

White Rock Reservoir

2019 Fisheries Management Survey Report

PERFORMANCE REPORT

As Required by

FEDERAL AID IN SPORT FISH RESTORATION ACT

TEXAS

FEDERAL AID PROJECT F-221-M-4

INLAND FISHERIES DIVISION MONITORING AND MANAGEMENT PROGRAM

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Survey and Management Summary

Fish populations in White Rock Reservoir were surveyed in 2019 using electrofishing and trap netting and in 2020 using gill netting and tandem hoop netting. Historical data are presented with the 2019-2020 data for comparison. This report summarizes the results of the surveys and contains a management plan for the reservoir based on those findings.

Reservoir Description: White Rock Reservoir is a 995-acre impoundment located on White Rock Creek, a tributary of the Elm Fork of the Trinity River. It was constructed in 1910 by the City of Dallas as a municipal water supply, but presently it is used only for recreation and flood control. The upper portion of the reservoir was dredged in 1998 and 1999 increasing average depth of that area to five feet. Angler and boat access is adequate. Outboard motors on White Rock Reservoir are restricted to no more than 10.5 HP. However, boats with larger motors can utilize the reservoir using their electric trolling motors. There are two ADA compliant facilities on the reservoir. Fishery habitat consisted of primarily native emergent vegetation in the form of bulrush (*Scirpus* spp.) and water willow (*Justicia americana*), boat docks and fishing piers.

Management History: Important sport fishes include Largemouth Bass (*Micropterus salmoides*), White Crappie (*Pomoxis annularis*), and Channel Catfish (*Ictalurus punctatus*). White Rock Reservoir is an urban fishery with the majority of fishing pressure being bank angling (Brock and Hungerford 2011). The management plan from the 2015 survey report included promoting recreational angling opportunities at White Rock Reservoir and working with Dallas Water Utilities (DWU) to install artificial fish habitat structures around fishing piers. Dallas Water Utilities and Texas Parks and Wildlife Department (TPWD) are continuing to work on a plan to install artificial fish habitat structures around the lake. The Dallas/Fort Worth Inland Fisheries office has updated printable and online materials that promote fishing locations with ample bank access and quality fisheries, which includes White Rock Reservoir.

Fish Community

- **Prey species:** Threadfin Shad were present in the reservoir. Electrofishing catch of Gizzard Shad was high, and most Gizzard Shad were available as prey to most sport fish. Electrofishing catch of Bluegill was high, but few Bluegill were over 6-inches long.
- **Catfishes:** Channel Catfish catch rates were higher than previous years with all fish collected being 13" or larger. No Blue Catfish or Flathead Catfish were collected.
- **White Bass:** No White Bass were collected during this survey period.
- **Largemouth Bass:** Largemouth Bass were abundant and in good condition. Higher numbers of legal-size fish were available to anglers.
- **White Crappie:** White Crappie were abundant and in great condition. About one-quarter of the populations is legal-size fish available to anglers.

Management Strategies: Request Florida Largemouth Bass (FLMB) fingerlings to stock at a rate of 100 fish/acre. Continue to work on memorandum of understanding with Dallas Water Utilities (DWU) and to install artificial fish habitat structures around fishing piers in White Rock Reservoir. Continue to advertise recreational angling opportunities at White Rock Reservoir through social media and on TPWD and DWU websites.

Introduction

This document is a summary of fisheries data collected from White Rock Reservoir in 2019-2020. 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 2019-2020 data for comparison.

Reservoir Description

White Rock Reservoir is a 995-acre impoundment located on White Rock Creek, a tributary of the Elm Fork of the Trinity River. It was constructed in 1910 by the City of Dallas as a municipal water supply, but presently it is used only for recreation and flood control. The upper portion of the reservoir was dredged in 1998 and 1999 increasing average depth of that area to five feet. Fishery habitat consisted of primarily native emergent vegetation in the form of bulrush and water willow, rock outcrops, boat docks and fishing piers. Since White Rock Reservoir is no longer used for municipal water, a water level gauge is unavailable, but water level remains stable near conservation pool. Other descriptive characteristics for White Rock Reservoir can be found in Table 1.

Angler Access

White Rock Reservoir has five public boat ramps and no private boat ramps. The boat ramps are open year-round and do not require a fee. Outboard motors on White Rock can be no more than 10.5 HP. However, boats with larger motors can utilize the reservoir using their electric trolling motors. There are two ADA compliant facilities on the reservoir and bank fishing is widely available via a paved trail that circles the reservoir. There are several public fishing piers on the lake. Additional boat ramp characteristics are in Table 2.

Management History

Previous management strategies and actions: Management strategies and actions from the previous survey report (George et al. 2016) included:

1. Encourage recreational angling opportunities at White Rock Reservoir via social media and TPWD and City of Dallas websites or outreach events.

Action: The Dallas/Fort Worth Inland Fisheries office updated the “Easy Access Fishing Spots” document for the DFW metroplex. The document contains a list of 23 locations with ample bank access and quality fisheries. It is available in print and on the TPWD website. The document has been handed out at all TPWD outreach events in the past year.
2. Enhance fish habitat around the reservoir by installing artificial fish habitat around public fishing piers.

Action: TPWD proposed locations and structure type(s) to install to stakeholder groups. TPWD and Dallas Water Utilities are working on a memorandum of understanding to allow TPWD to install artificial fish habitat structures around the public fishing piers in the reservoir.

Harvest regulation history: Sport fish populations in White Rock Reservoir have always been managed with statewide regulations. Current regulations are found in Table 3.

Stocking history: The most recent stocking at White Rock Reservoir consisted of adult Channel Catfish in 2019. The complete stocking history is in Table 4.

Vegetation/habitat management history: The last vegetation/habitat survey on White Rock Reservoir was conducted in 2011. Vegetation and habitat primarily consist of shoreline emergent species including

bulrushes and water willow. Given the stability in water levels, few changes have occurred with vegetation in recent years, so no surveys or management activities related to vegetation and habitat have been conducted since 2011.

Water transfer: No interbasin transfers are known to exist.

