167.0 miles	98.2
Rocky	3.0 miles	1.8

Table 6. Survey of aquatic vegetation, Lake Wright Patman, Texas, 2004, 2008, and 2012. Surface area (acres) is listed with percent of total reservoir surface area in parentheses.

Vegetation	2004	2008	2012
Native submersed	250 (1.2)	32 (0.2)	45 (0.2)
Native floating-leaved	25 (0.1)	760 (3.8)	229 (1.1)
Native emergent	55 (0.3)	0.5 (<0.1)	Trace
Non-native			
Alligatorweed			Trace
Giant salvinia			^a
Hydrilla	5 (<0.1)	102 (0.5)	2 (<0.1)
Waterhyacinth		Trace	61 (0.3)

^a Giant salvinia was not present during the 2012 survey, but was found later during the survey period.

Gizzard Shad

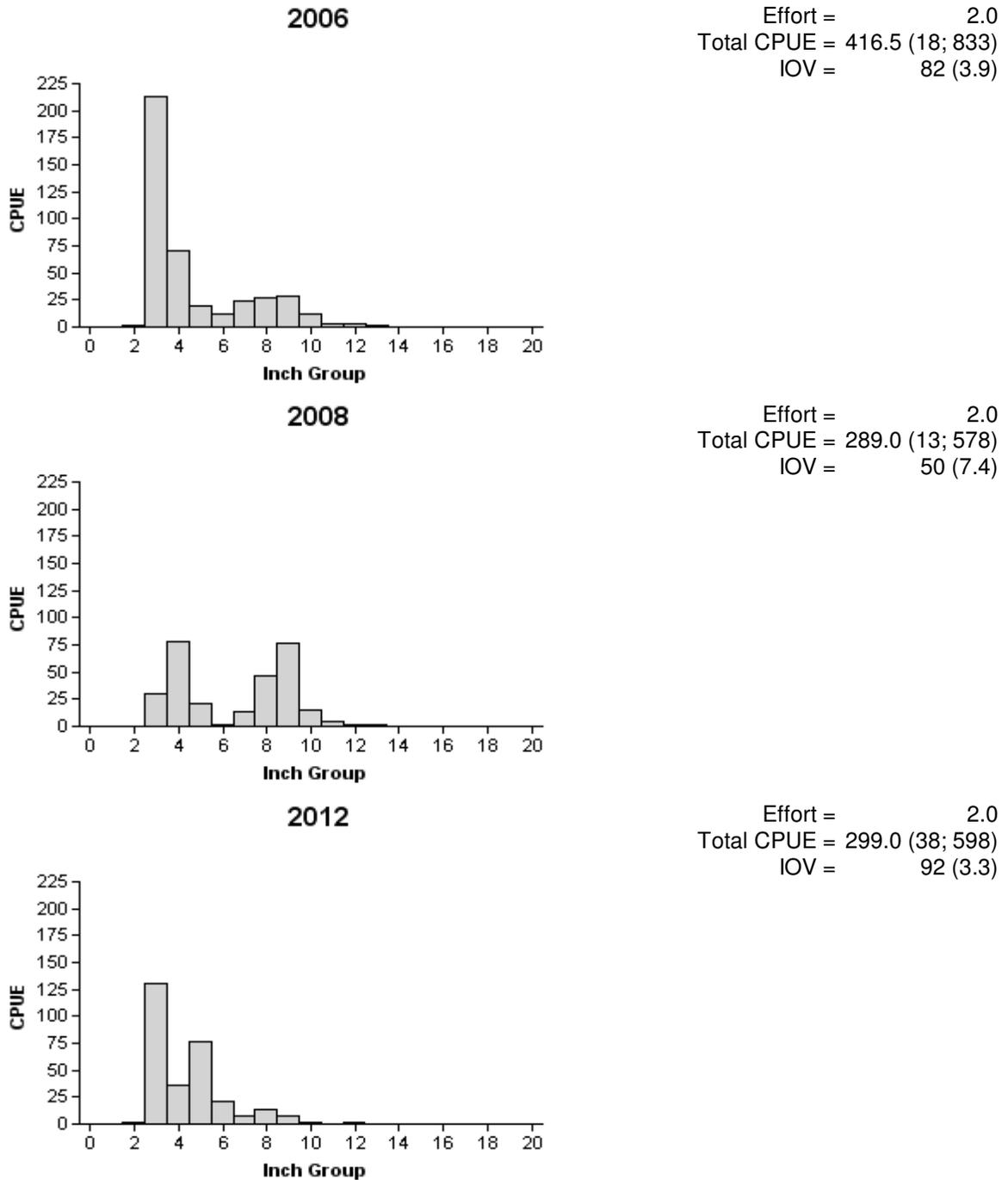


Figure 2. Number of Gizzard Shad caught per hour (CPUE) and population indices (RSE and N for CPUE and SE for IOV and size structure are in parentheses) for fall electrofishing surveys, Lake Wright Patman, Texas, 2006, 2008, and 2012.

