PERFORMANCE REPORT

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FEDERAL AID PROJECT F-221-M-1

INLAND FISHERIES DIVISION MONITORING AND MANAGEMENT PROGRAM

2010 Survey Report

**Arlington Reservoir**

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SURVEY AND MANAGEMENT SUMMARY

Fish populations in Arlington Reservoir were surveyed in 2010 using an electrofisher and trap nets and in 2011 using gill nets.  This report summarizes the results of the surveys and contains a management plan for the reservoir based on those findings.

**Reservoir Description:**  Arlington Reservoir is a 1,939-acre impoundment constructed on Village Creek (a tributary of West Fork Trinity River) by the City of Arlington in 1957 to provide flood control, water for municipal and industrial purposes, and recreation.  Arlington Reservoir is surrounded by urban development and is almost directly in the center of the Dallas-Fort Worth metroplex.  It is approximately 3.8 miles long, 1.6 miles wide (widest point), and has a 20-mile shoreline at 550 feet mean-sea-level.  In addition to run-off from the 143 square-mile watershed, an average of 30,426 acre-feet of water, purchased annually from the Tarrant Regional Water District (TRWD), is pumped from Cedar Creek and Richland-Chambers Reservoirs.  Exelon operates a natural gas power plant on the reservoir, discharging hot water on the west side of the reservoir.  Angler and boat access was adequate.  There are three handicap specific facilities, three boat ramps, and several banks accessible to anglers.  Fishery habitat is primarily native emergent vegetation (water willow and button bush) natural along with rocky shoreline.

- **Management history:**  Important sport fishes include largemouth bass, white crappie, white bass, and channel catfish.  All species have been managed with statewide regulations.

- **Fish Community**
  - **Prey species:**  Gizzard and threadfin shad were in great abundance in the reservoir. Bluegill were also very abundant as prey and there were some larger fish (≥ 6 inches) available for anglers.  Longear sunfish were moderately abundant as well.

  - **Catfishes:**  Arlington continues to be the best channel catfish reservoir in the district. The catch rate of channel catfish nearly doubled from the past sample.  Flathead catfish were present as well.

  - **White bass:**  White bass catch rates decreased greatly from the past sample, especially lacking are the smaller fish.

  - **Largemouth bass:**  The largemouth bass population has fluctuated greatly in abundance over the past three surveys.  Condition factors were good with most, but not all, mean relative weights above 90.

  - **White crappie:**  The white crappie population continued to be high in abundance with quality fish available for anglers.  Relative weights for crappie averaged over 100.

- **Management Strategies:**  General monitoring with trap nets, gill nets, and electrofishing surveys will be conducted in 2014-2015.  Work with the city of Arlington while they develop their Lake Arlington Master Plan to improve fishery habitat. Monitor the reservoir for the spread of invasive species, specifically zebra mussels that may be introduced via recreation boats and/or a pipeline from other reservoirs within the Trinity River watershed.

INTRODUCTION

This document is a summary of fisheries data collected from Arlington Reservoir in 2010-2011. 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 2010-2011 data for comparison.

*Reservoir Description*

Arlington Reservoir is a 1,939-acre impoundment constructed on Village Creek (a tributary of West Fork Trinity River) by the City of Arlington in 1957 to provide flood control, water for municipal and industrial purposes, and recreation. Arlington Reservoir is surrounded by urban development and is almost directly in the center of the Dallas-Fort Worth metroplex. It is approximately 3.8 miles long, 1.6 miles wide (widest point), and has a 20-mile shoreline at 550 feet mean-sea-level. In addition to run-off from the 143 square-mile watershed, an average of 30,426 acre-feet of water, purchased annually from the Tarrant Regional Water District, is pumped from Cedar Creek Reservoir and Richland Chambers Reservoir. Angler and boat access is adequate. There are three handicap specific facilities, three boat ramps, and several banks accessible to anglers. Fishery habitat is primarily native emergent vegetation (water willow and button bush) and natural along with rocky shoreline and boat docks. Other descriptive characteristics for Arlington Reservoir are in Table 1.

*Management History*

**Previous management strategies and actions:** Management strategies and actions from the previous survey report (Hungerford and Brock 2007) included:

1. The Texas Commission on Environmental Quality recently requested all power plant facilities to account for impingement of fish. A consulting firm was contracted and estimated impingement for Arlington Reservoir. Exelon will be required to mitigate for all loss of fish due to power plant operations. .

     **Action:** Accompanied consulting firm during estimation of fish impingement. Results indicated very little impingement occurred and was limited to non-game species.

**Harvest regulation history:** Sport fish populations in Arlington Reservoir have been managed with statewide regulations (Table 2).

**Stocking history:** The last stocking of Arlington Reservoir occurred in 2003, consisting of 19,390 palmetto bass. The complete stocking history is in Table 3.

**Vegetation/habitat history:** Arlington Reservoir aquatic vegetation was composed of sporadic stands of native shoreline emergent species such as water willow and button bush. Much of the eastern shore is developed with boat docks and some bulkhead (Table 4).

METHODS

Fishes were collected by electrofishing (1.0 hours 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/hr) 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 2008).

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 X SE of the estimate/estimate) was calculated for all CPUE statistics and SE was calculated for structural indices and IOV.  Source for water level data was the United States Geological Survey website, maintained in cooperation with the City of Arlington.

RESULTS AND DISCUSSION

**Habitat:**  Littoral zone habitat consisted primarily of native emergent vegetation (water willow and button bush) natural (Table 4).  The second most dominant habitat type was rocky shoreline and natural.  Historically and presently, Arlington Reservoir has sporadic stands of water willow and button bush

**Water Transfer:** Arlington Reservoir is primarily used for municipal water supply, recreation, and to a lesser extent, flood control.  There is currently one permanent pumping station on the reservoir which connects to a raw water treatment plant for municipal use.  There is also an outfall from a pipeline operated by TRWD that transfers water to Arlington Reservoir from Richland Chambers and Cedar Creek Reservoirs in East Texas.

**Prey species:**  The electrofishing catch rate of threadfin shad was substantially lower in 2010 (60.0/hr) than in 2008 (992.0/hr) and 2009 (334.0/hr).  Consecutive harsh winters coupled with thermal pollution in the power plant discharge may help explain the decline. The gizzard shad electrofishing catch rate in 2010 of 276.0/hr was above the district average of 267.9/hr. This catch rate was higher than the catch rate observed in 2009 (221.0/hr) and lower than 2008 (328.0/hr; Figure 2).  Index of vulnerability for gizzard shad was low, indicating that 32% of gizzard shad captured in 2010 were available to existing predators. IOV has declined from the 2008 (67%) and the 2009 (61%) surveys. The electrofishing catch rate of bluegill in 2010 of 483.0/hr is the highest ever recorded at Arlington and higher than the district average of 195.8/hr (Figure 3).  The bluegill population contains good numbers of quality sized fish (>6 inches) as evident in PSD values and CPUE-6.  The longear sunfish catch rate observed in 2010 (92.0/hr) was similar to rates observed in 2004 and 2005 and below the district average of 97.3/hr (Appendix D).

