

PERFORMANCE REPORT

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INLAND FISHERIES DIVISION MONITORING AND MANAGEMENT PROGRAM

2014 Fisheries Management Survey Report

Casa Blanca Reservoir

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SURVEY AND MANAGEMENT SUMMARY

Fish populations in Casa Blanca Reservoir were surveyed in 2014 using electrofishing and in 2015 using gill nets. Sampling strategy changed from standardized sampling to objective based sampling in the 2014-2015 sampling year. Historical data are presented with the 2014-2015 data for comparison. This report summarizes survey results and contains a management plan for the reservoir based on those findings.

- **Reservoir Description:** Casa Blanca is a 1,055 acre reservoir located near Laredo, Texas, in the Rio Grande River watershed. In 1990, the county park located on the lower end of the reservoir was acquired by Texas Parks and Wildlife (TPW) and opened in March of 1991 as Lake Casa Blanca International State Park. Major uses include recreation and irrigation for a golf course. The reservoir has a history of substantial water level fluctuation. Angler and boat access is very good. A little less than half of the shoreline was rocky or gravelly, and aquatic plants and flooded terrestrial vegetation occupied about 50% of the reservoir in 2013 and 2014. Considerable shoreline access, including a fishing pier, exists for bank angling.
- **Management History:** Important sport fishes include Largemouth Bass, catfishes, and hybrid striped bass. Harvest of all sport fish species except Largemouth Bass has been regulated according to statewide size and daily bag limits. Largemouth Bass harvest is currently regulated with an 18-inch minimum size limit (implemented in 1994). Palmetto bass have been stocked regularly with stockings occurring in seven years since 2004. In 2014, sunshine bass were stocked instead of palmetto bass. Florida Largemouth Bass fingerlings were last stocked in 2011. ShareLunker fingerlings were stocked in 2006, 2008, and 2010.
- **Fish Community**
 - **Prey species:** Gizzard Shad and Bluegill were the primary forage species. Gizzard Shad abundance was high and most were suitably sized for forage. Bluegill were present in sufficient quantity and size to support predator species. Other prey species were also present in adequate numbers.
 - **Catfishes:** Abundance of Blue and Channel catfishes was good; however, the populations were dominated by small fish. Flathead Catfish continue to exist in the reservoir.
 - **Hybrid Striped Basses:** Hybrid striped bass abundance was good. Fish up to 23 inches were collected and fish grew rapidly.
 - **Largemouth Bass:** Largemouth Bass abundance was good, including numerous fish above the 18-inch minimum length limit. They grew to 14 inches in less than two years.
 - **Crappies:** White and Black crappies continued to exist in the reservoir.
- **Management Strategies:** Continue to manage fisheries with current regulations. Stock hybrid striped bass annually at the rate of 15 fingerlings per acre. Collect angler utilization data. Fishes will be sampled every four years according to the objective based sampling plan.

INTRODUCTION

This document is a summary of fisheries data collected from Casa Blanca Reservoir in 2014-2015. 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 2014-2015 data for comparison.

Reservoir Description

Casa Blanca is a 1,055 acre reservoir located near Laredo, Texas, in the Rio Grande River watershed. In 1990, the county park located on the lower end of the reservoir was acquired by Texas Parks and Wildlife and opened in March of 1991 as Lake Casa Blanca International State Park (LCBISP). Major uses include recreation and irrigation for a golf course. The reservoir, fed by a 117 square mile drainage area of Chacon and San Ygnacio Creeks, has a history of substantial water level fluctuation; however water level records have not been recorded for this reservoir. A little less than half (44%) of the shoreline is rocky or gravelly and the remaining is considered natural (i.e. non-descript). Aquatic plants, primarily bulrush and cattails, typically occupy about 15% of the reservoir and flooded terrestrial vegetation occupies about 10%. Considerable shoreline access, including a fishing pier, exists for bank angling. Other descriptive characteristics for Casa Blanca Reservoir are in Table 1.

Angler Access

Angler and boat access is good. There is one public boat ramp at the LCBISP and one private boat ramp located in a housing subdivision (Table 2). Public shoreline angling access exists throughout LCBISP, and includes a challenged-accessible fishing pier.

Management History

Previous management strategies and actions: Management strategies and actions from the previous survey report (Dennis and Myers 2011) included:

1. Stock palmetto bass fingerlings annually at a rate of 15 fish/acre.
Action: Palmetto bass were stocked in 2011 and 2013 and sunshine bass were stocked in 2014. Stocking rate averaged 16 fish/acre.
2. Continue use and evaluation of the 18-inch minimum size and 5-fish daily bag limits. Conduct additional largemouth bass-only electrofishing in the spring of 2013 to monitor the population.
Action: An additional spring electrofishing survey was completed in 2013.
3. Many invasive species threaten aquatic habitats and organisms in Texas and can adversely affect the state ecologically, environmentally, and economically.
Action: Visual inspections for zebra mussels were conducted near the boat ramp.

Harvest regulation history: All sport fishes, except Largemouth Bass, are currently managed with statewide regulations (Table 3). In 1994, 18-inch minimum length (MLL) and 3-fish daily bag limits (DBL) were enacted for Largemouth Bass. The DBL was changed to 5 fish in 1995.

Stocking history: Palmetto bass were first stocked in 1977 and have been stocked regularly since 1984. Sunshine bass were stocked for the first time in 2014. Florida Largemouth Bass were stocked periodically from 1978 to 2011. ShareLunker (Florida Largemouth Bass that weigh more than 13 pounds and are donated to TPW as brood fish) Largemouth Bass fingerlings were stocked in 2006, 2008, and 2010. The complete stocking history is in Table 4.

Vegetation/habitat management history: No habitat or vegetation management activities have been conducted on this reservoir.

Water transfer: No interbasin transfers are known to exist.

METHODS

Surveys were conducted to achieve survey and sampling objectives in accordance with objective-based sampling plan (Appendix A). Fishes were collected with gill nets (5 net nights at 5 stations in the main basin area of the reservoir) and by electrofishing (1.8 hours at 21, 5-minute daytime stations). An additional daytime spring bass-only electrofishing sample was conducted in 2013 for 1 hour at 12, 5-minute stations. All stations were randomly selected. 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 sampling objectives were met.

Sampling locations for 2014-2015 sampling year, by gear type, are shown in Appendix B.

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) and Dumont and Neely (2011). 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 ($RSE = 100 \times SE$ of the estimate/estimate) was calculated for all CPUE statistics.

Largemouth bass collected in 2014 (N=13) and hybrid striped bass in 2015 (N=30) were aged using otoliths in accordance to the Fishery Assessment Procedures (TPWD, Inland Fisheries Division, unpublished manual revised 2014).

A shoreline structural habitat survey was conducted in 2010 and vegetation surveys were conducted in 2013 and 2014. These surveys were conducted using the random point sampling method according to the TPWD Fishery Assessment Procedures in effect at time of the surveys.