Bluegill

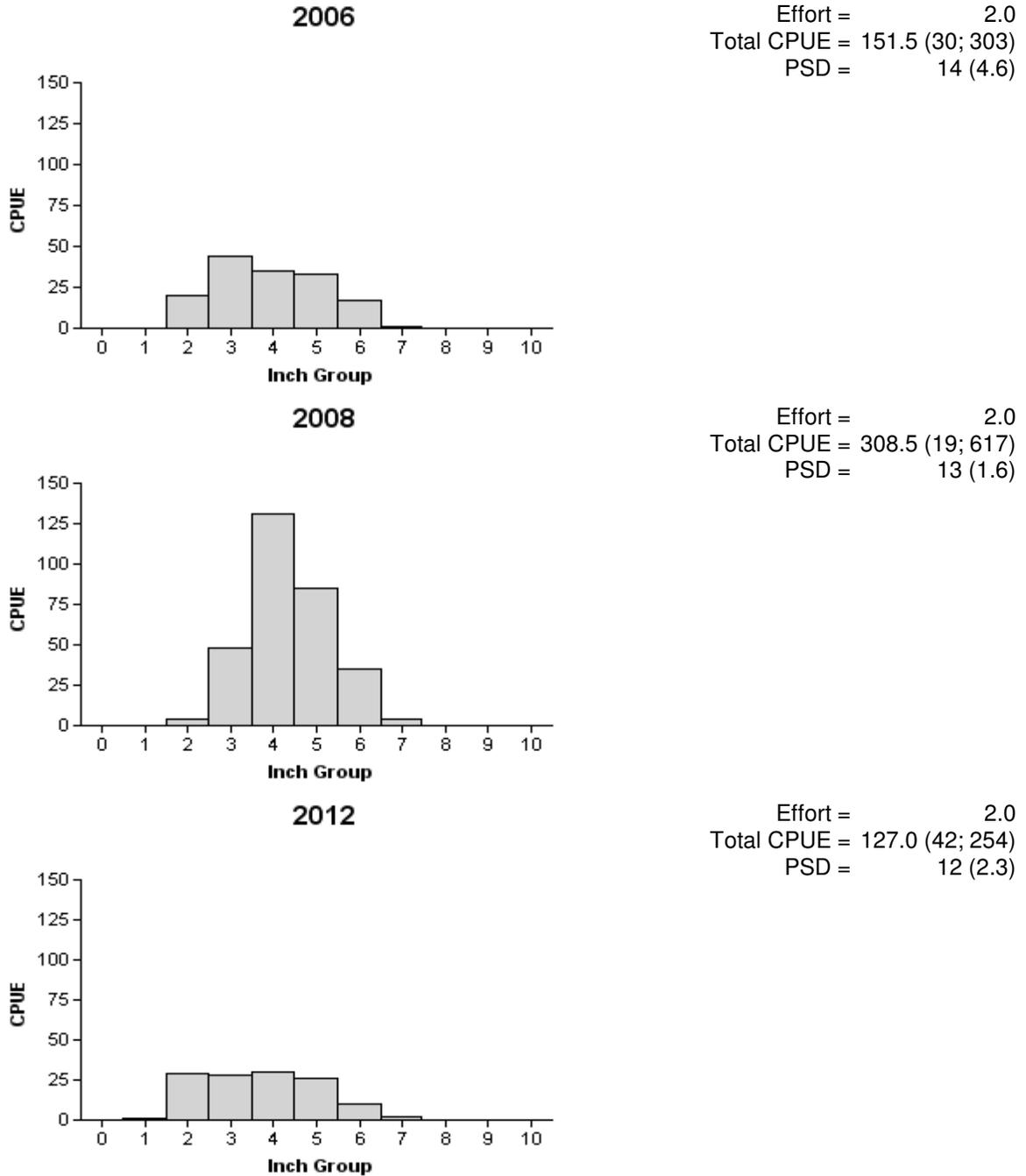


Figure 3. Number of Bluegill caught per hour (CPUE) and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for fall electrofishing surveys, Lake Wright Patman, Texas, 2006, 2008, and 2012.