**Channel catfish:**  The gill net catch rate of channel catfish was 23.6 /nn in 2011 which was the highest ever recorded and higher than the previous survey of 15.0/nn (Figure 4).  The 2011 catch rate was well above the district average 5.8/nn and size structure remained excellent as indicated by a PSD value of 48.  The sample included fish from 5 inches to 30 inches.  The catch rate of channel catfish greater than 18 inches was 7.6 per net night.  Arlington continues to be the best channel catfish reservoir in the district.

**White bass:**  The gill netting catch rates of white bass in Arlington have declined during the past three samples.  The 2010 gill net catch rate of 1.2/nn was lower than the 2007 sample of 5.2/nn (Figure 5) and much lower than the 2003 sample (19.0/nn).  Recent drought has likely reduced spawning success. The smallest fish sampled was 9 inches.

**Largemouth bass:**  The total electrofishing catch rate in 2010 (122.0/hr) was nearly identical to 2009 (Figure 6).  Those two catch rates were slightly lower than the catch rate observed in 2008 (159.0/hr) and lower than the district average of 132.6/hr.  The size structure of the population continues to be good as indicated by a PSD value of 40.  Body condition in 2010 was fair for most size classes of fish and good for those over 15 inches.  Florida largemouth bass influence was high as Florida alleles were 58.0% in 2010 (Table 5).  Procedures for genetic analysis changed from testing one or two allozymes in the early 2000s to testing micro-satellites in 2007.  This could explain the drop in the pure Florida genotype.

**White crappie:**  The trap net catch rate of white crappie was 19.2/nn in 2010, which was slightly higher than in 2006 (19.0/nn; Figure 7). The body condition of white crappie was good with most size classes at or above 100.  The size structure of the population is biased towards larger fish as indicated by a PSD value of 98.  The catch rate of fish over 10 inches was 9.8 per net night.

**Fisheries management plan for Arlington Reservoir, Texas**

Prepared – July 2011.

**ISSUE 1:**   The controlling authority, the city of Arlington, recently developed the Lake Arlington Master Plan. TPWD worked with the city and the consultants hired to draft the plan to ensure fishery concerns were included in the plan. Retaining and storm walls on the shoreline were of particular interest as they degrade littoral fishery habitat.

MANAGEMENT STRATEGY
1. Assist the city with habitat improvements to mitigate future retaining walls and bulkheading along the shores of the reservoir.

**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. Arlington is especially susceptible through pipelines from Cedar Creek and Richland-Chambers Reservoirs.

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, literature, etc… so that they can in turn educate their customers.
3. Educate the public about invasive species through the use of media and the internet.
4. Make a speaking point about invasive species when presenting to constituent and user groups.
5. Keep track of (i.e., map) existing and future inter-basin water transfers to facilitate potential invasive species responses.

**ISSUE 3:**   The channel catfish population in Arlington Reservoir continues to be outstanding. The growth of channel catfish has never been documented at Arlington.

MANAGEMENT STRATEGIES
1. Conduct teir-3 age and growth analysis with an additional gill net survey in the spring of 2014.
2. Prepare a press release concerning the status of the channel catfish population as necessary including relevant growth information.

**SAMPLING SCHEDULE JUSTIFICATION**
General monitoring of other sport fish species with electrofisher will be conducted annually and gill netting and trap netting will be conducted every 4 years. An additional gill net survey will be conducted in 2014 to collect fish for age and growth analysis.

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.

DiCenzo, V. J., M. J. Maceina, and M. R. Stimpert. 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. Neumann, 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.

Hungerford, T and R. Brock. 2007. Statewide freshwater fisheries monitoring and management program survey report for Arlington Reservoir, 2006. Texas Parks and Wildlife Department, Federal Aid Report F-30-R, Austin.
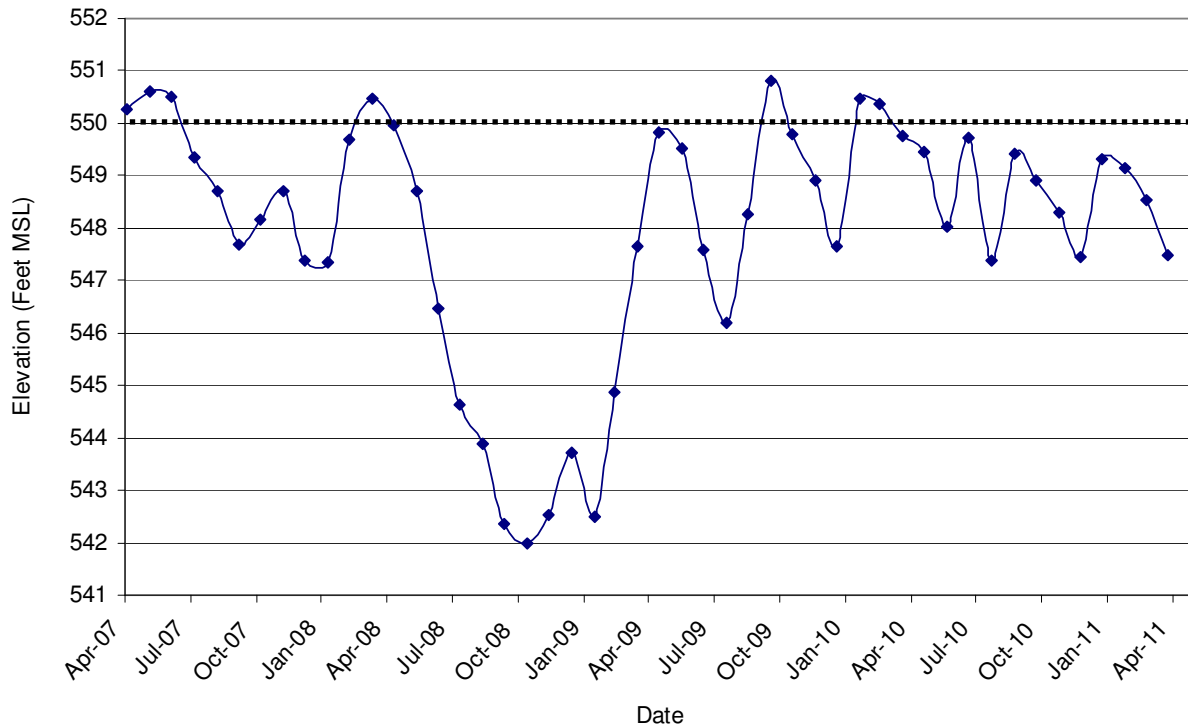
Figure 1.  Mean monthly water level elevations in feet above mean sea level (MSL) recorded for Arlington Reservoir, Texas from May 2007 – April 2011.  Conservation pool is 550 feet above MSL and is indicated by the dashed line.  Data provided by United States Geological Survey in cooperation with the city of Arlington.