Methods

Surveys were conducted to achieve survey and sampling objectives in accordance with the objective-based sampling (OBS) plan for White Rock Reservoir (George et al. 2016). Primary components of the OBS plan are listed in Table 5. All survey sites were randomly selected, and all surveys were conducted according to the Fishery Assessment Procedures (TPWD, Inland Fisheries Division, unpublished manual revised 2017).

Electrofishing – Largemouth Bass, sunfishes, Gizzard Shad, and Threadfin Shad were collected by electrofishing (1 hour at 12, 5-min stations). Catch per unit effort (CPUE) for electrofishing was recorded as the number of fish caught per hour (fish/h) of actual electrofishing.

Trap netting – Crappie were collected using trap nets (5 net nights at 5 stations). CPUE for trap netting was recorded as the number of fish caught per net night (fish/nn).

Gill netting – Channel Catfish were collected by gill netting (5 net nights at 5 stations). CPUE for gill netting was recorded as the number of fish caught per net night (fish/nn).

Tandem hoop nets – Channel Catfish were targeted using 3 tandem hoop-net series at 3 stations to determine if hoop nets would be a viable option for sampling Channel Catfish in White Rock Reservoir. Nets were deployed for 2-night soak durations without bait. CPUE for tandem hoop netting was recorded as the number of fish caught per tandem hoop net series (fish/series). We deployed 3 tandem-set hoop nets but did not catch any Channel Catfish. Then, in response to COVID-19 pandemic and resulting 'shelter-in-place' orders, we were unable to complete our hoop net sampling. Thus, our OBS objectives were not met for Channel Catfish in this survey period.

Statistics – 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 all CPUE and creel statistics.

Habitat – Structural habitat and vegetation surveys were conducted in 2011. Because White Rock Reservoir is no longer used as a municipal water source, water level of the reservoir remains stable near conservation pool. Since water level does not fluctuate and no vegetation management or habitat enhancement activities have occurred in the reservoir since 2011, we decided there was no need conduct habitat or vegetation surveys during the standard sampling procedures of 2019-2020.

Water level – No water gauge is available because White Rock Reservoir is no longer used as a municipal water source.

Results and Discussion

Habitat: Primary habitat features in White Rock Reservoir include native emergent vegetation, rocky shorelines, and boat docks (Brock and Hungerford 2011). Approximately 90 percent of the habitat was natural rocky shoreline and native emergent vegetation in the form of water willow, cattail and bulrush. The remaining percentage was bulkhead. Boat docks covered about 7 acres of the surface area of the lake.

Prey species: Electrofishing catch rates of Bluegill and Gizzard Shad were 300.0/h and 347.0/h, respectively (Figures 1 and 2). Although catch rates were high, total CPUE of both Gizzard Shad and Bluegill were considerably lower in 2019 compared to the 2015 and 2011 surveys (Figures 1 and 2). Index of Vulnerability (IOV) for Gizzard Shad was excellent, indicating that 98% of Gizzard Shad were available to existing predators; this was similar to IOV estimates in previous years (Figure 1). Size structure of Bluegill was dominated by small individuals as it had been in the previous two surveys (Figure 2). Objective-based sampling (OBS) objectives were met for Bluegill and for IOV and size structure of Gizzard Shad; however, we did not meet the abundance (CPUE-total) objective of an RSE of ≤ 25 for Gizzard Shad (Table 5). Total CPUE of Threadfin Shad and Longear Sunfish were good (245/h and 85/h, respectively) during the 2019 survey (Appendix A).

Catfishes: Although stocked in 2007, no Blue Catfish were collected from the reservoir during sampling (Appendix C); however, anecdotal evidence suggest they are present in the reservoir. The gill net CPUE of Channel Catfish was 7.0/nn in 2019; higher than the 2011 and 2015 surveys (Figure 3). Size structure of the population has continued to shift towards larger individuals with all fish collected being 13 inches or larger (Figure 3). Condition was good for most size classes (Figure 3). Objective-based sampling objectives were not met for Channel Catfish during this sampling period.

White Bass: No White Bass were collected during the 2020 gill net survey. The population of White Bass has historically been low (Appendix C).

Largemouth Bass: Total CPUE of Largemouth Bass was 141.0/h; lower than previous years (Figure 4). However, the size structure of the population appears to have shifted towards a more balanced population indicated by the increased catch rate of ≥ 14 -inch fish and the PSD of 68 (Figure 4). Condition was near or above optimum (100) for all size classes. Fin clips for genetic analysis were not collected during 2019 sampling efforts. However, after electrofishing sampling was completed, district personnel were informed that 8+ pound Largemouth Bass have been caught by anglers in White Rock Reservoir in recent years. Historically, the prevalence of Florida strain Largemouth Bass genetics has been low with Florida alleles ranging from 25-34% in previous surveys (George et al. 2016).

White Crappie: The total trap netting CPUE of White Crappie was 209.2/nn; higher than 2017 and 2015 (Figure 5). The catch rate of ≥ 10 -inch fish was 51.4/nn. The population is slightly unbalanced given the PSD value of 74, however, body condition is excellent for all size classes, despite the high abundance. White Rock Reservoir continues to be one of the best crappie lakes in the DFW metroplex.

Fisheries Management Plan for White Rock Reservoir, Texas

Prepared – July 2020

ISSUE 1: Anecdotal evidence from discussions with anglers suggests that White Rock Reservoir can produce 8-10 pound (possibly larger) Largemouth Bass and that angling effort for Largemouth Bass has increased.

MANAGEMENT STRATEGIES

1. Conduct additional bass-only electrofishing sampling in 2021.
2. Request FLMB fingerlings for stocking in 2022 and 2023 at 100 fingerlings/acre.

ISSUE 2: White Rock Reservoir is a small impoundment where using TPWD standard creel survey protocols can be difficult and possibly not produce accurate results. The small size of the reservoir leads to a lot of down time between survey time periods and inefficiency of encountering anglers.

MANAGEMENT STRATEGIES

1. Develop a creel survey for small impoundments that will be more efficient and provide accurate information about the anglers utilizing the reservoir and fisheries.
2. Conduct creel survey on White Rock Reservoir to determine angler preference towards Largemouth Bass, White Crappie and catfish management on White Rock Reservoir.