No water level data is available for the reservoir.

RESULTS AND DISCUSSION

Habitat: In 2013 and 2014, native emergent vegetation (bulrush and cattail) occupied 18% and 22% of the reservoir, respectively (Table 5). Rock and gravel comprised 11.9% and 32.2% of the shoreline, respectively, from the 2010 survey (Table 6).

Prey species: Electrofishing CPUE of Gizzard Shad (Figure 1) in 2014 (daytime electrofishing) was high (202 fish/h). Index of vulnerability for Gizzard Shad was 76, indicating good availability, in terms of size, for predators. Bluegill electrofishing CPUE (Figure 2) was 51/h in 2014 and PSD was 17. The low PSD indicates that most of the Bluegill were adequately sized to serve as prey. Other important prey species include Threadfin Shad, Mexican Tetras, other sunfishes, and Rio Grande Cichlids. The combined CPUE for those species in 2014 was 46/h with the majority of that (76%) being Threadfin Shad (Appendix B).

Catfishes: Gillnet CPUE of Blue Catfish (Figure 3) in 2015 was 9.4/nn which was greater than in 2011 (2.4/nn) and similar to that in 2007 (10.8/nn). Most fish collected in 2015 (68%) were ≤ 12 inches. While the population is dominated by small fish, individuals up to 25 inches were collected, indicating fishery potential. Gillnet CPUE of Channel Catfish was high in 2015 (21.0/nn; Figure 4); however, only 3 of the 105 fish collected were 12-inches (legal sized) or larger. From 2007-2015, only 6 legal sized Channel Catfish have been collected in the gill net surveys. The population size structure remained insufficient to support a fishery. A single Flathead Catfish was collected in gill nets.

Hybrid Striped Bass: Sunshine bass (female White Bass x male Striped Bass) were first stocked in Casa Blanca Reservoir in 2014. Prior to 2014 palmetto bass (female Striped Bass x male White Bass) were stocked. Therefore these two species will be combined for the purposes of this report. The gillnet CPUE of hybrid striped bass in 2015 was 15.6/nn (Figure 5). Palmetto bass gill net CPUE in 2007 and 2011 was 5.0 and 6.4/nn respectively. Palmetto bass stocked in 2013 and 2011 grew to 15 and 21 inches, respectively by 2015 (Figure 6). Of the 30 fish collected for age determination, a single 11 inch

fish was determined to be one-year old and assumed to be a sunshine bass.

Largemouth Bass: Electrofishing CPUE of Largemouth Bass in 2014 (daytime sample) was 110 fish/h (Figure 7) with 11 fish (6.3/h) above the 18-inch MLL being collected. Average relative weights were above 80 and increased with size ($Wr=2.0733*\text{InchGroup}+68.625$; $r^2=0.68$). Largemouth Bass grew rapidly; the thirteen fish collected in 2014 between 13 and 15 inches in length were identified to be from the 2013 year class (2 years old), indicating excellent growth. Night electrofishing CPUE of Largemouth Bass in 2006 and 2010 was 58 and 73 fish/h, respectively and only 13 Largemouth Bass were collected in the 2013 spring sample, but 5 of them were above the 18-inch MLL. Based on these findings, fall day electrofishing should continue to be used to evaluate the Largemouth Bass population. The percentage of FLMB alleles in the population remained high (>80) from 2000 to 2010; however, the percent of fish in the population that were FLMB genotype decreased during the same period from a high of 67 in 2002 to a low of 13 in 2010 (Dennis and Myers 2011).

Crappies: Twenty eight White Crappie and one Black Crappie were collected in gillnets indicating their continued existence in the reservoir.

Fisheries Management Plan for Casa Blanca Reservoir, Texas

Prepared – July 2015.

ISSUE 1: All angler information available to us is anecdotal in nature. Our sampling and stocking objectives are based on that information. More detailed data is needed to adequately manage these fisheries resources.

MANAGEMENT STRATEGY

1. Work with the LCBISP staff to develop a protocol to collect some basic baseline data on angler use at the reservoir.

MANAGEMENT STRATEGY

ISSUE 2: According to anecdotal information, hybrid Striped Bass are a popular sport fish in Casa Blanca Reservoir. Because natural reproduction of these species does not occur in the reservoir, stocking is necessary to support this fishery.

MANAGEMENT STRATEGY

2. Stock hybrid Striped Bass fingerlings annually at a rate of 15 fish/acre.

ISSUE 3: 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 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.

Objective-Based Sampling Plan and Schedule

2016-2019

Sport fish, forage fish, and other important fishes : Sport fishes in Casa Blanca Reservoir include Largemouth Bass and Hybrid Striped Bass. Known important forage species include Bluegill and Gizzard Shad.

Survey objectives, fisheries metrics, and sampling objectives:

A complete sampling schedule is in Table 7.

Angler utilization: All angler use information for Casa Blanca Reservoir is anecdotal in nature. More detailed objectively collected data is required to better manage the fisheries. Our objective is to partner with the LCBISP staff to collect baseline angler use data for a one-year period within the 2016-2019 sampling period.

Largemouth Bass: Largemouth Bass in Casa Blanca Reservoir are an important sport fish and have been managed with an 18-inch minimum length limit since 1994. Additionally, six Sharelunkers have been donated from Casa Blanca since 1994. Our objective is to monitor large-scale changes in size structure and growth. Sampling will be conducted to collect at least 50 stock-sized and larger fish for size structure analysis and 13 fish between 13.0 and 15.0 inches for age and growth analysis. The sampling will consist of a minimum of 18 randomly selected daytime stations. Additional sampling will occur at up to 6 more randomly selected stations to insure the objectives are met. If the target numbers of fish are not collected with the 24 random electrofishing stations, up to 12 additional random stations will be sampled on another day. Sampling will occur once every four years. The next sampling will be fall 2018.

Hybrid Striped Bass: Both palmetto bass and sunshine bass have been stocked in this reservoir. At least one of these species has been stocked on a near annual basis. Our objective is to monitor for large-scale population changes in size structure and determine general stocking success. Sampling to collect 50 stock-sized and larger hybrid striped bass for size structure analysis will consist of 5 gill nets set at random sites in the main basin area of the reservoir. If that target is not reached, an additional five nets will be set at randomly selected stations also in the main basin. Sampling will cease after 10 nets. Sampling will occur once every four years. The next sampling will be spring 2019.

Blue Catfish: While we are currently unaware of a targeted Blue Catfish fishery in Casa Blanca Reservoir, based on previous gill net catches, the reservoir could support a limited fishery for this species. Our objective is to determine if a fishery currently exists through our collection of baseline angler data. No additional sampling will be expended unless deemed appropriate based on the findings of our angler utilization survey.

