

Marine Creek Reservoir

2022 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 Marine Creek Reservoir were surveyed in 2022 using electrofishing and trap netting. Historical data are presented with the 2022-2023 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 Marine Creek is a 250-acre reservoir located on Marine Creek, a tributary of the Trinity River, in Tarrant County. The reservoir was constructed in 1958 by the Tarrant Regional Water District primarily for flood control and limited recreational activities. Water level data are not available for Marine Creek, but the reservoir rarely experiences major water level fluctuations. Habitat is limited but composed mainly of native emergent aquatic vegetation in the forms of water willow, cattails, bulrush and rocky shoreline.

Management History: Important sport fish include Largemouth Bass, White Bass, White Crappie, and Channel Catfish. Sport fish populations, except Largemouth Bass, are managed with statewide regulations. Marine Creek was a study site for the Operation World Record (OWR) research project. Operation World Record was a project designed to test the growth rates of local Largemouth Bass (LMB), Florida Largemouth Bass (FLMB), and ShareLunker Largemouth Bass (offspring). In 2006 the minimum length limit was changed from the 14-inch statewide minimum to an 18-inch minimum to protect the Largemouth Bass in the OWR project. In 2014, tagged ShareLunker Largemouth Bass and FLMB were stocked as part of phase two of the OWR project, however, recapture rates of tagged bass were low, leading to Marine Creek's exclusion from OWR data analyses. The 2006-2007 OWR stockings resulted in multiple trophy sized bass being caught by anglers including ShareLunker #577 that weighed 14.57 pounds in 2019. Nearly 14,000 of ShareLunker #577's offspring were stocked into Marine Creek Lake in 2019. Shoreline emergent vegetation was planted into Marine Creek in 2013 and 2014 but flooding in 2015 prevented establishment and additional growth. In 2017, artificial fish habitat structures were deployed near shore at two locations in Marine Creek Reservoir.

Fish Community

- **Prey species:** Threadfin Shad catch rate was the highest it has been since 2010 but was still lower than the historical average. Electrofishing catch of Gizzard Shad was low, similar to historical catch rates, and few were available as prey to most sport fish. Bluegill catch rate increased since the previous survey, but fewer individuals were over 6-inches long.
- **Catfishes:** Due to consistently low historical catch rates, catfish populations were not sampled during this survey period. In previous gill netting surveys, only one Blue Catfish and two Flathead Catfish have been collected and Channel Catfish catch rates ranged from 1.3 to 2.6 fish/h.
- **White bass:** White Bass are present in the reservoir in low numbers. White Bass were not sampled during this survey period.
- **Black basses:** Electrofishing catch of Largemouth Bass was higher than the 2014 and 2018 surveys and few legal-size fish were available to anglers. Spotted bass catch rates have remained relatively unchanged since 2014. Body conditions of Largemouth Bass and Spotted bass ranged from fair to good among all size classes.
- **White Crappie:** Total catch rates and numbers of legal-size White Crappie available to anglers have increased since 2014.

Management Strategies: This reservoir will be monitored with electrofishing and trap netting in 2026. Request stockings of Lone Star Bass advanced fingerlings to maintain trophy potential of Largemouth Bass population. Collect fin clips from Largemouth Bass to determine genetic influence of ShareLunker and Lone Star Bass stockings. Collaborate with Tarrant Regional Water District (TRWD) to request a Habitat and Angler Access Program grant to improve fish habitat and reduce shoreline erosion in the reservoir. Inform the public about the negative impacts of aquatic invasive species.

Introduction

This document is a summary of fisheries data collected from Marine Creek Reservoir in 2022. 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 2022 data for comparison.

Reservoir Description

Marine Creek Reservoir is a 250-acre impoundment in Tarrant County constructed in 1958 on Marine Creek, a tributary of the Trinity River, by the Tarrant Regional Water District (TRWD) for flood control and limited recreational activities. Water level remains fairly constant (within 2 feet) even during times of prolonged drought. The watershed is small and mostly contains residential development with some agricultural land remaining. Angler and boat access are adequate. Most of the fishing facilities are ADA compliant. Fish habitat consists of emergent aquatic vegetation in the forms of water willow, cattails, and bulrush along with rocky shoreline. Other descriptive characteristics for Marine Creek Reservoir are in Table 1.

Angler Access

Marine Creek Reservoir has two public boat ramps and no private boat ramps. Both ramps are open year-round and stable water level keeps access consistent. The IH-820 Access Road ramp has a single-lane paved boat ramp, ample paved parking, multiple floating docks, shoreline fishing access, and a portable restroom. Ten Mile Bridge ramp has a 4-lane paved boat ramp, limited, gravel parking and shoreline fishing access. Additional boat ramp characteristics are in Table 2. Shoreline angler access to fish habitat is limited, with most fish habitat only being accessible to boat anglers.

Management History

Previous management strategies and actions: Management strategies and actions from the previous survey report (Brock et al. 2019) included:

1. Maintain trophy potential of Largemouth Bass population in Marine Creek Reservoir.
Action: Stocked nearly 14,000 ShareLunker fingerlings.
2. Cooperate with controlling authorities to post signage, educate the public about invasive species, and track existing and future inter-basin water transfers to facilitate potential invasive species responses.

Action: The DFW District continued to work with Tarrant Regional Water District (TRWD) to post signage and to educate the public about invasive species threats through media outlets.