ISSUE 3: White Rock Reservoir has several public fishing piers, but these areas are lacking fisheries habitat/cover that attracts fish.

MANAGEMENT STRATEGY

1. Complete the memorandum of understanding and continue to work with Dallas Water Utilities to install artificial habitat structures around the fishing piers.

ISSUE 4: White Rock Reservoir is in a highly urbanized area with ample boat and shoreline fishing access. However, the reservoir is not heavily utilized by anglers.

MANAGEMENT STRATEGY

1. Continue to encourage recreational angling opportunities at White Rock Reservoir using social media and TPWD website. Contact Dallas Water Utilities to promote fishing on White Rock Reservoir on City website and posting informational signage about recreational angling opportunities.

ISSUE 5: Many invasive species threaten aquatic habitats and organisms in Texas and can adversely affect the state ecologically, environmentally, and economically. For example, zebra mussels (*Dreissena polymorpha*) can multiply rapidly and attach themselves to any available hard structure, restricting water flow in pipes, fouling swimming beaches, and plugging engine cooling systems. Giant salvinia (*Salvinia molesta*) and other invasive vegetation species can form dense mats, interfering with recreational activities like

fishing, boating, skiing, and swimming. The financial costs of controlling and/or eradicating these types of invasive species are significant. Additionally, the potential for invasive species to spread to other river drainages and reservoirs via watercraft and other means is a serious threat to all public waters of the state

MANAGEMENT STRATEGIES

1. Cooperate with the City of Dallas 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 (2020–2024)

Sport fish, forage fish, and other important fishes

Important sport fishes in White Rock Reservoir include Largemouth Bass, Channel Catfish, and White Crappie. Important forage species include Bluegill and Threadfin and Gizzard Shad.

Low-density fisheries

White Bass: White Bass are present in White Rock Reservoir, but their abundance is very low and receives no directed fishing effort. Catch information on White Bass will be collected during sampling for other species.

Catfishes: Blue Catfish are present in White Rock Reservoir, but their abundance is very low and receives little direct fishing effort. Channel Catfish receive more directed effort and occur in greater numbers than Blue Catfish in White Rock Reservoir, catch rates over the past 12 years have been inconsistent and shown lack of recruitment. Since gill netting has not been an effective method for Blue Catfish collection, 10 low-frequency electrofishing stations will be sampled in summer 2021 and 2023. No sampling objectives will be set for either catfish species.

Survey objectives, fisheries metrics, and sampling objectives

Largemouth Bass: According to the creel survey conducted in 2005-2006 (Brock and Hungerford 2007), Largemouth Bass are the third most popular sport fish and are targeted by nearly one quarter of anglers fishing White Rock Reservoir. The popularity and reputation for quality Largemouth Bass fishing at White Rock Reservoir warrant sampling time and effort. Largemouth Bass have always been managed with the statewide 14-inch minimum length limit (MLL). Fall nighttime electrofishing will be conducted in 2021 (bass-only) and 2023. This should allow for determination of any large-scale changes in the Largemouth Bass population that may spur further investigation. A total of 12 randomly selected 5-minute electrofishing sites will be sampled each year. Fin clips from 30 Largemouth Bass (of all sizes) will be collected in 2021 and 2023 to assess Largemouth Bass genetics and aid in FLMB stocking decision. Based on previous catch rates, 12 stations should be adequate to meet objectives for relative abundance ($RSE-Stock \leq 25$), size structure ($N \geq 50$ stock-size fish), condition (10 fish/inch group) and genetic

analysis (N = 30). If the objectives are not met with 12 stations, no additional effort will be expended to collect additional fish.

White Crappie: The creel survey conducted in 2005-2006 indicated that White Crappie are tied with Channel Catfish as the most sought-after sport fish in White Rock Reservoir. This reservoir is one of the best crappie reservoirs in the DFW metroplex. This popularity warrants sampling time and effort. A 5-station single-cod trap net survey will be conducted in the fall of 2023. Based on previous catch rates, this should be adequate to meet objectives for relative abundance (RSE-Stock ≤ 25) and size structure (N = 50). If the objectives are not met, no additional effort will be expended to collect additional fish.

Bluegill, Threadfin and Gizzard Shad: Bluegill, Threadfin and Gizzard Shad are the primary forage fish in White Rock Reservoir. Like Largemouth Bass, trend data on CPUE and size structure have been collected with fall nighttime electrofishing. Standard electrofishing for Largemouth Bass will allow for monitoring of large-scale changes in these species' relative abundance and size structure. Sampling effort set for Largemouth Bass objectives should result in sufficient numbers of these three prey species to meet the objectives for abundance (RSE-Stock ≤ 25) and size structure (PSD and IOV, N ≥ 50). If objectives are not met, no additional effort will be expended to collect additional fish.

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Tables and Figures

Table 1. Characteristics of White Rock Reservoir, Texas.

Characteristic	Description
Year constructed	1910
Controlling authority	City of Dallas
County	Dallas
Reservoir type	Tributary of Trinity River
Conductivity	304 $\mu\text{S/cm}$

Table 2. Boat ramp characteristics for White Rock Reservoir, Texas, June 2019.

Boat ramp	Latitude Longitude (dd)	Public	Parking capacity (N)	Condition
West Lawther	32.83298 -96.72947	Y	30	Good, no access issues
Big Thicket	32.84983 -96.71816	Y	20	Good, no access issues
Filter Building	32.82371 -96.73019	Y	30	Good, no access issues
Corinthian Sailing Club	32.84386 -96.71866	Y	20	Good, no access issues
East Lawther	32.84613 -96.71749	Y	No Parking	Good, no access issues

Table 3. Harvest regulations for White Rock Reservoir, 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, Largemouth	5	14-inch minimum
Crappie: White and Black crappie, their hybrids and subspecies	25 (in any combination)	10-inch minimum

Table 4. Stocking history of White Rock Reservoir, Texas. FGL = fingerling; AFGL = advanced fingerling; ADL = adults; UNK = unknown.