Bluegill and Gizzard Shad: Bluegill and Gizzard Shad are the primary forage fishes at Casa Blanca Reservoir. While CPUE of both species is variable, major changes in their relative abundances can be indicated in CPUE trend data. Sampling of these species concurrently with Largemouth Bass sampling should provide adequate CPUE precision ($RSE \leq 25$) of Bluegill and Gizzard Shad to detect major changes in relative abundance. No additional effort will be expended to increase the number of Bluegill or Gizzard Shad collected.

Negligible fisheries: Channel catfishes and Black and White crappies

Channel and Flathead catfishes: Based on historic gill net catches, these species' populations may only support minimal fisheries. As such, sampling for presence/absence is all that is required. Sampling for Channel and Flathead catfishes will be done as a corollary to our hybrid striped bass sampling every four years. Hybrid striped bass sampling will be done by 5-10 gill nets set at randomly selected locations in the main basin of the reservoir.

Black and White crappies: Black and White crappies exist in this reservoir. Historic random trap nets have indicated a low abundance population. Until anecdotal information indicates a change has occurred, presence/absence information is all that is required. As crappies have been collected in randomly set gill nets, their presence or absence in gill nets set for hybrid striped bass will be used to monitor their continued existence in the reservoir.

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- Dennis, J. A., and R. Myers. 2011. Statewide freshwater fisheries monitoring and management program survey report for Casa Blanca Reservoir, 2011. Texas Parks and Wildlife Department, Federal Aid Report F-221-M-1, Austin.
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Table 1. Characteristics of Casa Blanca Reservoir, Texas.

Characteristic	Description
Year constructed	1951
Controlling authority	Webb County and TPWD
County	Webb
Reservoir type	Off stream
Shoreline Development Index	2.3
Conductivity	593 μ S/cm

Table 2. Boat ramp characteristics for Casa Blanca Reservoir, Texas, August, 2014.

Boat ramp	Latitude Longitude (dd)	Public	Parking capacity (N)	Elevation at end of boat ramp (ft)	Condition
Casa Blanca	27.533271	Y	40	Unknown	Good
International State Park	-99.43964				
Subdivision	27.553111 -99.43816	N	5	Unknown	Unknown

Table 3. Harvest regulations for Casa Blanca Reservoir, Texas.

Species	Bag limit	Length limit (inches)
Gar, Alligator	1	None
Catfish: Blue and Channel, their hybrids and subspecies	25 (in any combination)	12-inch minimum
Catfish, Flathead	5	18-inch minimum
Bass, White	25	10-inch minimum
Bass, Hybrid Striped	5	18-inch minimum
Bass, Largemouth	5	18-inch minimum
Crappie: White and Black, their hybrids and subspecies	25 (in any combination)	10-inch minimum

Table 4. Stocking history of Casa Blanca Reservoir, Texas.

Species	Year	Number Stocked	Size
Bass, Florida Largemouth	2011	173,838	Fingerling
	2004	168,570	Fingerling
	2003	106,326	Fingerling
	1995	82,487	Fingerling
	1994	82,434	Fingerling
	1992	81,807	Fingerling
	1983	80,050	Fingerling
	1982	100,625	Fingerling
	1978	1,693	Fingerling
	Total	157,623	
Bass, Largemouth	1966	68,430	Unknown
Bass, Palmetto	2013	25,203	Fingerling
	2011	12,413	Fingerling
	2009	17,375	Fingerling
	2008	12,266	Fingerling
	2007	10,719	Fingerling
	2005	16,061	Fingerling
	2004	16,966	Fingerling
	2000	21,582	Fingerling
	1998	25,038	Fingerling
	1997	24,930	Fingerling
	1995	37,161	Fingerling
	1994	41,040	Fingerling
	1982	159,000	Unknown
	1981	23,550	Unknown
	1979	21,975	Unknown
	1977	35,000	Unknown
Total	500,279		
Bass, ShareLunker Largemouth	2010	2,091	Fingerling
	2008	2,782	Fingerling
	2006	4,517	Fingerling
	Total	9,390	

Table 4. (Continued).

Species	Year	Number Stocked	Size
Bass, Striped	1996	24,840	Fingerling
Bass, Sunshine	2014	13,190	Fingerling
Bluegill	2003	105,072	Fingerling
Catfish, Blue	1988	15	Adult
	1966	10,000	Fingerling
	Total	10,015	
Catfish, Channel	2014	624	Fingerling
	2013	609	Fingerling
	2012	510	Fingerling
	2011	613	Fingerling
	2010	670	Fingerling
	2009	663	Fingerling
	2008	606	Fingerling
	2003	800	Adult
	1972	1,200	Unknown
	1966	38,700	Unknown
	Total	44,995	
Catfish, Flathead	1966	12	
Crappie, Black	1966	23,000	
Crappie, White	1994	94	Adult
	1994	80,165	Fry
	1966	2,050	Unknown
	Total	82,309	
Drum, Red	1963	490	Fingerling
Sunfish, Green x Redear	1966	3,000	Unknown
Walleye	1973	30,000	Unknown

Table 5. Results of random point sampling habitat surveys conducted in August 2013 (N = 122 points) and 2014 (N = 87 points). Percent occurrence with lower and upper 95% confidence limits (CL) is shown for major habitat/vegetation types.

Habitat/vegetation type	Percent occurrence		Lower 95% CL		Upper 95% CL	
	2013	2014	2013	2014	2013	2014
Open water	56	55	47	45	65	66
Flooded terrestrial vegetation	30	25	21	16	38	34
Standing timber/stumps	7	6	2	1	11	10
Native emergent	18	22	11	14	25	32
Bulrush	17	22	11	13	24	31
Cattails	1	1	<1	<1	2	3

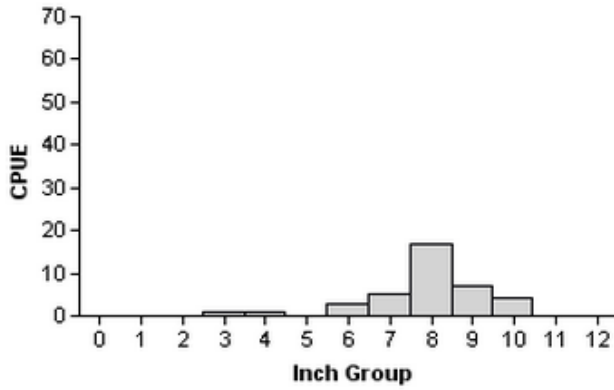
Table 6. Results of a structural habitat survey conducted at Casa Blanca Reservoir, Texas, in August, 2010. Linear distance (miles) was estimated for each habitat type for the 25.6 miles of shoreline using 83 randomly selected sample points.