Table 1.  Characteristics of Arlington Reservoir, Texas.

| Characteristic | Description |
| --- | --- |
| Year Constructed | 1957 |
| Controlling authority | City of Arlington |
| Counties | Tarrant |
| Reservoir type | Tributary of Trinity River |
| Conductivity | 219 umhos/cm |

Table 2.  Harvest regulations for Arlington Reservoir.

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

Table 3. Stocking history of Arlington 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.

| Species | Year | Number | Life Stage | Mean TL (in) |
|---|---|---|---|---|
| Channel catfish | 1970 | 13,450 | AFGL | 7.9 |
| | 1972 | 5,026 | AFGL | 7.9 |
| | 1997 | 1,000 | ADL | 16.1 |
| | 1998 | 1,500 | ADL | 13.1 |
| | Total | 20,976 | | |
| | | | | |
| Florida largemouth bass | 1978 | 9,900 | FGL | 2.0 |
| | 1992 | 114,078 | FGL | 1.2 |
| | 1997 | 115,321 | FGL | 1.2 |
| | 2002 | 115,750 | FGL | 1.6 |
| | Total | 355,049 | | |
| | | | | |
| Largemouth bass | 1967 | 10,000 | UNK | UNK |
| | 1971 | 75,000 | UNK | UNK |
| | Total | 85,000 | | |
| | | | | |
| Palmetto bass (striped X white bass hybrid) | 1978 | 11,947 | UNK | UNK |
| | 1980 | 22,500 | UNK | UNK |
| | 1982 | 21,000 | UNK | UNK |
| | 1984 | 46,605 | FGL | 2.0 |
| | 1985 | 45,000 | FGL | 2.0 |
| | 1986 | 44,000 | FRY | 1.0 |
| | 1987 | 45,450 | FRY | 1.0 |
| | 1988 | 51,300 | FRY | 1.0 |
| | 1989 | 49,700 | FGL | 1.6 |
| | 1991 | 41,200 | FRY | 1.0 |
| | 1992 | 21,800 | FGL | 1.3 |
| | 1994 | 34,506 | FGL | 1.3 |
| | 1995 | 38,400 | FGL | 1.2 |
| | 1996 | 35,800 | FGL | 1.4 |
| | 1997 | 30,000 | FGL | 1.8 |
| | 1998 | 35,218 | FGL | 1.1 |
| | 1999 | 11,526 | FGL | 1.5 |
| | 2002 | 11,379 | FGL | 1.5 |
| | 2003 | 19,390 | FGL | 1.5 |
| | Total | 616,721 | | |
| | | | | |
| Walleye | 1975 | 50,000 | FRY | 0.2 |
| | 1976 | 500,000 | FRY | 0.2 |
| | Total | 550,000 | | |

Table 4.  Survey of littoral zone and physical habitat types, Arlington Reservoir, Texas, 2010.  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 |
| Bulk head | 0.5 | 2.1 | | |
| Bulk head + boat docks | 1.1 | 4.5 | | |
| Native emergent | | | 2.3 | 0.1 |
| Native emergent + bulk head | 0.4 | 1.7 | | |
| Native emergent + bulk head + boat docks | 0.6 | 2.4 | | |
| Native emergent + natural | 4.5 | 18.7 | | |
| Native emergent + natural + rocky shoreline | 2.1 | 8.7 | | |
| Native emergent + rocky shoreline + boat docks | 0.2 | 0.8 | | |
| Native emergent + rocky shoreline | 2.6 | 10.8 | | |
| Native emergent + natural + boat docks | 0.3 | 1.3 | | |
| Native emergent + dead trees | 0.1 | 0.4 | | |
| Natural | 3.2 | 13.3 | | |
| Natural + rocky shoreline | 3.7 | 15.4 | | |
| Natural + dead trees | 0.3 | 1.3 | | |
| Natural + flooded terrestrial | 1.1 | 4.6 | | |
| Natural + boat docks | 0.1 | 0.4 | | |
| Natural + rocky shoreline + flooded terrestrial | 0.1 | 0.4 | | |
| Rocky shoreline | 1.8 | 7.5 | | |
| Rocky shoreline + boat docks | 1.3 | 5.4 | | |
| Rocky shoreline + dead trees | >0.1 | 0.2 | | |
| Rocky shoreline + flooded terrestrial | >0.1 | >0.1 | | |
| Standing timber + flooded terrestrial | >0.1 | 0.1 | 5.9 | 0.3 |

# Gizzard Shad

### 2008

Effort = 1.0
Total CPUE = 328.0 (18; 328)
Stock CPUE = 251.0 (21; 251)
IOV = 67 (7)

### 2009



Effort = 1.0
Total CPUE = 221.0 (18; 221)
Stock CPUE = 187.0 (15; 187)
IOV = 61 (7.1)

### 2010



Effort = 1.0
Total CPUE = 276.0 (12; 276)
Stock CPUE = 213.0 (14; 213)
IOV = 32 (8)

Figure 2. Number of gizzard shad caught per hour (CPUE; bars) and population indices (RSE and N for CPUE and SE for IOV are in parentheses) for fall electrofishing surveys, Arlington Reservoir, Texas, 2008-2010.

# Bluegill

### 2008



Effort =                    1.0
Total CPUE = 295.0 (29; 295)
Stock CPUE = 283.0 (29; 283)
CPUE-6 =     96.0 (41; 96)
PSD =          34 (7.5)

### 2009



Effort =                    1.0
Total CPUE = 335.0 (18; 335)
Stock CPUE = 321.0 (18; 321)
CPUE-6 =     85.0 (25; 85)
PSD =          26 (3.4)