Species	Year	Number	Size
Blue Catfish	1988	15	ADL
	2007	107,354	FGL
	Total	107,369	
Channel Catfish	1979	1,315	AFGL
	1979	935	UNK
	1980	17,431	AFGL
	1981	22,380	AFGL
	1986	1,883	AFGL
	2000	293,146	FGL
	2004	10,551	AFGL
	2008	163	ADL
	2017	5,006	FGL
	2019	23	ADL
Total	352,833		
Florida Largemouth Bass	1978	1,150	AFGL
	1982	10,000	FGL
	1992	112,030	FGL
	1996	112,468	FGL
	Total	235,648	
Largemouth Bass	1968	300,000	UNK
	1995	10	ADL
	2001	13	ADL
	Total	300,023	
Palmetto Bass (Striped x White Bass hybrid)	1975	20,000	UNK
	1977	9,900	UNK
	Total	29,900	
Red Drum	1976	2,200	UNK
	Total	2,200	
Walleye	1978	4,500,000	FRY
	1979	3,360,000	FRY
	Total	7,860,000	

Table 4. Objective-based sampling plan components for White Rock Reservoir, Texas 2019–2020.

Gear/target species	Survey objective	Metrics	Sampling objective
<i>Electrofishing</i>			
Largemouth Bass	Abundance	CPUE–Stock	RSE-Stock \leq 25
	Size structure	PSD, length frequency	N \geq 50 stock
	Condition	W_r	10 fish/inch group (max)
Bluegill ^a	Abundance	CPUE–Total	RSE \leq 25
	Size structure	PSD, length frequency	N \geq 50
Gizzard Shad ^a	Abundance	CPUE–Total	RSE \leq 25
	Size structure	PSD, length frequency	N \geq 50
	Prey availability	IOV	N \geq 50
<i>Gill netting</i>			
Blue Catfish	Abundance	CPUE	Presence/Absence
	Size structure	PSD, length frequency	Presence/Absence
Channel Catfish	Abundance	CPUE – stock	RSE-Stock \leq 25
	Size structure	PSD, length frequency	N \geq 50 stock
<i>Tandem hoop netting</i>			
Channel Catfish	Abundance	CPUE–stock	RSE-Stock \leq 25
	Size structure	PSD, length frequency	N \geq 50 stock

^a No additional effort will be expended to achieve an RSE \leq 25 for CPUE of Bluegill and Gizzard Shad if not reached from designated Largemouth Bass sampling effort. Instead, Largemouth Bass body condition can provide information on forage abundance, vulnerability, or both relative to predator density.

Gizzard Shad

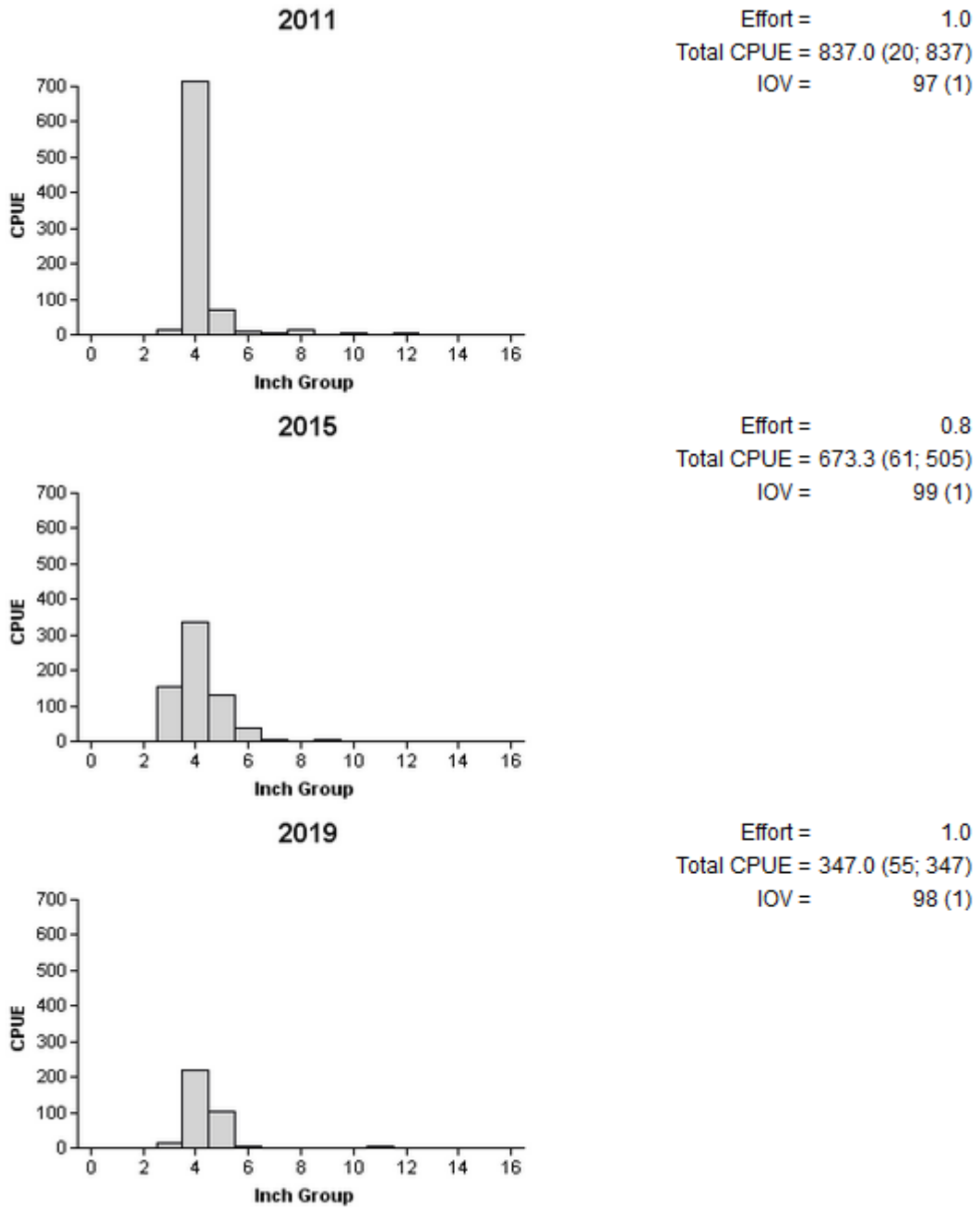


Figure 1. Number of Gizzard Shad caught per hour (CPUE, bars) and population indices (RSE and N for CPUE and SE for IOV are in parentheses) for fall electrofishing surveys, White Rock Reservoir, Texas, 2011, 2015, and 2019.