Habitat type	Linear distance	Percent	Lower 95% CL	Upper 95% CL
Natural shoreline	14.3	55.9	43.9	67.9
Rock	3.0	11.9	3.9	19.9
Gravel	8.2	32.2	20.2	44.2

Gizzard Shad

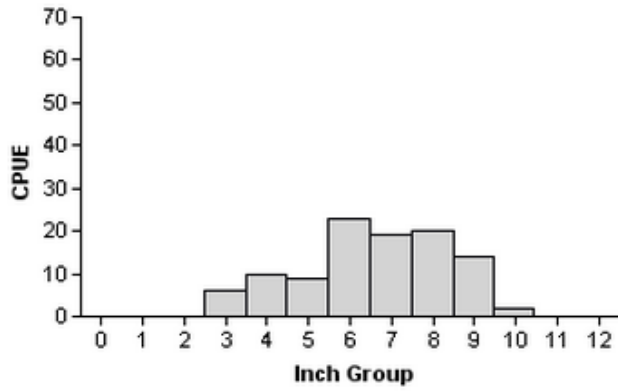
2006

Effort = 1.0
 Total CPUE = 38.0 (23; 38)
 IOV = 26 (8.1)



2010

Effort = 1.0
 Total CPUE = 103.0 (12; 103)
 IOV = 65 (6.2)



2014

Effort = 1.8
 Total CPUE = 202.3 (17; 354)
 IOV = 76 (7.9)

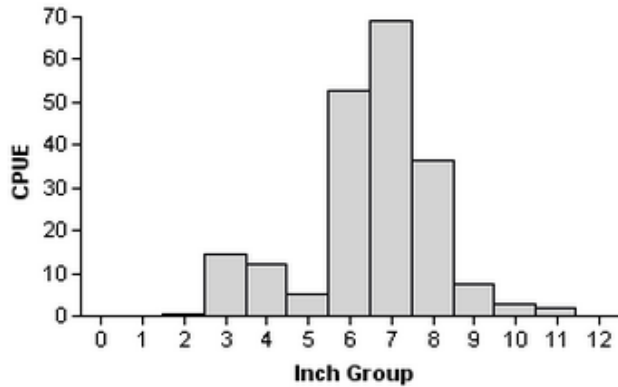
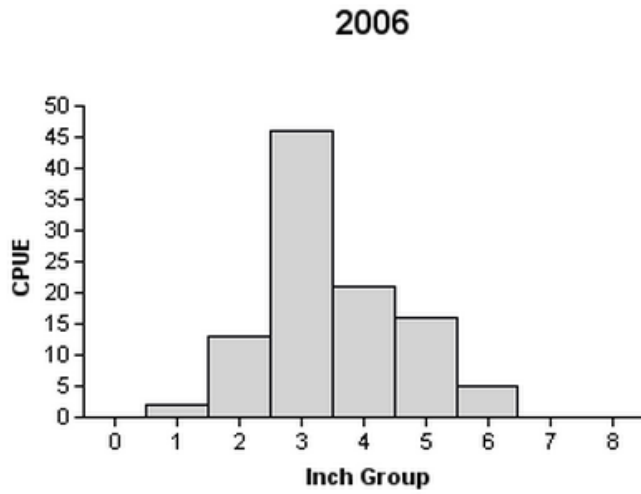
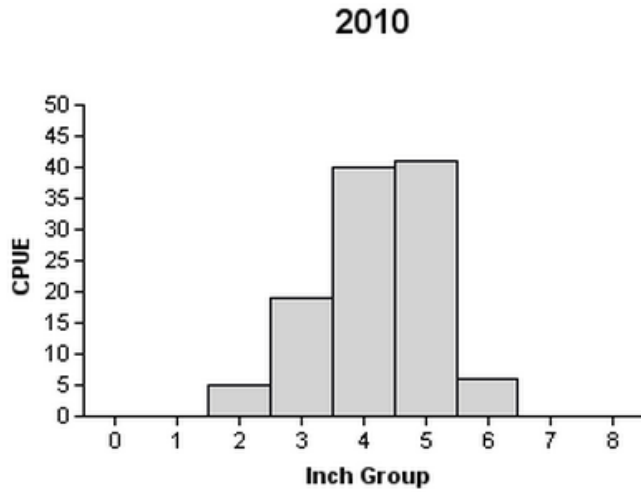


Figure 1. Number of Gizzard Shad caught per hour (CPUE) and population indices (RSE and N for CPUE and SE for IOV are in parentheses) for fall night time (2006 and 2010) and fall daytime (2014) electrofishing surveys, Casa Blanca Reservoir, Texas.

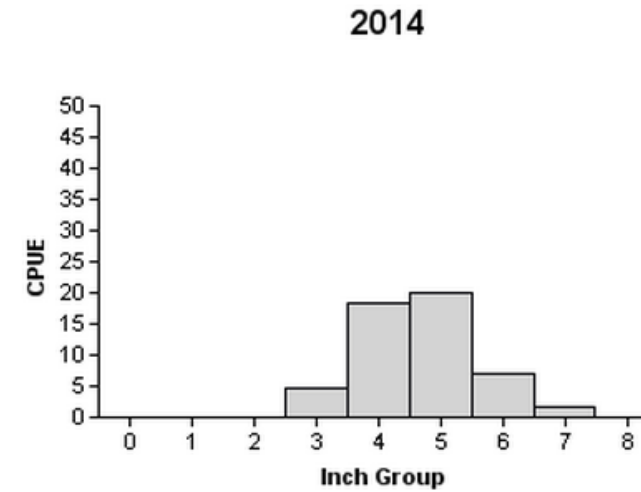
Bluegill



Effort = 1.0
 Total CPUE = 103.0 (33; 103)
 Stock CPUE = 88.0 (32; 88)
 PSD = 6 (3.3)



Effort = 1.0
 Total CPUE = 111.0 (40; 111)
 Stock CPUE = 106.0 (41; 106)
 PSD = 6 (2.2)



Effort = 1.8
 Total CPUE = 51.4 (19; 90)
 Stock CPUE = 51.4 (19; 90)
 PSD = 17 (3.5)

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 night time (2006 and 2010) and fall daytime (2014) electrofishing surveys, Casa Blanca Reservoir, Texas.