Redear Sunfish

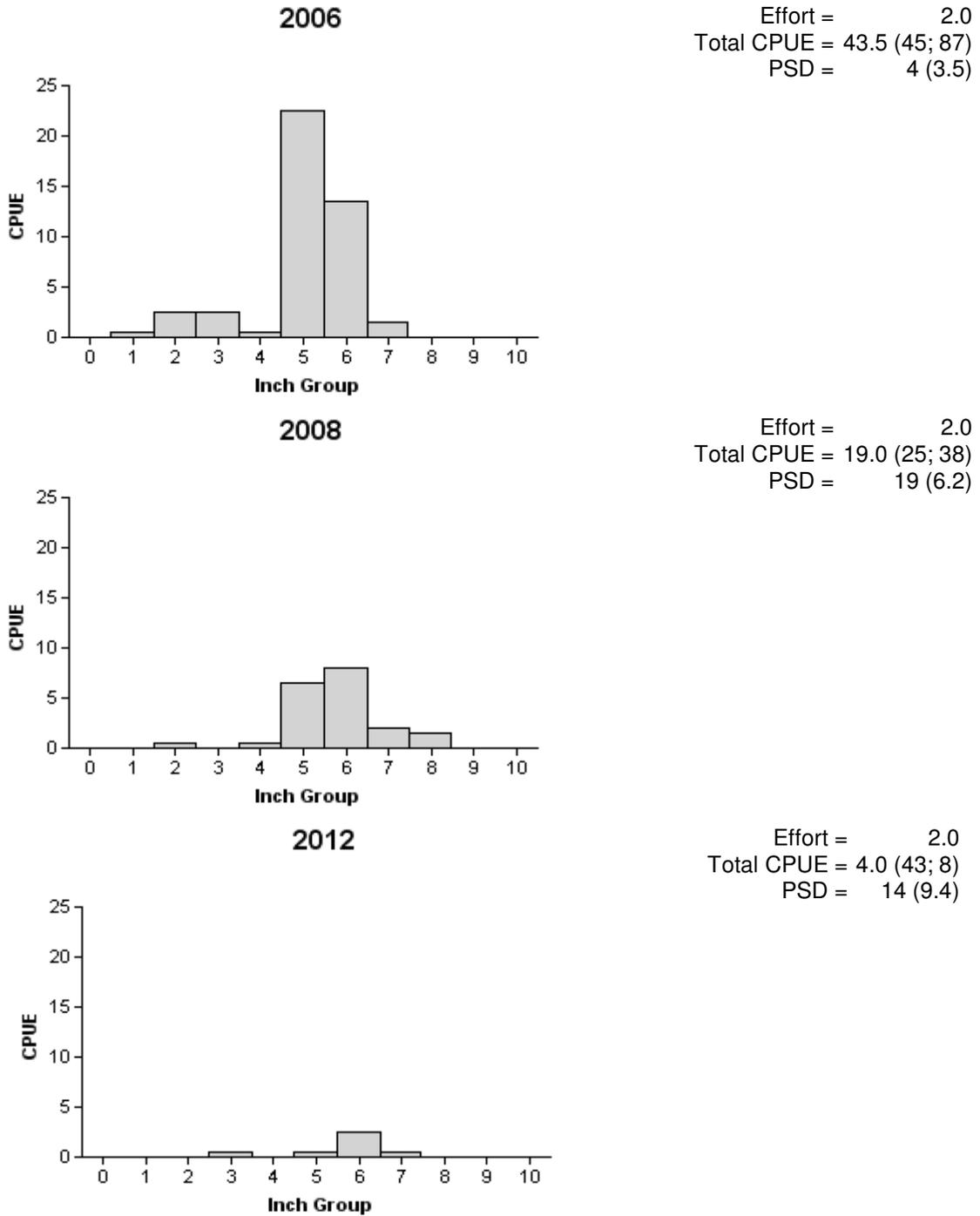


Figure 4. Number of Redear Sunfish caught per hour (CPUE, bars) and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for fall electrofishing surveys, Lake Wright Patman, Texas, 2006, 2008, and 2012.

Blue Catfish

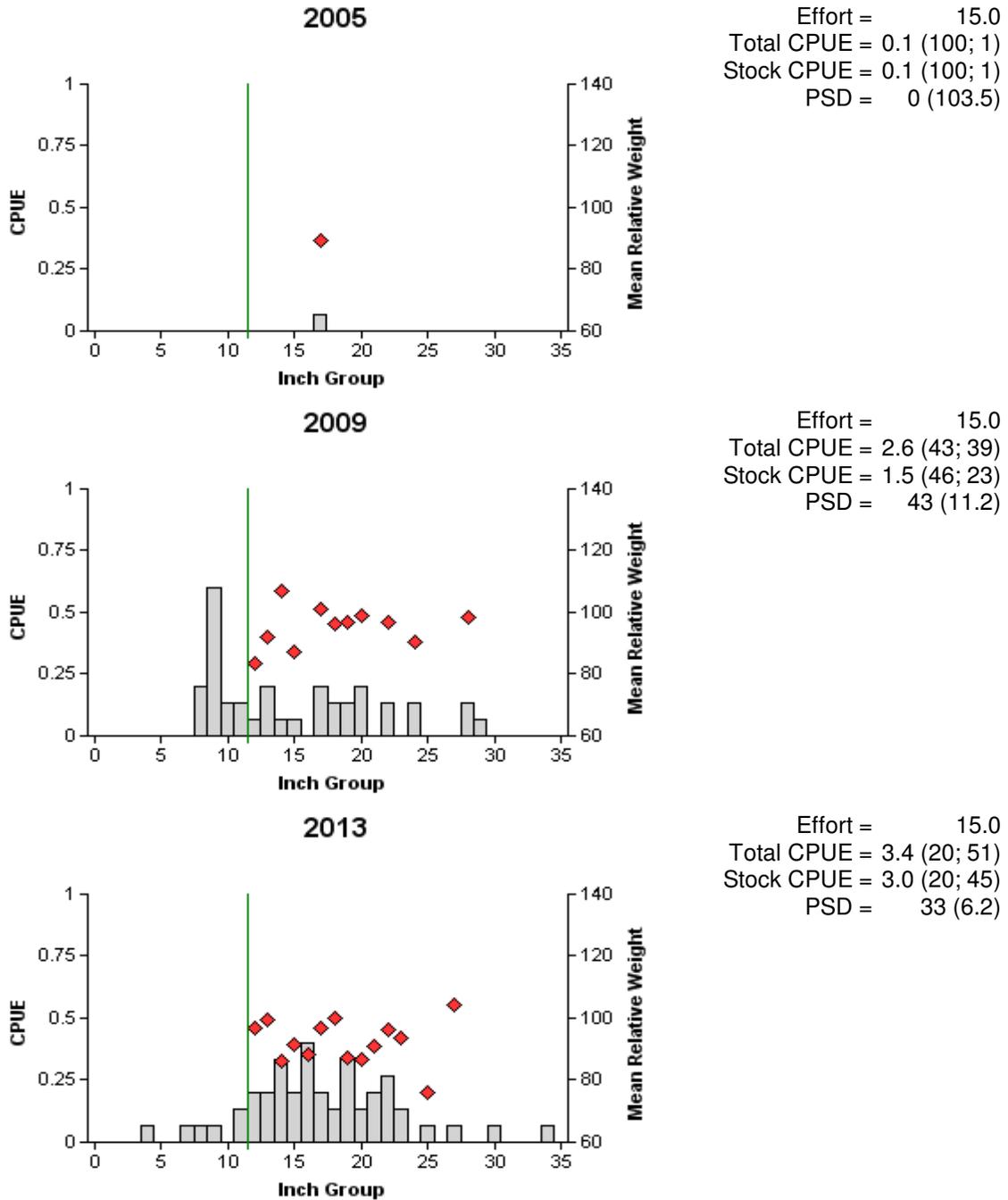


Figure 5. Number of Blue Catfish caught per net night (CPUE; bars), mean relative weight (diamonds), and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for spring gill net surveys, Lake Wright Patman, Texas, 2005, 2009, and 2013. Vertical lines indicate minimum length limit.