Bluegill

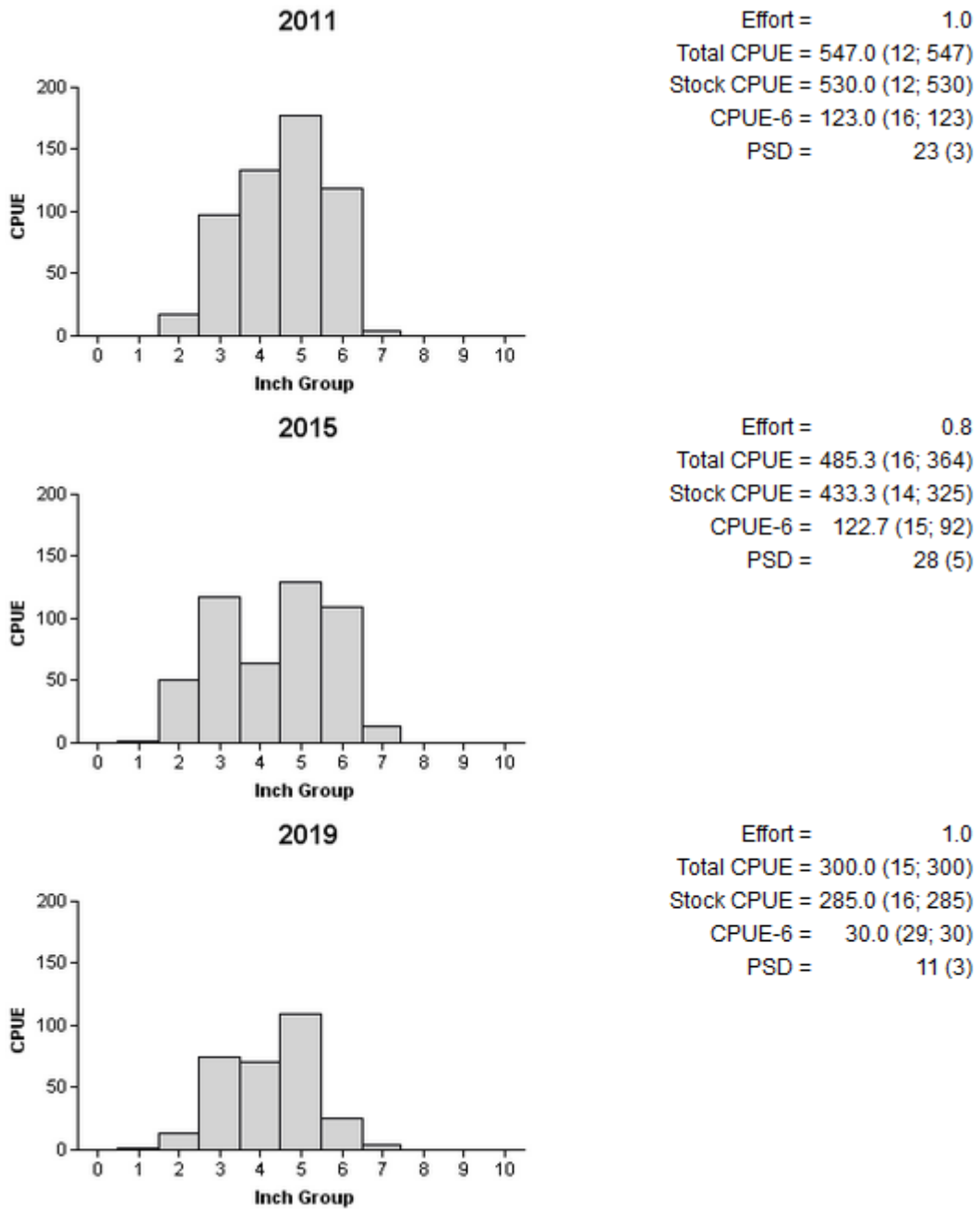


Figure 2. Number of Bluegill caught per hour (CPUE) and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for fall electrofishing surveys, White Rock Reservoir, Texas, 2011, 2005, and 2019.