Blue Catfish

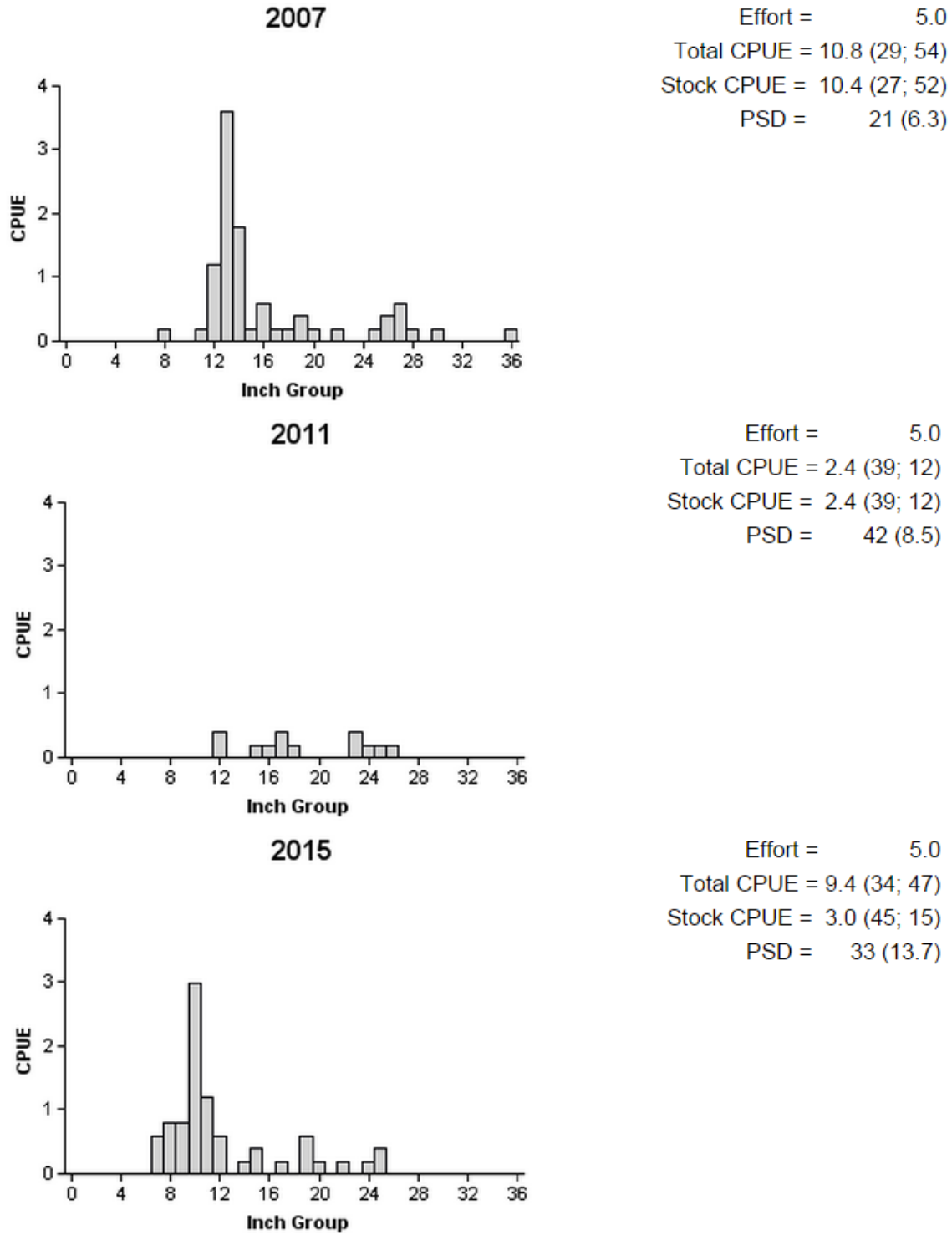
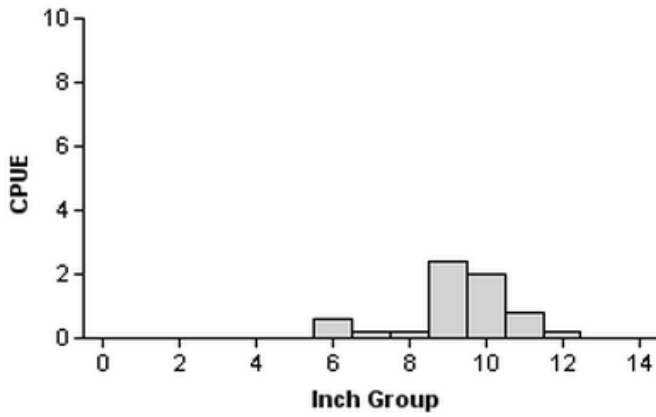


Figure 3. Number of Blue Catfish caught per net night (CPUE, bars) and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for spring gill net surveys, Casa Blanca Reservoir, Texas, 2007, 2011 and 2015. In 2015, sampling was restricted to the main basin area of the reservoir.

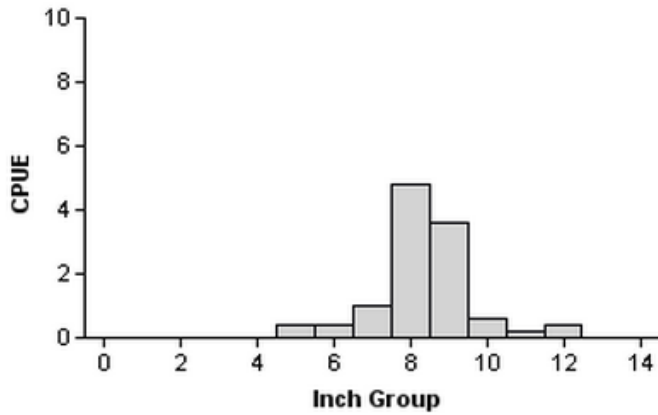
Channel Catfish

2007



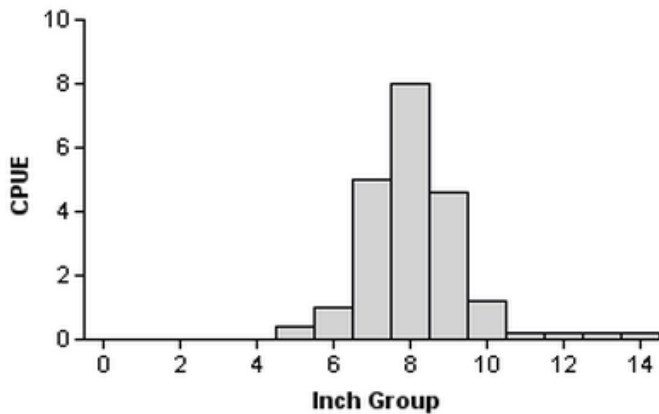
Effort = 5.0
 Total CPUE = 6.4 (20; 32)
 Stock CPUE = 1.0 (63; 5)
 PSD = 0 (343.5)

2011



Effort = 5.0
 Total CPUE = 11.4 (39; 57)
 Stock CPUE = 0.6 (41; 3)
 PSD = 0 (1210.5)

2015



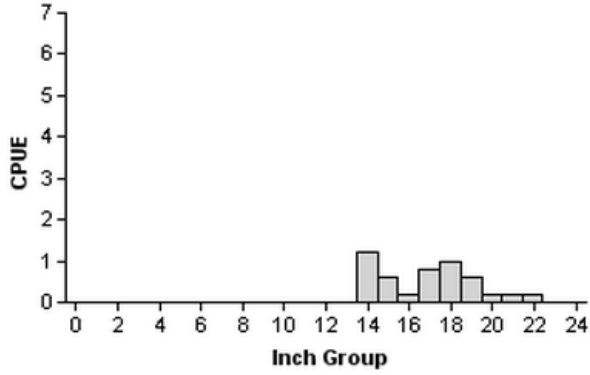
Effort = 5.0
 Total CPUE = 21.0 (17; 105)
 Stock CPUE = 0.8 (61; 4)
 PSD = 0 (1390.5)

Figure 4. Number of Channel Catfish caught per net night (CPUE, bars) and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for spring gill net surveys, Casa Blanca Reservoir, Texas, 2007, 2011 and 2015. In 2015, sampling was restricted to the main basin area of the reservoir.