### 2010



Effort =                    1.0
Total CPUE = 483.0 (19; 483)
Stock CPUE = 479.0 (19; 479)
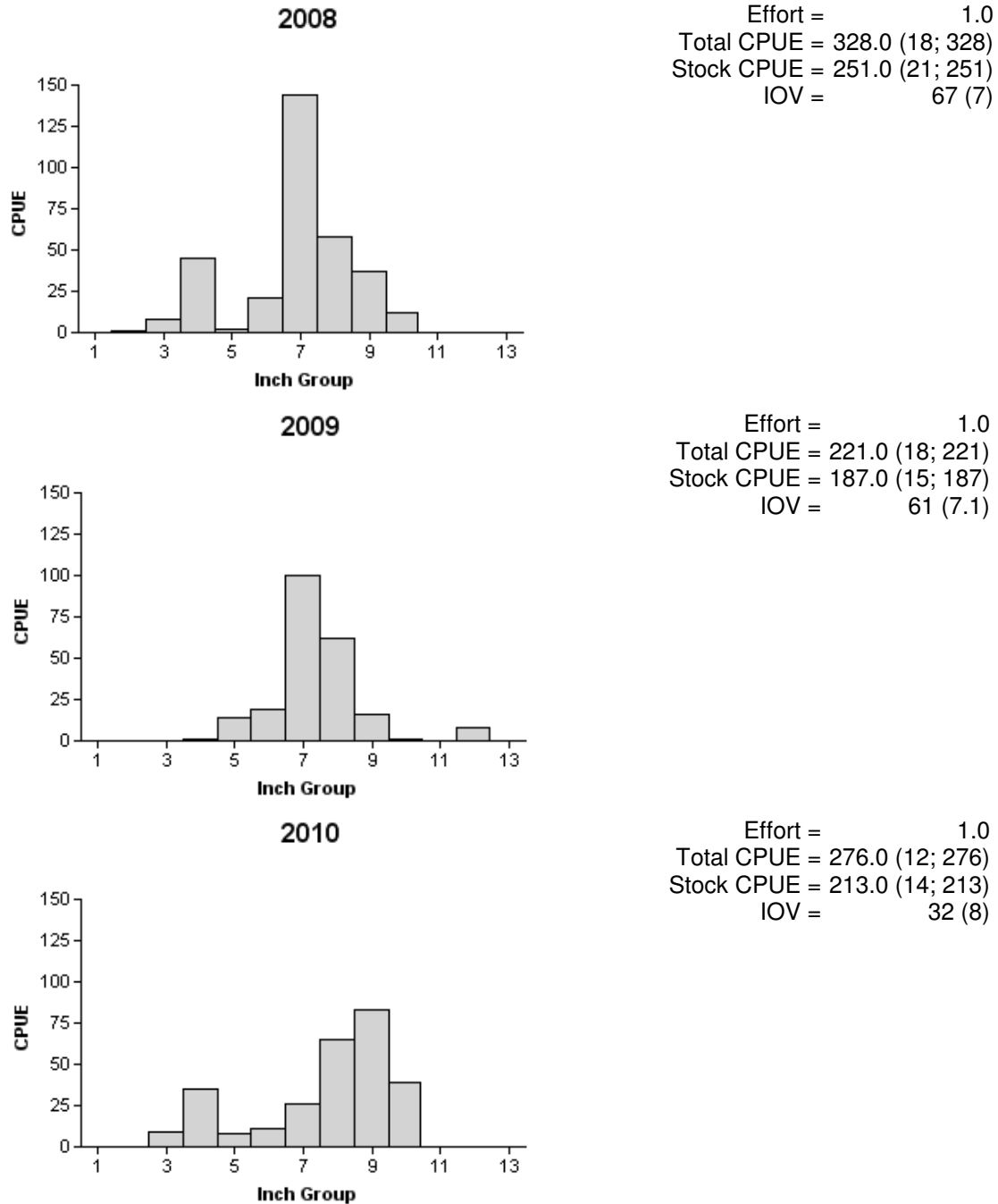CPUE-6 = 206.0 (27; 206)
PSD =          43 (6.4)
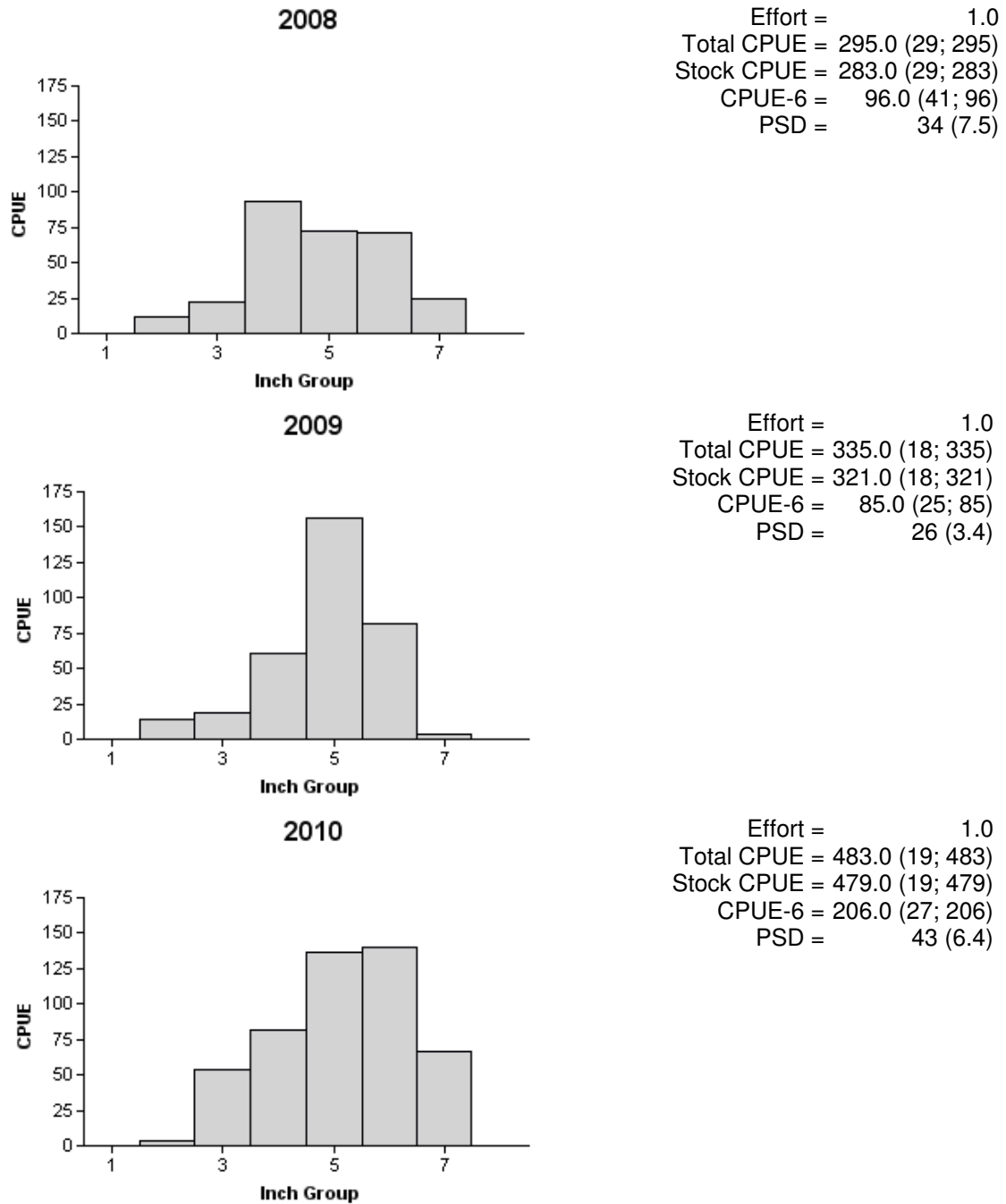
Figure 3. Number of bluegill caught per hour (CPUE; bars) and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for fall electrofishing surveys, Arlington Reservoir, Texas, 2008-2011.