Channel Catfish

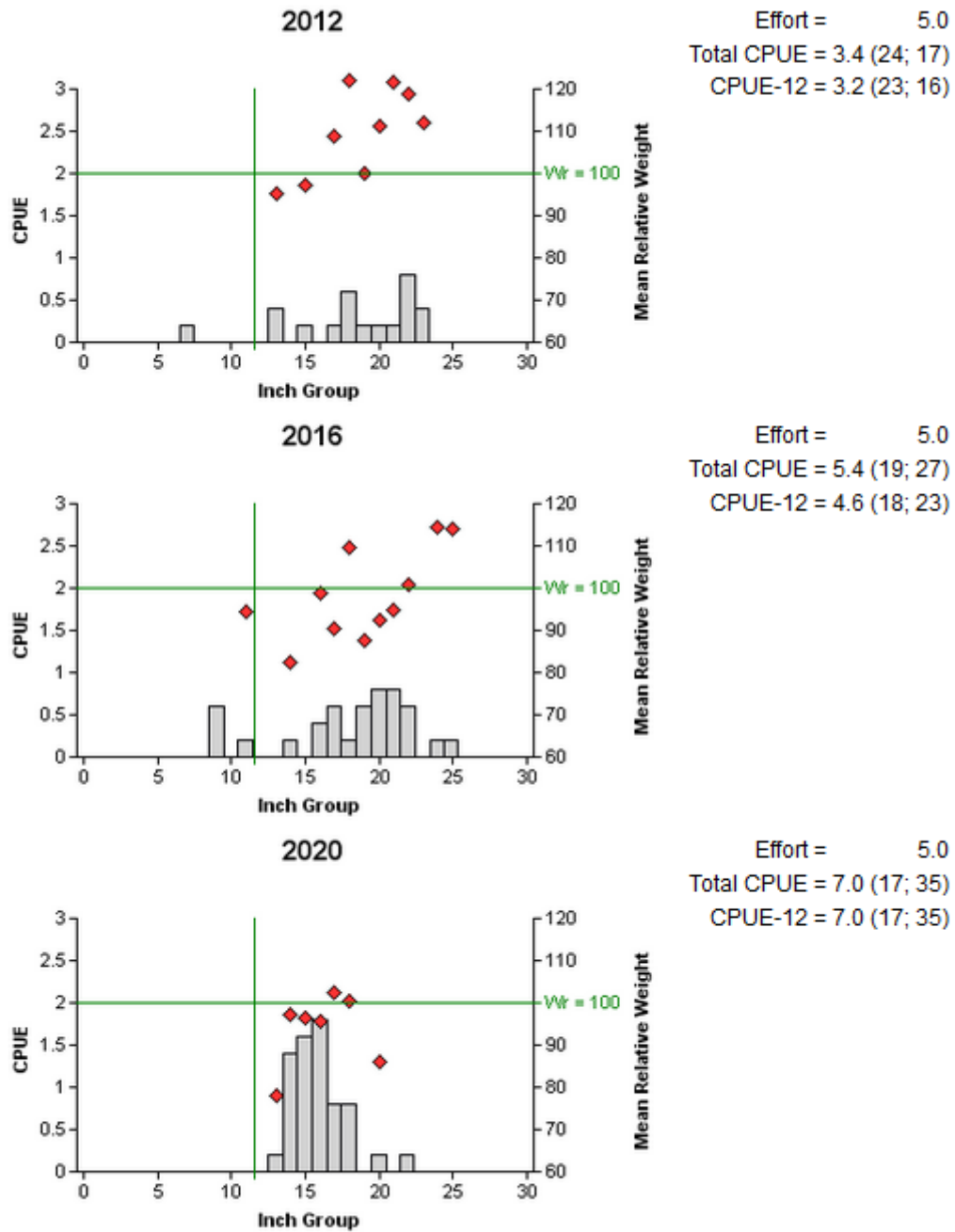


Figure 3. Number of Channel Catfish caught per net night (CPUE; bars), mean relative weight (diamonds), and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for spring gill net surveys, White Rock Reservoir, Texas, 2012, 2016, and 2020. Vertical line represents length limit at time of sampling. Horizontal line represents optimal relative weight value of 100.

Largemouth Bass

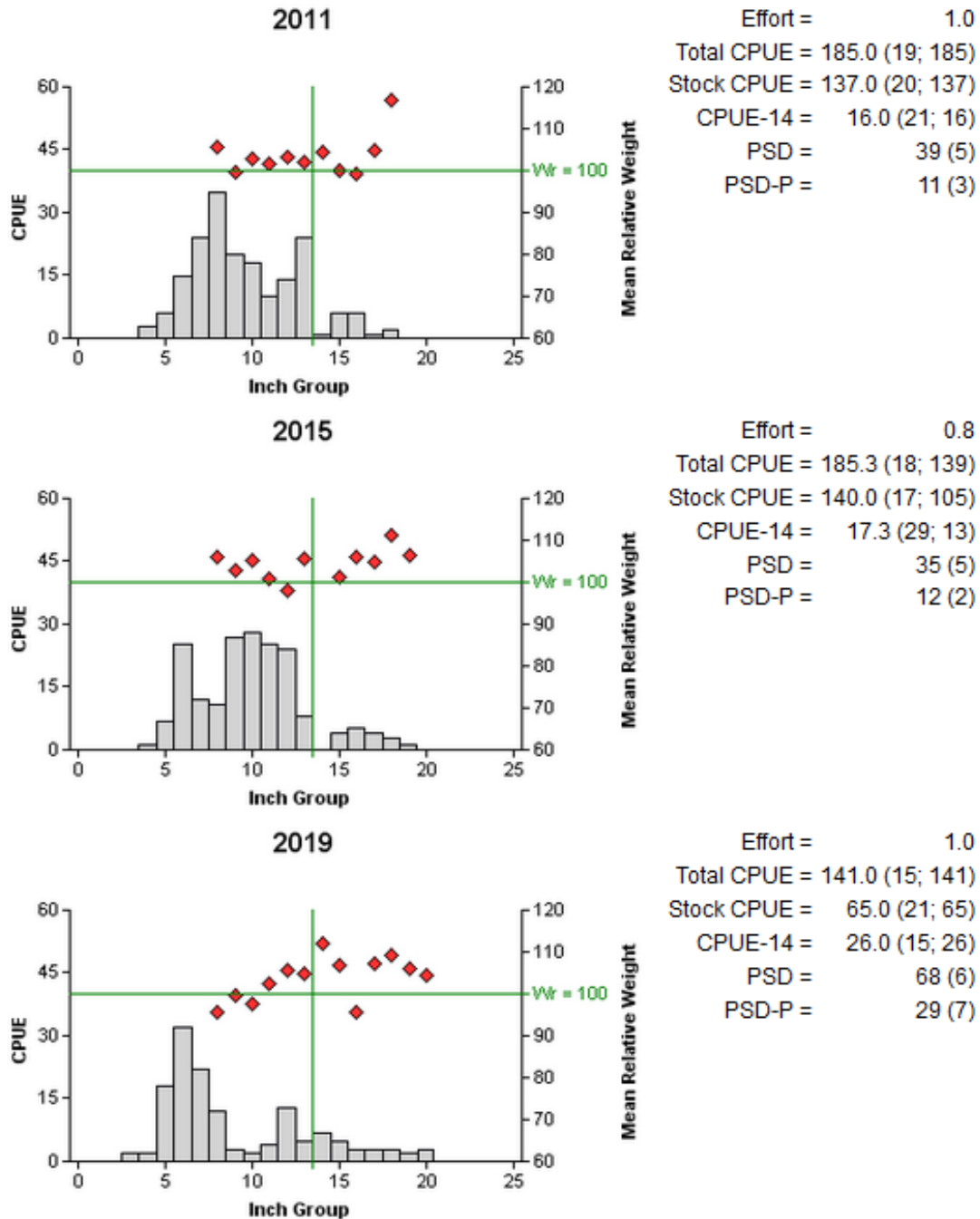


Figure 4. Number of Largemouth Bass caught per hour (CPUE, bars), mean relative weight (diamonds), and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for fall electrofishing surveys, White Rock Reservoir, Texas, 2011, 2015, and 2019. Vertical line represents minimum length limit at time of sampling. Horizontal line represents optimal relative weight value of 100.