Hybrid Striped Bass

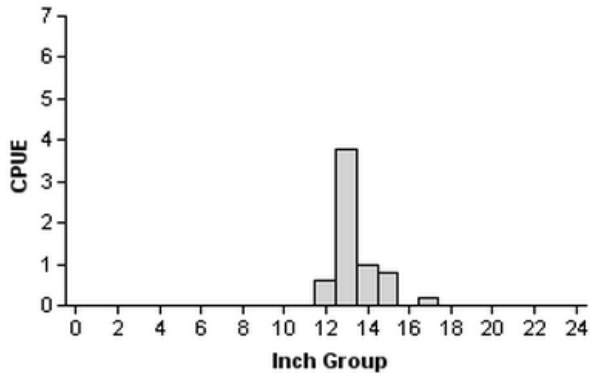
2007

Effort = 5.0
 Total CPUE = 5.0 (25; 25)
 Stock CPUE = 5.0 (25; 25)
 PSD = 64 (4.2)



2011

Effort = 5.0
 Total CPUE = 6.4 (53; 32)
 Stock CPUE = 6.4 (53; 32)
 PSD = 3 (1.9)



2015

Effort = 5.0
 Total CPUE = 15.6 (28; 78)

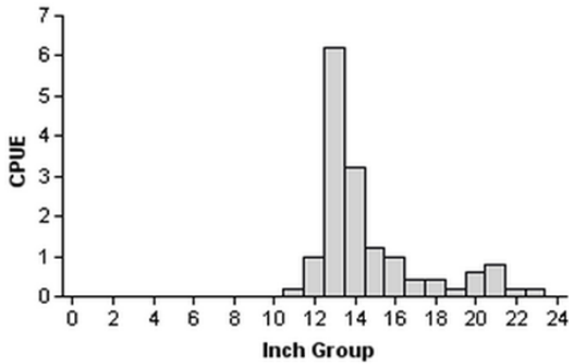


Figure 5. Number of Hybrid Striped Bass caught per net night (CPUE, bars; RSE and N for CPUE are in parentheses) for spring gill net surveys, Casa Blanca Reservoir, Texas, 2007, 2011, and 2015. Fish collected in 2007 and 2011 are Palmetto Bass and fish collected in 2015 are either Palmetto or Sunshine Bass. In 2015, sampling was restricted to the main basin area of the reservoir.

Hybrid Striped Bass

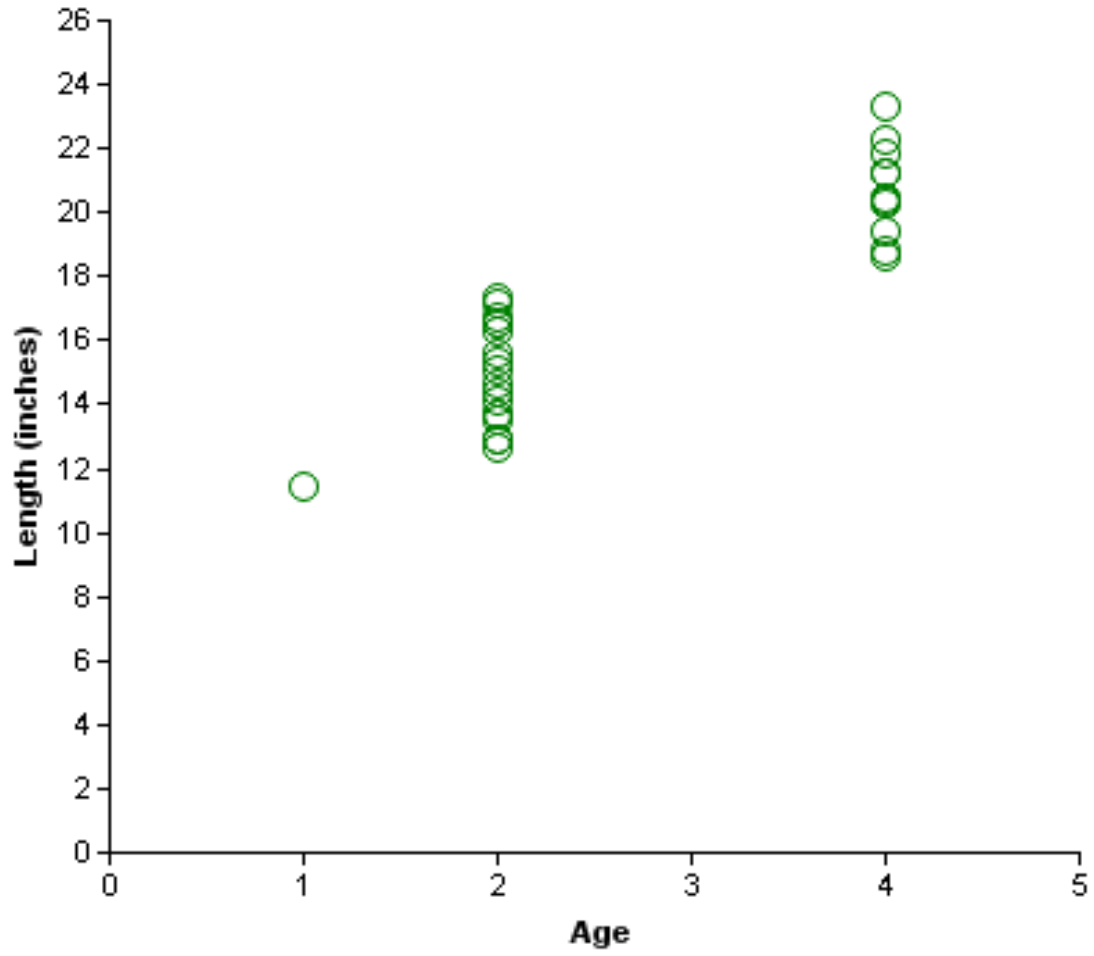


Figure 6. Length at age of 30 hybrid striped bass collected by gill netting from Casa Blanca Reservoir in 2015. Palmetto bass were stocked prior to 2014 and sunshine bass were stocked in 2014.