# Channel Catfish

### 2003



Effort =            5.0
Total CPUE =  8.6 (38; 43)
Stock CPUE =  4.6 (33; 23)
CPUE-18 =    0.8 (47; 4)
PSD =           43 (11)

### 2007



Effort =            5.0
Total CPUE = 15.0 (29; 75)
Stock CPUE = 12.8 (29; 64)
CPUE-18 =    2.8 (31; 14)
PSD =           39 (1.8)

### 2011



Effort =            5.0
Total CPUE = 23.6 (18; 118)
Stock CPUE = 20.2 (18; 101)
CPUE-18 =    7.6 (26; 38)
PSD =           48 (7)

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, Arlington Reservoir, Texas, 2003, 2007, and 2011. Vertical line represents length limit at time of sampling.
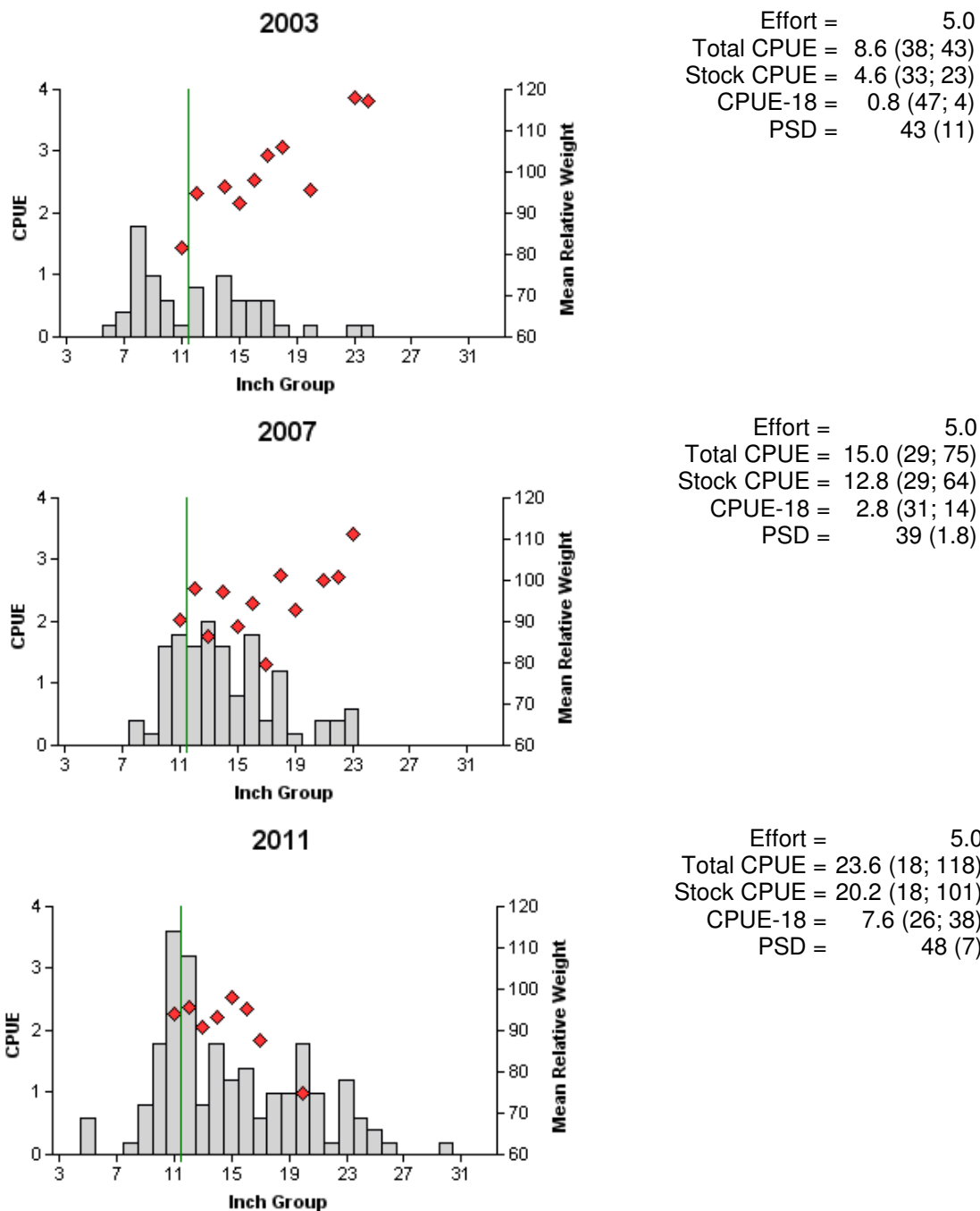
# White Bass

### 2003



Effort = 5.0
Total CPUE = 19.0 (16; 95)
Stock CPUE = 19.0 (16; 95)
CPUE-10 = 7.8 (37; 39)
PSD = 44 (14.7)

### 2007



Effort = 5.0
Total CPUE = 5.2 (35; 26)
Stock CPUE = 5.2 (35; 26)
CPUE-10 = 4.6 (38; 23)
PSD = 100 (0)