White Crappie

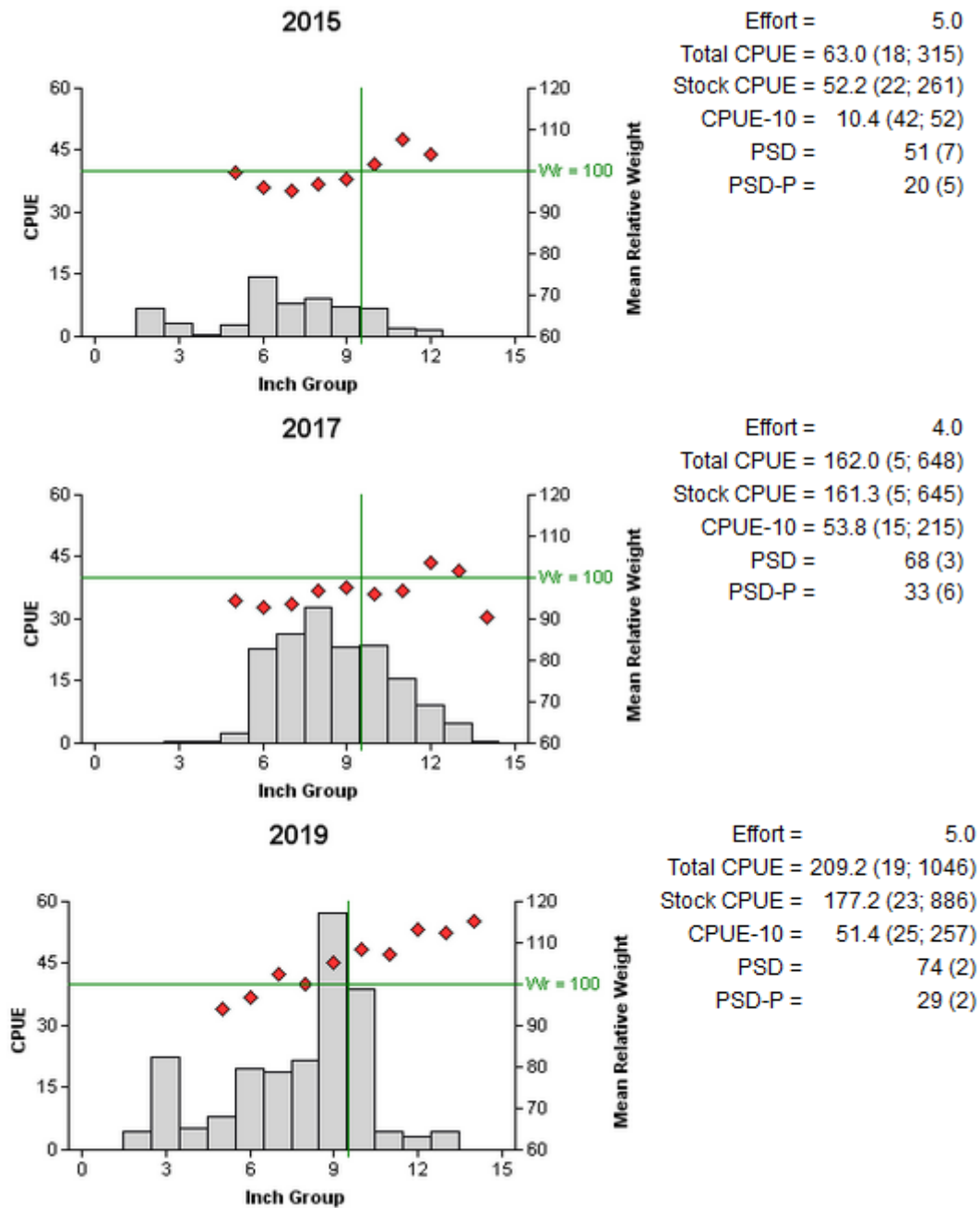


Figure 5. Number of White Crappie caught per net night (CPUE, bars), mean relative weight (diamonds), and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for fall trap netting surveys, White Rock Reservoir, Texas, 2011, 2015, and 2019. Vertical line represents minimum length limit at time of sampling. Horizontal line represents optimal relative weight value of 100.

Proposed Sampling Schedule

Table 7. Proposed sampling schedule for White Rock Reservoir, Texas. Survey period is June through May. Electrofishing and trap netting surveys are conducted in the fall. Standard survey denoted by S and additional survey denoted by A. Low-frequency electrofishing surveys are conducted in the summer.