Largemouth Bass

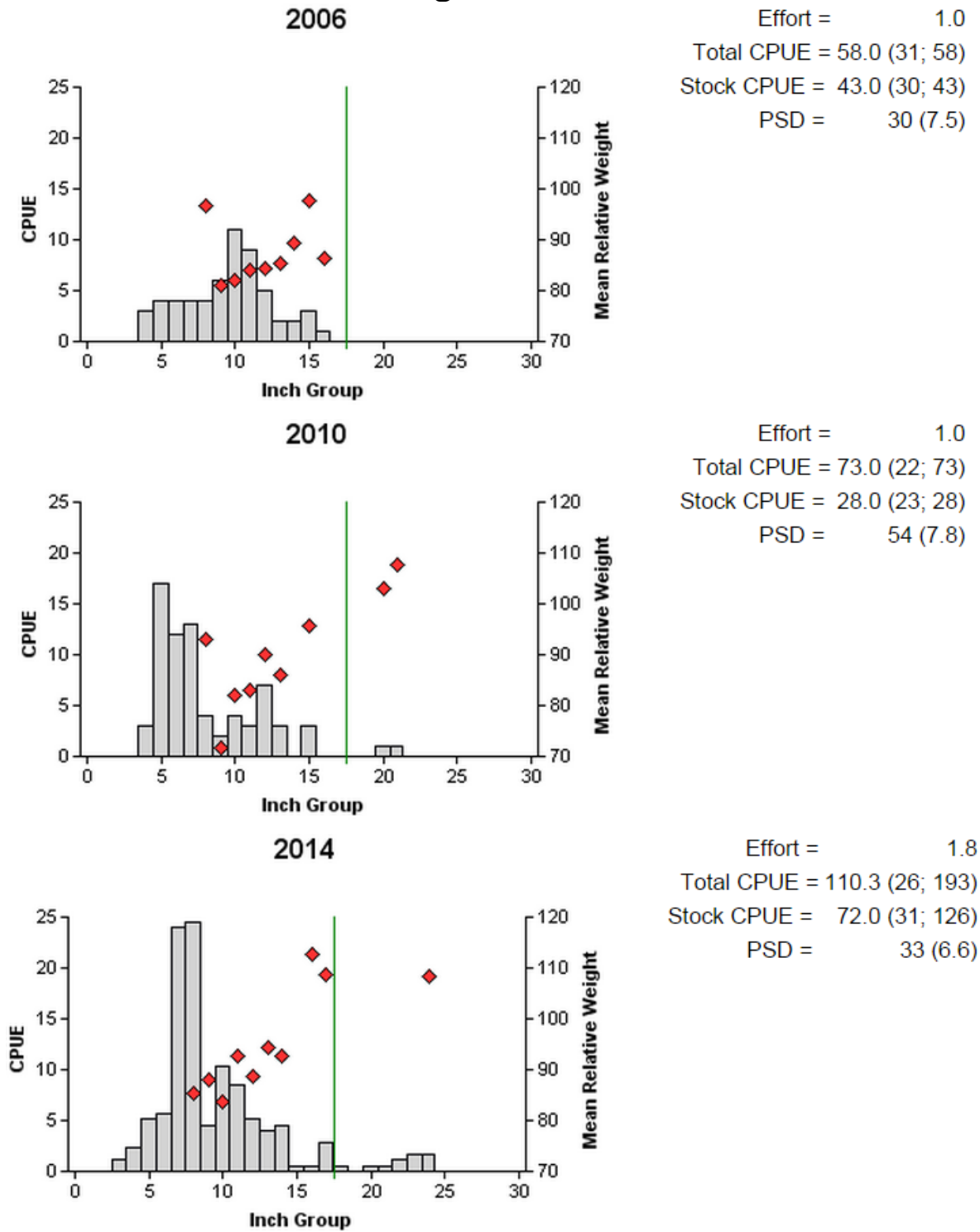


Figure 7. Number of Largemouth Bass caught per hour (CPUE, bars), mean relative weight (diamonds), and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for fall night time (2006 and 2010) and fall daytime (2014) electrofishing surveys, Casa Blanca Reservoir, Texas. Green line denotes 18-inch minimum length limit.

Table 7. Proposed sampling schedule for Casa Blanca Reservoir, Texas. Survey period is June through May. Gill netting surveys are conducted in the spring, while electrofishing surveys are conducted in the fall. Standard survey denoted by S.

Survey year	Electrofishing Fall(Spring)	Trap net	Gill net	Habitat			Creel survey	Report
				Structural	Vegetation	Access		
2015-2016								
2016-2017								
2017-2018								
2018-2019	S		S		S	S		S

APPENDIX A

Sampling Plan for Casa Blanca Reservoir
Sample Year 2014-2015

Sport fish, forage fish, and other important fishes : Sport fishes in Casa Blanca Reservoir include Largemouth Bass, Palmetto Bass, Blue and Channel Catfishes, and Black and White Crappies. Known important forage species include Bluegill and Gizzard Shad.

Survey objectives, fisheries metrics, and sampling objectives:

Largemouth bass: Largemouth bass in Casa Blanca Reservoir are an important sport fish and have been managed with an 18-inch minimum length limit since 1994. Additionally, six Sharelunkers have been turned in from Casa Blanca beginning in 1994. Catch rates of stock sized Largemouth Bass from night time random electrofishing have been quite variable (ranging from 6.0-76.0/h) and provide very little useful trend data. Additionally, very few bass suitably sized for age and growth analysis have been collected in previous samples. As trend data from this reservoir is not representative of the demonstrated fishery, sampling efforts will focus on collecting fish for size structure, age and growth, and body condition. We propose switching to a minimum of 18 randomly selected daytime stations to be sampled in the fall of 2014. Additional sampling will occur at up to 6 more randomly selected stations to insure the collection of at least 50 stock-sized fish, including 13 fish between 13.0 and 14.9 inches for age and growth analysis. If the target numbers of fish are not collected with the 24 random electrofishing stations, up to 12 random stations will be sampled on another day. Standard sampling will occur once every four years.

Palmetto Bass: These fished are stocked on a near annual basis and anecdotal reports indicate a fishery does exist for them, but our historic gill net surveys indicate low abundance. The variation in catch rates over time indicates that CPUE data has little utility at this reservoir. However, collecting fish for age and growth analysis to determine stocking success is important. Additionally, size structure and body condition indices could indicate if stocking rates should be adjusted. We propose setting 5 gill nets in random locations in the main basin area of the reservoir to collect 50 stock-sized Palmetto Bass in the spring of 2015. If that target is not reached, an additional five nets will be set at randomly selected stations also in the main basin. Sampling will cease after 10 nets. Standard sampling will occur once every four years.

Blue and Channel Catfishes: Based on historic gill net catches, these species' populations may only support minimal fisheries. As such, sampling for presence/absence is all that is required. Sampling for these species will be done as a corollary to our Palmetto Bass sampling every four years. Palmetto Bass sampling will be done by 5-10 gill nets set at randomly selected locations in the main basin of the reservoir.

Black and White crappie: Black and White Crappies exist in this reservoir. Historic random trap nets have indicated a low abundance population. Until anecdotal information indicates a change has occurred, presence/absence information is all that is required. As Crappies have been collected in randomly set gill nets (5.2/net-night since 2000), their presence or absence in gill nets set for Palmetto Bass will be used to monitor their continued existence in the reservoir.