Channel Catfish

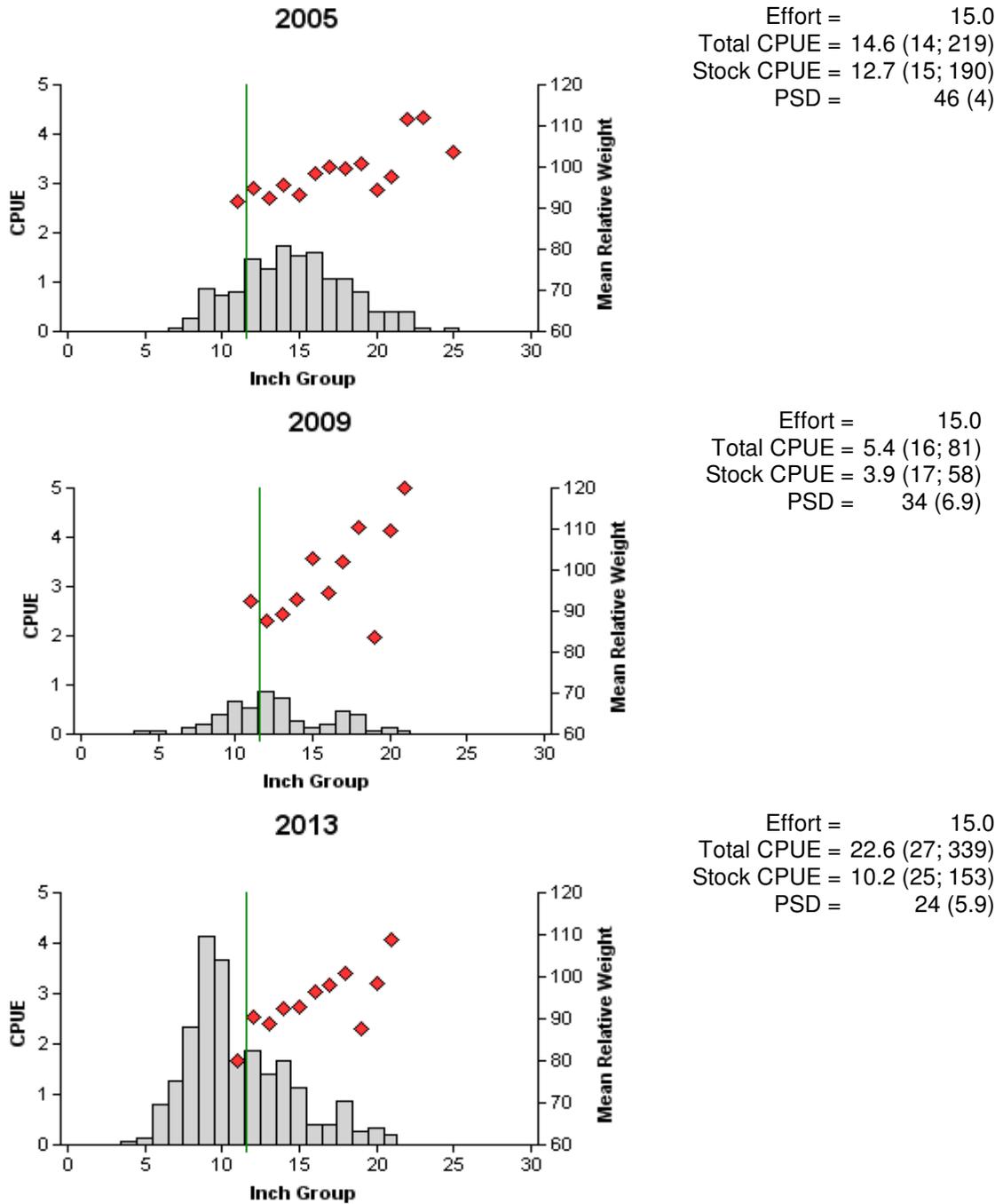


Figure 6. Number of Channel Catfish caught per net night (CPUE; bars), mean relative weight (diamonds), and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for spring gill net surveys, Lake Wright Patman, Texas, 2005, 2009, and 2013. Vertical lines indicate minimum length limit.