	Survey year			
	2020-2021	2021-2022	2022-2023	2023-2024
Angler Access				S
Electrofishing – Fall		A*		S
Low-frequency Electrofishing		A		A
Trap netting				S
Report				S

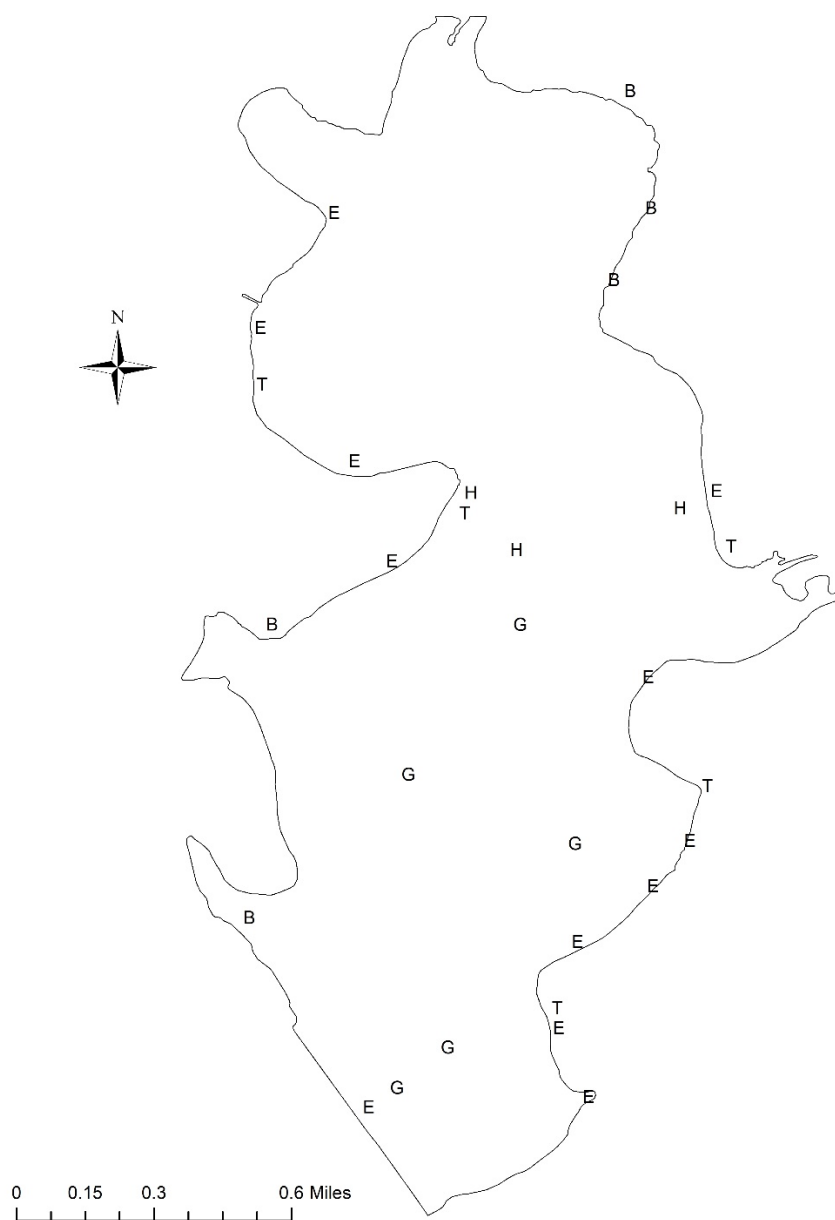
*Bass-only electrofishing

APPENDIX A – Catch rates for all species from all gear types

Number (N) and catch rate (CPUE) (RSE in parentheses) of all target species collected from all gear types from White Rock Reservoir, Texas, 2012-2013. Sampling effort was 5 net nights for gill netting, 5 net nights for trap netting, and 1 hour for electrofishing.

Species	Gill Netting		Trap Netting		Electrofishing	
	N	CPUE	N	CPUE	N	CPUE
Gizzard Shad	93	18.6 (39)			347	347.0 (55)
Threadfin Shad					245	245.0 (81)
Common Carp	2	0.4 (61)				
River Carpsucker	2	0.4 (100)				
Smallmouth Buffalo	43	8.6 (20)				
Channel Catfish	35	7.0 (17)				
Yellow Bass	27	5.4 (43)				
Bluegill					300	300.0 (15)
Longear Sunfish					85	85.0 (24)
Redear Sunfish					1	1.0 (100)
Largemouth Bass					141	141.0 (15)
White Crappie	10	2.0 (32)	1046	209.2 (19)		

APPENDIX B – Map of sampling locations



Location of sampling sites, White Rock Reservoir, Texas, 2019-2020. Trap net, gill net, hoop net and electrofishing stations are indicated by T, G, H and E, respectively. Boat ramps are indicated by B. Water level was near full pool at time of sampling.

APPENDIX C – Historical catch rates for White Rock Reservoir 1996-2020

Historical catch rates (CPUE) for frequently targeted species in White Rock Reservoir for all gear types from 1996 – 2020.

Gear	Species	Year											
		1996	1999	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Gill Net (fish/net night)	Channel Catfish	0.8	2.0				3.2				7.0		
	White Bass	0.6	1.4				0.4				0.6		
	Common Carp	0.8	1.4										
	Smallmouth Buffalo	10.4	16.2			18.6				4.8			
	Gizzard Shad												
	White Crappie												
Electrofishing (fish/hour)	Gizzard Shad	47	362	324	149	100	90	213	415	274	152	957	353
	Threadfin Shad	57	177		9	47	255	402	348	30	125	369	29
	Bluegill	129	61	190	78	210	108	300	296	423	622	431	477
	Longear Sunfish	33	14	102	46	141	54	158	88	124	163	112	180
	Redear Sunfish												
	Largemouth Bass	318	302	100	90	100	50	212	177	154	217	206	291
Trap Net (fish/net night)	White Crappie	6.6	13.4			176				69.8			

Historical catch rates (CPUE) for frequently targeted species in White Rock Reservoir for all gear types from 1996 – 2020 cont'd.

Gear	Species	Year							Historical Average
		2011	2012	2015	2016	2017	2019	2020	
Gill Net (fish/net night)	Channel Catfish		3.4		5.4			7.0	4.1
	White Bass		0.4						0.7
	Common Carp				0.2			0.4	0.7
	Smallmouth Buffalo		20.20		20			8.6	14.1
	Gizzard Shad							18.6	18.6
	White Crappie							2.0	2.0
Electrofishing (fish/hour)	Gizzard Shad	837		673.3				347	352.9
	Threadfin Shad	54		284				245	173.6
	Bluegill	547		485.3				300	310.5
	Longear Sunfish	134		154.6				85	105.9
	Redear Sunfish							1	1.0
	Largemouth Bass	185		185.3				141	181.9
Trap Net (fish/net night)	White Crappie	58.2		63		162	209.2		94.8



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