### 2011



Effort = 5.0
Total CPUE = 1.2 (100; 6)
Stock CPUE = 1.2 (100; 6)
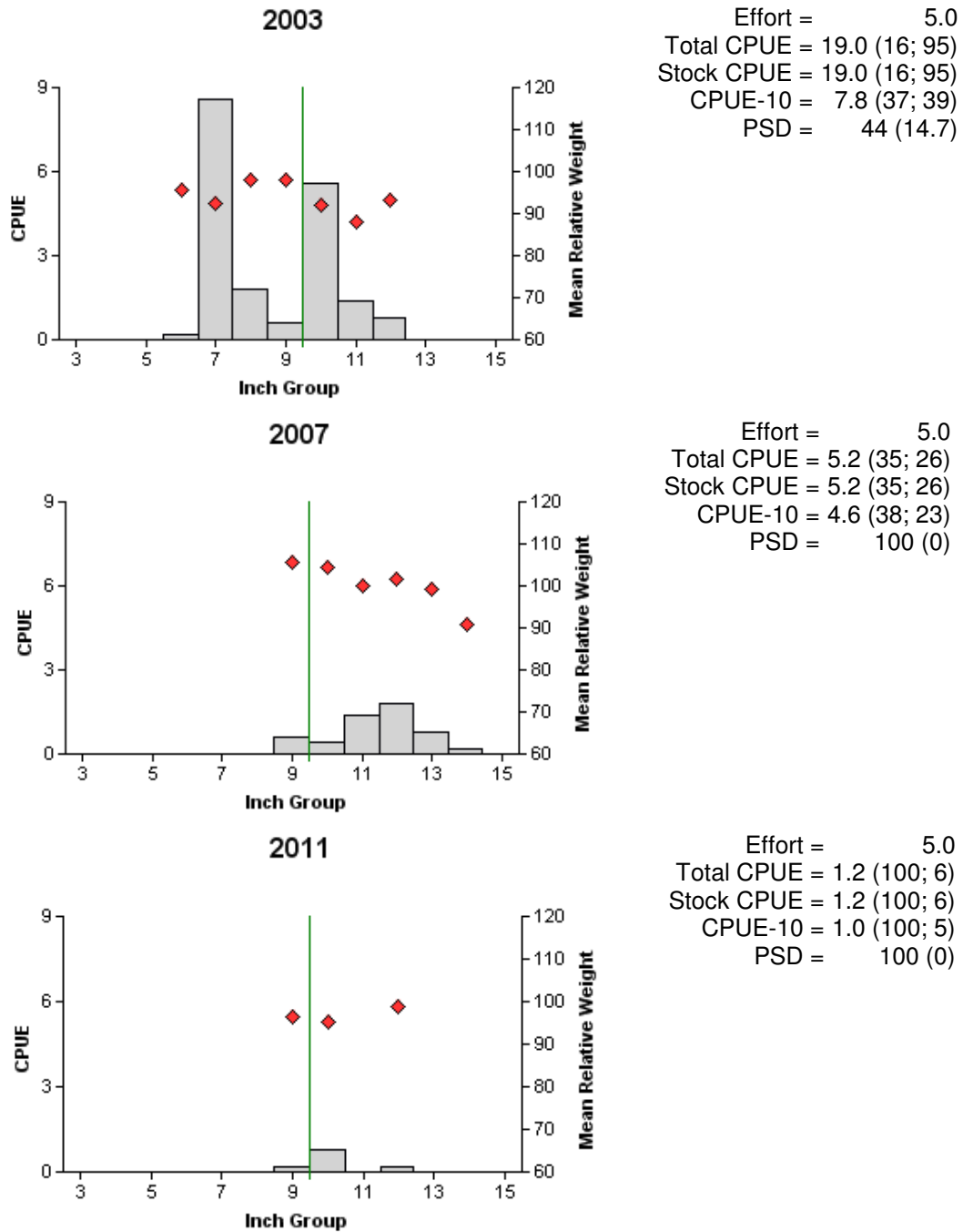CPUE-10 = 1.0 (100; 5)
PSD = 100 (0)

Figure 5. Number of white bass caught per net night (CPUE; bars), mean relative weight (diamonds), and population indices (RSE and N are in parentheses) for spring gill net surveys, Arlington Reservoir, Texas, 2003, 2007, and 2011. Vertical line represents length limit at time of sampling.

# Largemouth Bass

### 2008



Effort = 1.0
Total CPUE = 159.0 (15; 159)
Stock CPUE = 131.0 (18; 131)
CPUE-14 = 19.0 (37; 19)
PSD = 27 (5.8)
PSD-P = 11 (3.9)

### 2009



Effort = 1.0
Total CPUE = 121.0 (14; 121)
Stock CPUE = 65.0 (15; 65)
CPUE-14 = 19.0 (26; 19)
PSD = 62 (8)
PSD-P = 20 (6.2)

### 2010



Effort = 1.0
Total CPUE = 122.0 (15; 122)
Stock CPUE = 81.0 (23; 81)
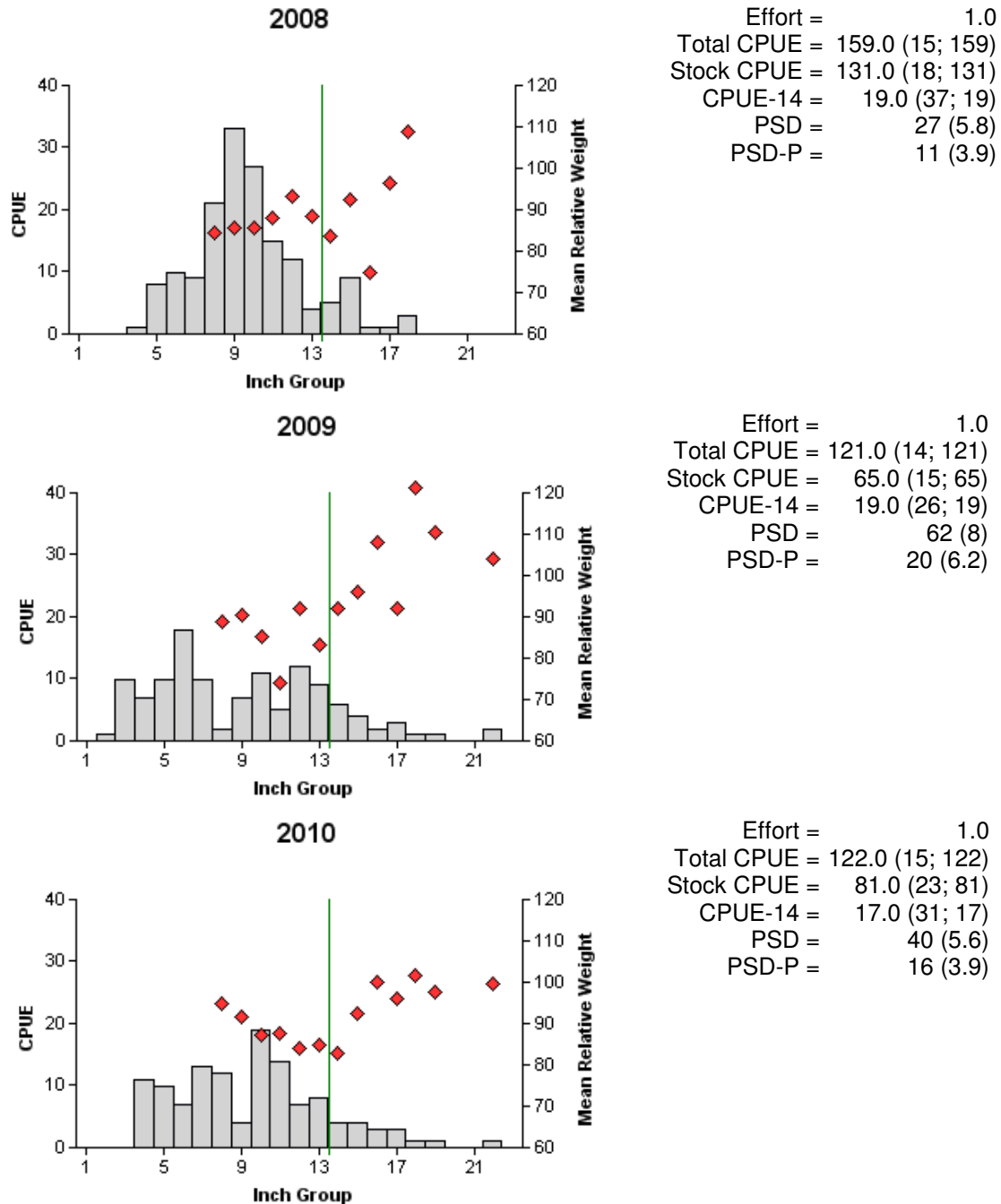CPUE-14 = 17.0 (31; 17)
PSD = 40 (5.6)
PSD-P = 16 (3.9)

Figure 6. 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, Arlington Reservoir, Texas, 2004-2006.  Vertical lines represent length limit at time of sampling.