White Bass

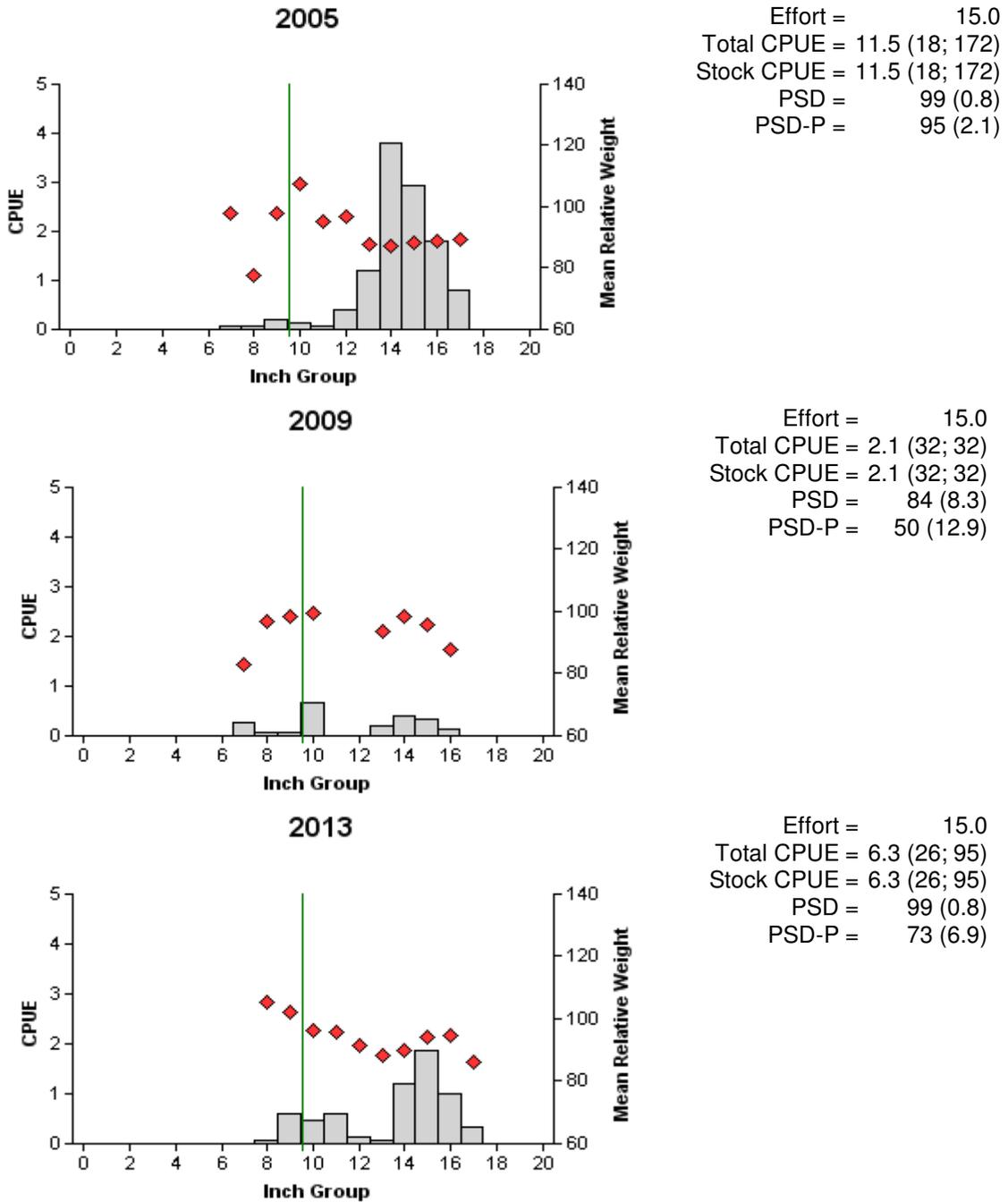


Figure 7. Number of White Bass caught per net night (CPUE, bars), mean relative weight (diamonds), and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for spring gill net surveys, Lake Wright Patman, Texas, 2005, 2009, and 2013. Vertical lines indicate minimum length limit.

Largemouth Bass

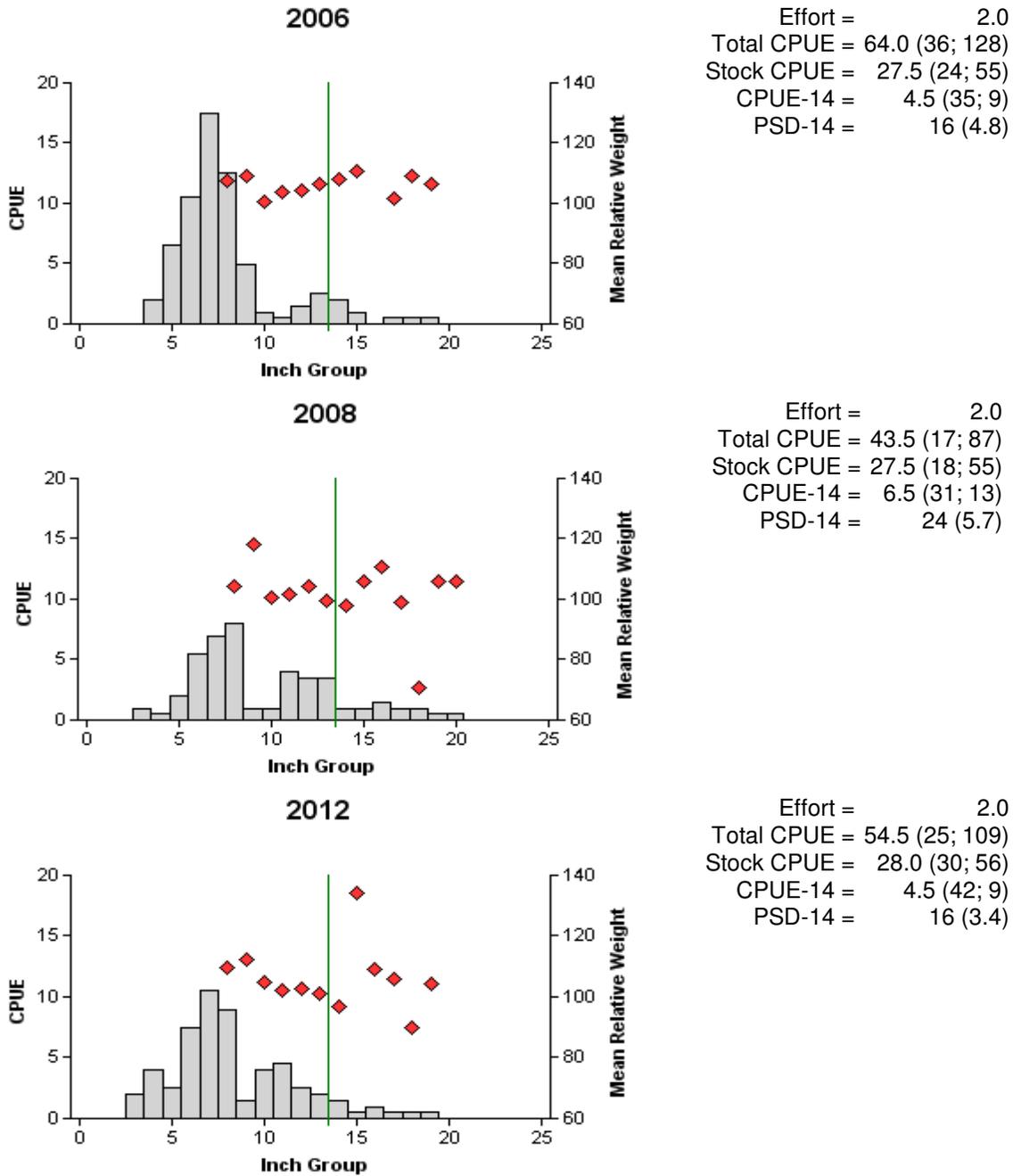


Figure 8. Number of Largemouth Bass caught per hour (CPUE, bars), mean relative weight (diamonds), and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for fall electrofishing surveys, Lake Wright Patman, Texas, 2006, 2008, and 2012. Vertical lines indicate minimum length limit.