Bluegill and Gizzard Shad: Bluegill and Gizzard Shad are the primary forage fishes at Casa Blanca Reservoir. While CPUE of both species is variable, major changes in their relative abundances can be indicated in CPUE trend data. Sampling of these species concurrently with Largemouth Bass sampling should provide adequate CPUE precision of Bluegill 4 inches and less Gizzard Shad 7 inches and less to detect major changes in relative abundance. For Bluegill, this amount of sampling will likely yield an RSE less than 25 (Table 1). Gizzard Shad catches will likely be greater than 200 fish \leq 7 inches, with an RSE of 20 or less (Table 2). No additional effort will be expended to increase the number of Bluegill collected.

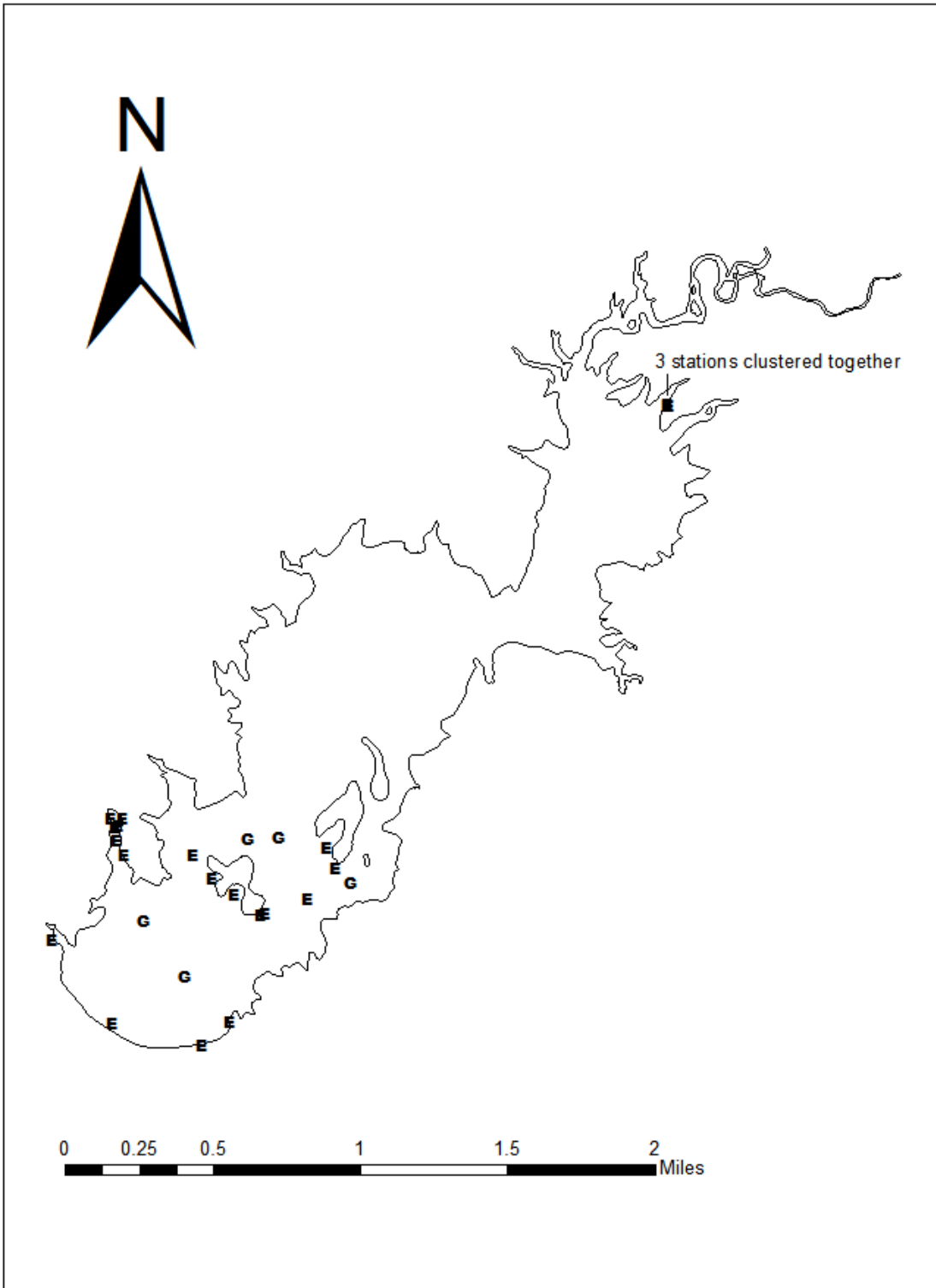
Table 1. Number (N), RSE from of 12 stations, estimated RSEs from 15, 18, and 24 stations, and estimated catch (NE) after 18 stations of Bluegill ≤ 4 inches from Casa Blanca Reservoir, TX.

Year	N ≤ 4	RSE				NE
		12 stations	15 stations	18 stations	24 stations	18 stations
2000	8	43	38	35	30	12
2002	12	35	31	28	25	18
2004	26	18	16	15	13	39
2006	20	24	21	19	17	30
2010	18	17	16	14	12	27
Average	17	27	24	22	19	25

Table 2. Number (N), RSE from of 12 stations, estimated RSEs from 15, 18, and 24 stations, and estimated catch (NE) after 18 stations of Gizzard Shad ≤ 7 inches from Casa Blanca Reservoir, TX.

Year	N ≤ 7	RSE				NE
		12 stations	15 stations	18 stations	24 stations	18 stations
2000	167	22	20	18	15	250
2002	192	32	29	26	23	288
2004	227	30	27	24	21	340
2006	34	24	21	19	17	51
2010	87	12	11	10	9	130
Average	141	24	22	19	17	212

APPENDIX B



Location of random sampling sites, Casa Blanca Reservoir, Texas, 2014-2015. Gill net = G and fall electrofishing =E.

APPENDIX C

Number (N) and catch rate (CPUE) of all target species collected from all gear types from Casa Blanca Reservoir, Texas, 2014-2015. Sampling effort was 1.8 hours for fall daytime electrofishing, and 5 net nights for gillnetting in the main basin of the reservoir.

Species	Gill Netting		Electrofishing	
	N	CPUE	N	CPUE
Gizzard Shad	280	56.0	354	202.3
Threadfin Shad			61	34.9
Common Carp	16	3.2		
Blue Catfish	47	9.4		
Channel Catfish	105	21.0		
Flathead Catfish	1	0.2		
Mexican Tetra			4	2.3
Bluegill	4	0.8	90	51.4
Redear Sunfish			14	8.0
Largemouth Bass	13	2.6	193	110.3
White Crappie	28	5.6		
Black Crappie	1	0.2		
Rio Grande Cichlid			1	0.6
Hybrid striped bass	78	15.6		