Table 5.  Results of genetic analysis of largemouth bass collected by fall electrofishing, Arlington Reservoir, Texas, for various years.  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.

| Year | Sample size | Genotype | | | | % FLMB alleles | % pure FLMB |
| | | FLMB | F1 | Fx | NLMB | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 2002 | 28 | 1 | 0 | 25 | 2 | 71.6 | 3.6 |
| 2006 | 40 | 3 | 0 | 34 | 3 | 53.0 | 7.0 |
| 2010 | 30 | 0 | 0 | 30 | 0 | 58.0 | 0.0 |

# White Crappie

## 2002



Effort =               5.0
Total CPUE = 15.6 (23; 78)
Stock CPUE = 14.6 (23; 73)
CPUE-10 =    1.4 (36; 7)
PSD =                74 (4.5)

## 2006



Effort =               5.0
Total CPUE = 19.0 (50; 95)
Stock CPUE = 18.6 (52; 93)
CPUE-10 =    7.0 (45; 35)
PSD =                70 (2.5)

## 2010



Effort =               5.0
Total CPUE = 19.2 (35; 96)
Stock CPUE = 19.2 (35; 96)
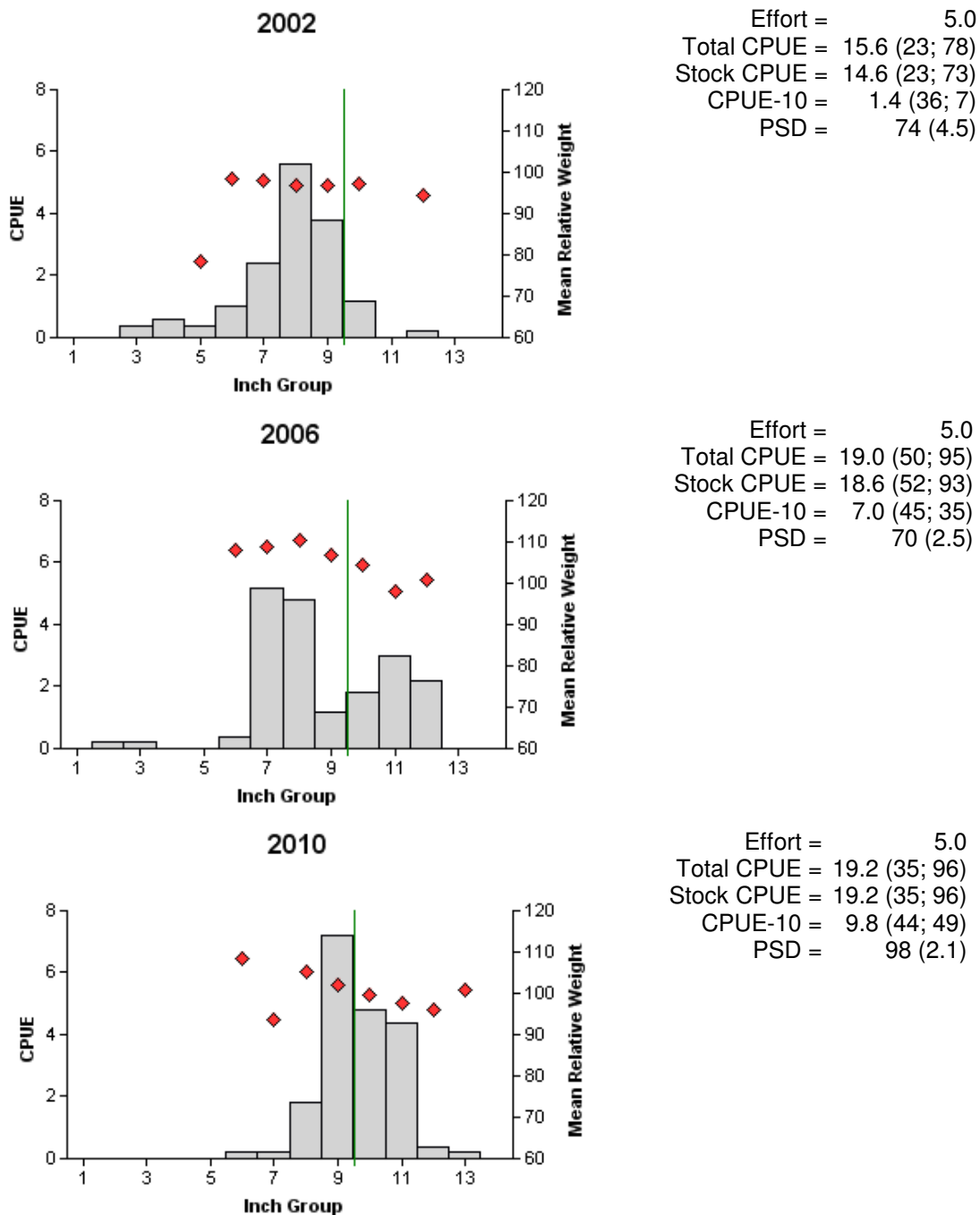CPUE-10 =    9.8 (44; 49)
PSD =                98 (2.1)

Figure 7.  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, Arlington Reservoir, Texas, 2002, 2006, and 2010.  Vertical line represents length limit at time of sampling.