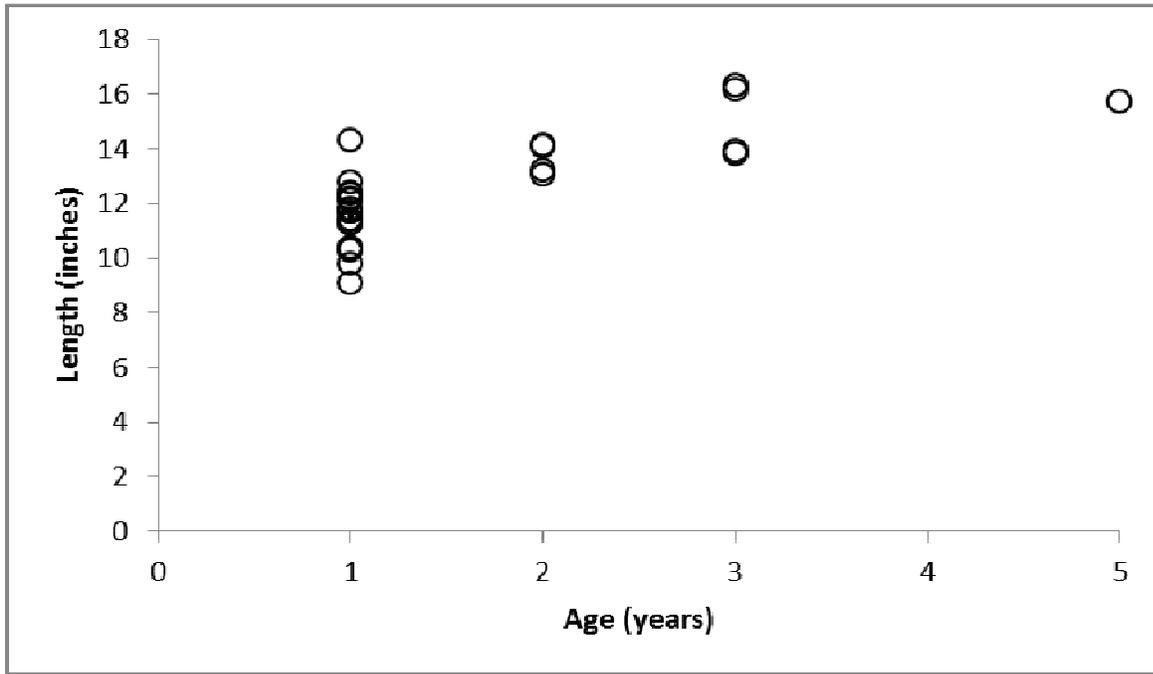


Figure 9. Length-at-age for Largemouth Bass collected by electrofishing at Lake Wright Patman, Texas, October 2012.

Table 7. Results of genetic analysis of Largemouth Bass collected by fall electrofishing, Lake Wright Patman, Texas, 1991, 1993, 1997, 2000, 2004, 2006, and 2012. FLMB = Florida Largemouth Bass, NLMB = Northern Largemouth Bass, Intergrade = hybrid between an FLMB and an NLMB. Genetic composition was determined by electrophoresis prior to 2005 and with micro-satellite DNA analysis since 2005.

Year	Sample size	Number of fish			% FLMB alleles	% FLMB
		FLMB	Intergrade	NLMB		
1991	30	2	0	28	6.7	6.7
1993	30	0	0	30	0.0	0.0
1997	27	0	2	25	2.7	0.0
2000	11	0	1	10	4.5	0.0
2004	60	0	9	50	5.9	0.0
2006	36	0	14	22	9.2	0.0
2012	28	0	15	12	15.0	0.0

White Crappie

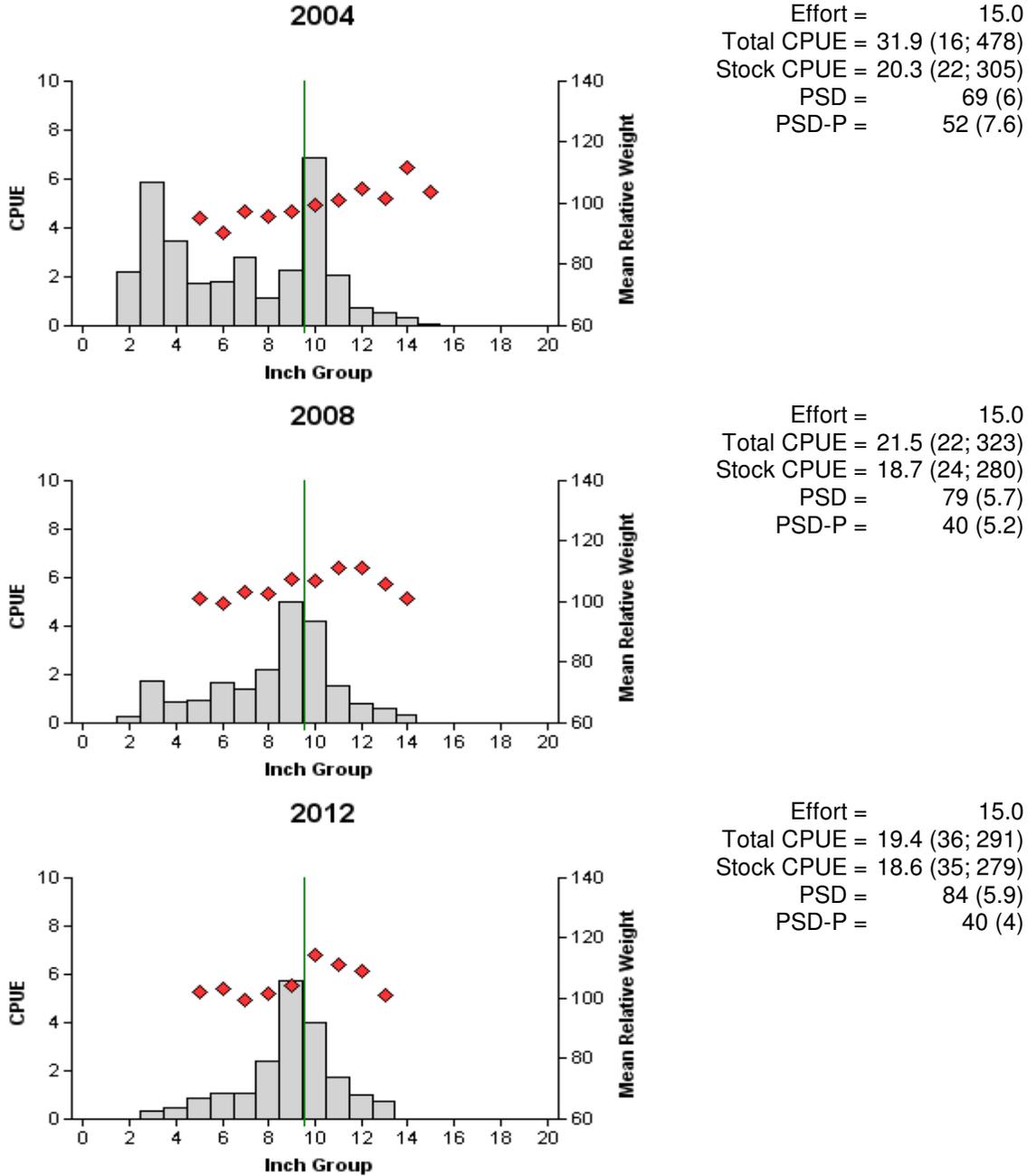


Figure 10. Number of White Crappie caught per net night (CPUE, bars), mean relative weight (diamonds), and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for fall trap net surveys, Lake Wright Patman, Texas, 2004, 2008, and 2012. Vertical lines indicate minimum length limit.

Black Crappie

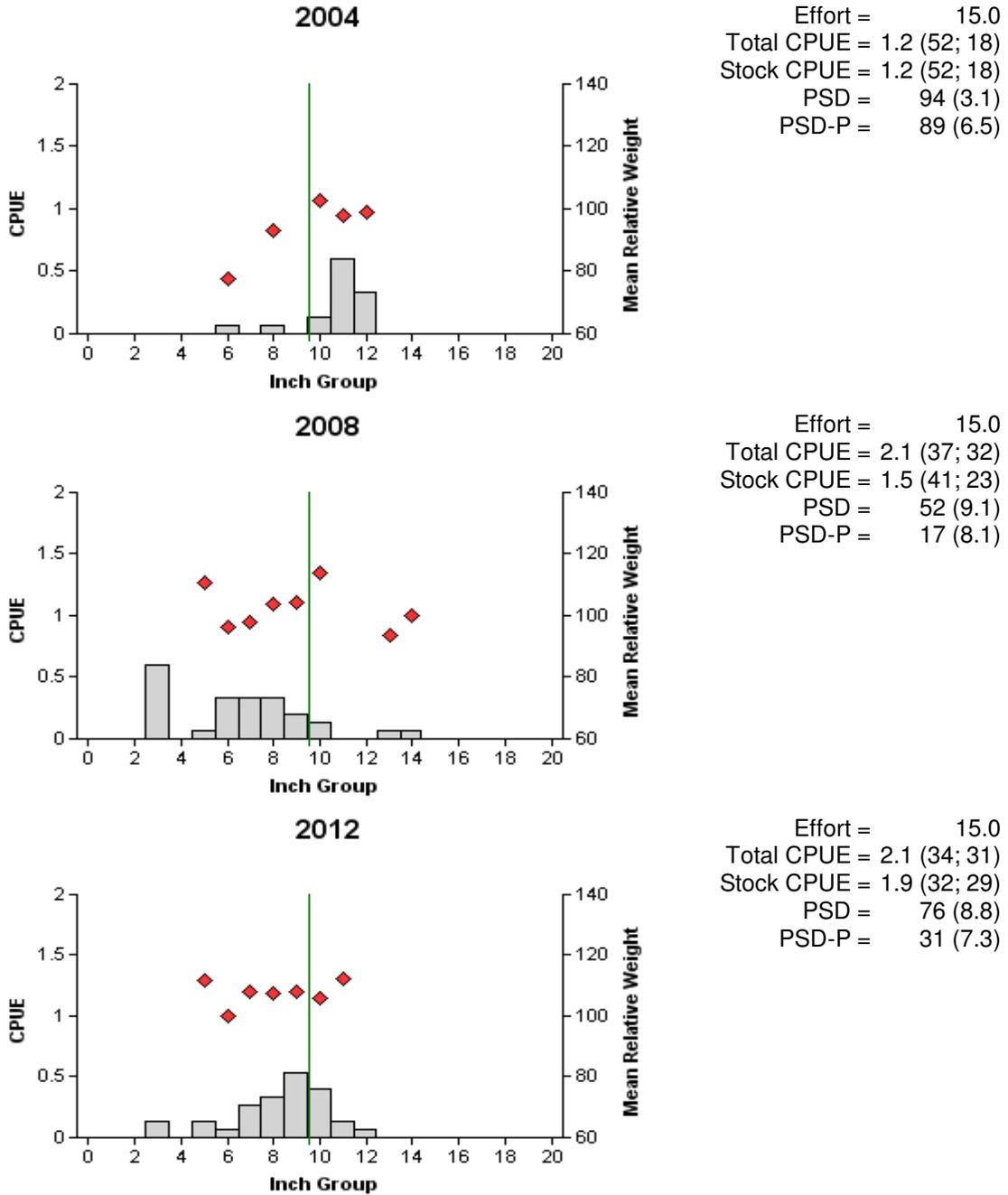


Figure 11. Number of Black Crappie caught per net night (CPUE, bars), mean relative weight (diamonds), and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for fall trap net surveys, Lake Wright Patman, Texas, 2004, 2008, and 2012. Vertical lines indicate minimum length limit.