Table 5.  Proposed sampling schedule for Arlington Reservoir, Texas.  Gill netting surveys are conducted in the spring, while electrofishing and trap netting surveys are conducted in the fall.  Standard surveys are denoted by S and additional surveys denoted by A.

| Survey Year | Electrofisher | Trap Net | Gill Net | Creel Survey | Vegetation Survey | Access Survey | Report |
|---|---|---|---|---|---|---|---|
| Fall 2011-Spring 2012 | | | | | | | |
| Fall 2012-Spring 2013 | | | | | | | |
| Fall 2013-Spring 2014 | | | | | | | |
| Fall 2014-Spring 2015 | S | S | S | | S | S | S |

**APPENDIX A**

Number (N) and catch rate (CPUE) of all species collected from all gear types from Arlington Reservoir, Texas, 2010-2011.

| Species | Gill Netting | | Trap Netting | | Electrofishing | |
|---|---|---|---|---|---|---|
| | N | CPUE | N | CPUE | N | CPUE |
| Spotted gar | 1 | 0.2 | | | | |
| Gizzard shad | 171 | 34.2 | | | 276 | 276.0 |
| Threadfin shad | | | | | 60 | 60.0 |
| Common carp | 13 | 2.6 | | | | |
| Channel catfish | 118 | 23.6 | | | | |
| Flathead catfish | 1 | 0.2 | | | | |
| White bass | 6 | 1.2 | | | | |
| Yellow bass | 119 | 23.8 | | | | |
| Bluegill | | | | | 483 | 483.0 |
| Longear sunfish | | | | | 92 | 92.0 |
| Redear sunfish | | | | | 11 | 11.0 |
| Largemouth bass | 1 | 0.2 | | | 122 | 122.0 |
| White crappie | | | 96 | 19.2 | | |
| Freshwater drum | 11 | 2.2 | | | | |

**APPENDIX B**
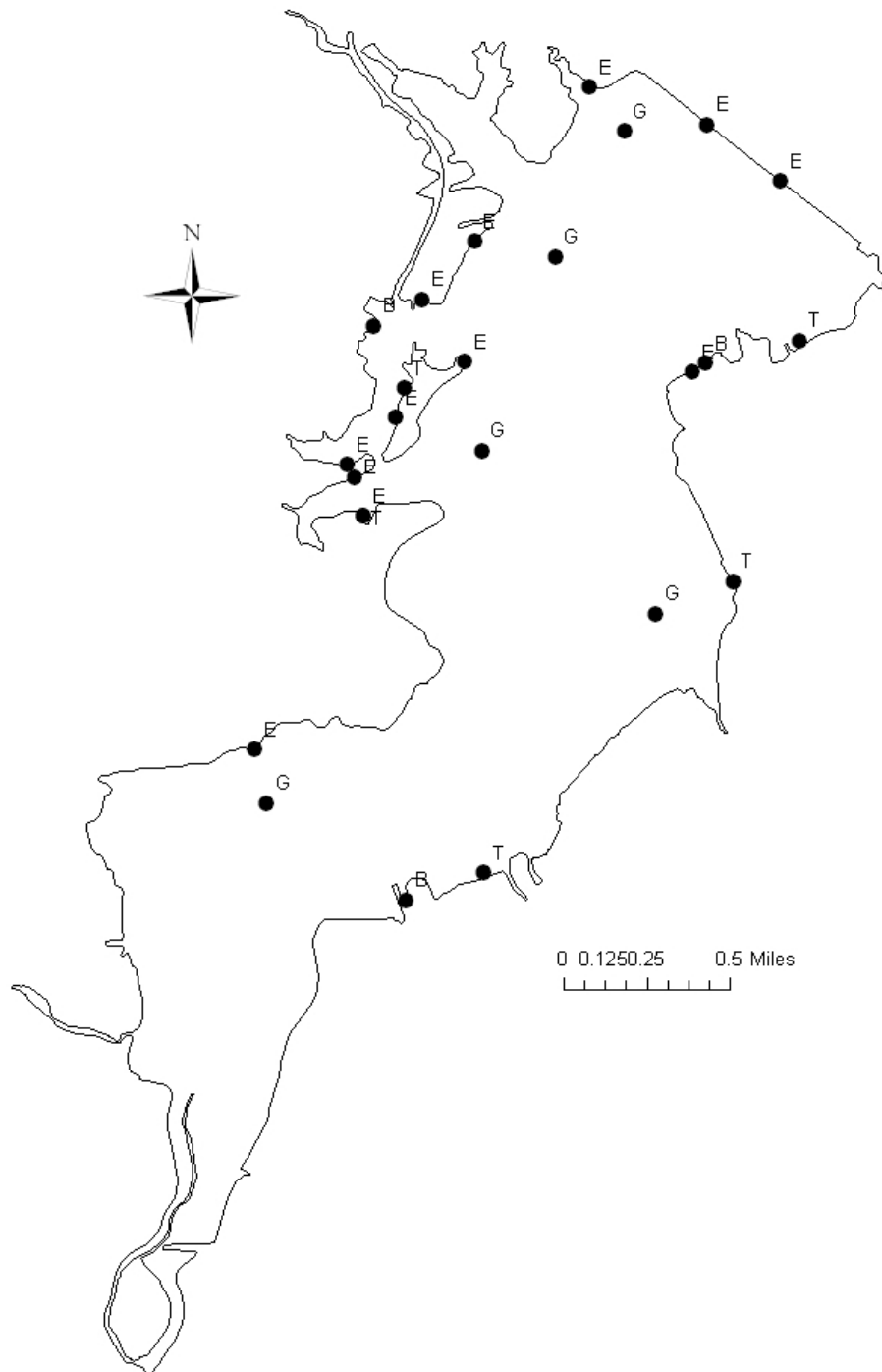


Location of sampling sites, Arlington Reservoir, Texas, 2006-2007. Trap net, gill net, and electrofishing stations are indicated by T, G, and E, respectively. Boat ramps are indicated with a B.

**APPENDIX C**

Historical catch rates for targeted species by gear type for Arlington Reservoir, Texas.

| | | Year | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gear | Species | 1992 | 1995 | 1998 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
| Gill Netting | Channel catfish | 17.0 | 9.4 | 7.8 | | 17.4 | | 8.6 | | | | 15.0 | | | | 23.6 |
| (fish/net night) | White bass | 2.4 | 11.6 | 9.2 | | 4.8 | | 19.0 | | | | 5.2 | | | | 1.2 |
| Electrofishing | Gizzard shad | 211.3 | 339.3 | 194.0 | 275.0 | | 96.0 | | 208.0 | 264.0 | 303.0 | | 328.0 | 221.0 | 276.0 | |
| (fish/hour) | Threadfin shad | 12.7 | 164.0 | 195.0 | 476.0 | | 416.0 | | 154.0 | 1085.0 | 528.0 | | 992.0 | 334.0 | 60.0 | |
| | Bluegill | 199.3 | 212.0 | 236.0 | 188.0 | | 390.0 | | 295.0 | 210.0 | 353.0 | | 295.0 | 335.0 | 483.0 | |
| | Longear sunfish | | 36.0 | 59.0 | 108.0 | | 132.0 | | 96.0 | 72.0 | 94.0 | | 88.0 | 145.0 | 92.0 | |
| | Redear sunfish | 2.7 | 2.7 | 1.0 | 6.0 | | 1.0 | | 0.0 | 0.0 | 0.0 | | 9.0 | 3.0 | 0.0 | |
| | Largemouth bass | 164.0 | 174.7 | 144.0 | 126.0 | | 81.0 | | 86.0 | 147.0 | 94.0 | | 159.0 | 121.0 | 122.0 | |
| Trap Netting (fish/net night) | White crappie | 8.6 | 2.8 | 4.0 | | | 15.6 | | | | 19.0 | | | | 19.2 | |