Table 8. Proposed sampling schedule for Lake Wright Patman, Texas. Gill netting surveys are conducted in the spring, vegetation surveys are conducted in the summer, and electrofishing and trap netting surveys are conducted in the fall. Standard survey denoted by S and additional survey denoted by A.

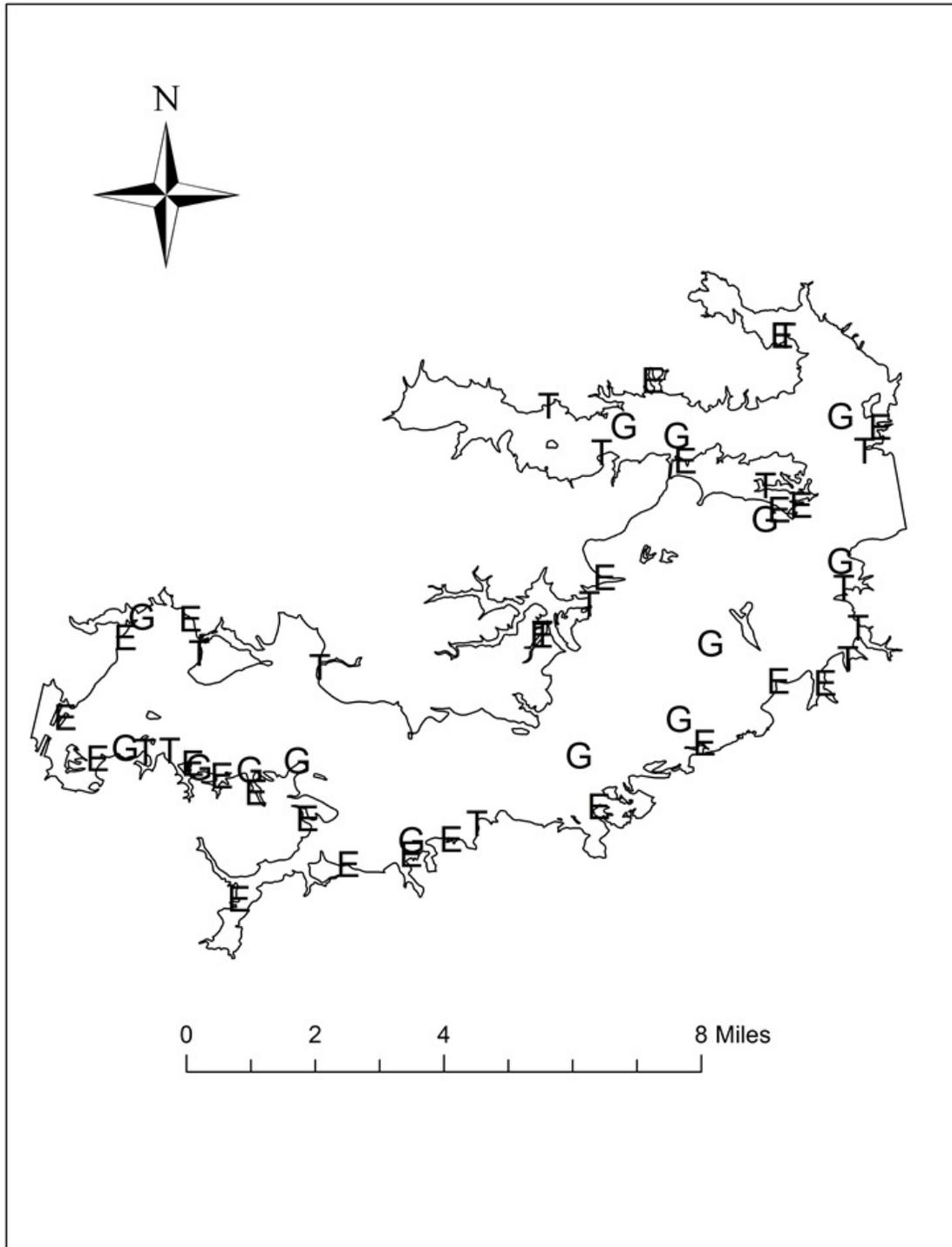
Survey year	Electrofishing Fall	Trap net	Gill net	Habitat			Creel survey	Report
				Structural	Vegetation	Access		
2013-2014					A			
2014-2015					A			
2015-2016					A			
2016-2017	S	A	S		S	S	A	S

APPENDIX A

Number (N) and catch rate (CPUE) of all target species collected from all gear types from Lake Wright Patman, Texas, 2012-2013.

Species	Gill Netting		Trap Netting		Electrofishing	
	N	CPUE	N	CPUE	N	CPUE
Gizzard Shad					598	299.0
Threadfin Shad					609	304.5
Blue Catfish	51	3.4				
Channel Catfish	339	22.6				
White Bass	95	6.3				
Warmouth					5	2.5
Bluegill					254	127.0
Longear Sunfish					88	44.0
Redear Sunfish					8	4.0
Largemouth Bass					109	54.5
White Crappie			291	19.4		
Black Crappie			31	2.1		

APPENDIX B



Location of sampling sites, Lake Wright Patman, Texas, 2012-2013. Trap netting, gill netting, and electrofishing stations are indicated by T, G, and E, respectively.