Harvest regulation history: Sport fish populations in Marine Creek Reservoir were managed with statewide regulations except for an 18-inch minimum length limit on Largemouth Bass. In 2006, the regulation was changed from the statewide 14-in minimum length limit to protect the genetically superior Largemouth Bass that were stocked as part of the Operation World Record Project. Current regulations can be found in Table 3.

Stocking history: Since 1977, Marine Creek has been stocked with Florida Largemouth Bass, ShareLunker Largemouth Bass, and Channel Catfish. The most recent stockings were Channel Catfish in 2021 and 2023 and ShareLunker Largemouth Bass in 2019. The complete stocking history is in Table 4.

Vegetation/habitat management history: In summer of 2013 and 2014, white water lily, arrowhead, and pickerel weed were planted at various locations along the shoreline. However, high water levels in

2015 flooded the vegetation preventing establishment and additional growth. In 2017, artificial fish habitat structures were deployed near shore at two locations in Marine Creek Reservoir. The locations are marked by signs and buoys at the reservoir. Coordinates and habitat information can be found in Appendix D.

Water transfer: Marine Creek Reservoir is primarily used for flood control and recreation. There are no pumping structures on the reservoir and 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 Marine Creek Reservoir (Brock et al. 2019). 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 2022).

Electrofishing – Largemouth Bass, Spotted Bass, sunfishes, Gizzard Shad, and Threadfin Shad were collected by electrofishing (40 minutes at 8, 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 (3 net nights at 3 stations). CPUE for trap netting was recorded as the number of fish caught per net night (fish/nn).

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 – A habitat survey was not conducted for the 2022-2023 sampling season.

Water level – There is no gauge to measure water level data for Marine Creek Reservoir, but little fluctuation of water level occurs.

Results and Discussion

Habitat: A habitat survey was last conducted on Marine Creek Reservoir in 2010 (Hungerford and Brock 2011). The littoral zone habitat in Marine Creek Reservoir has remained consistent with the dominant habitat consisting of sections of rocky shoreline and areas of shoreline emergent vegetation including water willow, cattail, and bulrush.

Prey species: Total CPUE of Gizzard Shad was low in 2022 (43.5/h) and similar to previous surveys in 2018 and 2014 (Figure 1). Index of Vulnerability (IOV) for Gizzard Shad was zero, indicating that Gizzard Shad were not available to existing predators; this was lower but similar to IOV estimates in previous years (Figure 1). Electrofishing catch rates of Bluegill and Redear Sunfish were 357.0/h and 64.5/h, respectively (Figures 2 and 3). Total CPUE of Bluegill in 2022 was higher than total CPUE from surveys in 2018 and 2014, and size structure continued to be dominated by small individuals (Figure 2). Catch rates of Redear Sunfish in 2022 were higher than total CPUE from surveys in 2018 and 2014, and size structure continued to be dominated by large individuals (Figure 3).

Largemouth Bass: Electrofishing catch rate of Largemouth Bass was 142.5/h with a stock-size CPUE of 120.0/h, both of which were higher than the previous two surveys (Figure 4). The OBS objectives for this species, abundance (CPUE – Stock; RSE \leq 25) and size structure (PSD and length frequency; N \geq 50) were achieved with 80 stock-size LMB collected and an RSE of 9 (Figure 4). Size structure was balanced with a PSD of 61 (Figure 4). Body conditions in 2022 were fair to good (relative weight >85) for all size classes of fish and was similar to body condition in previous surveys (Figure 4). Florida alleles and Florida genotype increased from 2004 to 2018 (Brock et al. 2019). Fin clips for genetic analyses were not collected in 2022 but will be collected during the 2026 electrofishing survey of Marine Creek Lake.

Spotted Bass: The electrofishing catch rates of Spotted Bass were nearly identical to previous surveys with a total and stock-size CPUE of 15.0/h in 2022 (Figure 5). Body conditions of Spotted Bass were excellent for all size classes (Figure 5).

White Crappie: The trap net catch rate of White Crappie increased from 4.3/nn in 2018 to 7.6/nn in 2022 (Figure 6). The OBS objectives for this species, size structure (PSD and length frequency; N = 25) were achieved with 38 individuals collected (Figure 6). The PSD value of 74 indicates an unbalanced population with nearly all fish collected being stock-size or larger suggesting a problem with White Crappie recruitment. Crappie recruitment is known to be sporadic across years (Allen and Miranda 1998), but consistently high PSD values indicate that recruitment is an ongoing issue for White Crappie in Marine Creek. Mean relative weight was above 80 for all size classes in 2022 and was similar to values observed in previous surveys (Figure 6). More than half of the individuals collected were legal harvest size and size distribution expanded to include larger and smaller individuals than observed in previous surveys (Figure 6).

Fisheries Management Plan for Marine Creek Reservoir, Texas

Prepared – July 2023

ISSUE 1: Marine Creek has been stocked with approximately 39,000 Sharelunker Largemouth Bass offspring since 2006. Stocking of ShareLunker offspring has resulted in several trophy size fish being caught by anglers, the largest of which was 14.57 lbs caught in 2019. These larger fish were the result of stocking advanced fingerlings. Continued introduction of Florida Largemouth Bass genetics is necessary to maintain the trophy potential of this fishery.

MANAGEMENT STRATEGY

1. Collect fin clips from at least 30 Largemouth Bass collected during standard management surveys to continue genetic analyses.
2. Request Lone Star Bass advanced fingerlings, which are 2nd generation offspring of pure Florida strain ShareLunker Largemouth Bass that have proven to be able to grow to ≥ 13 pounds, at a rate of 25/acre.

ISSUE 2: Marine Creek reservoir has limited habitat that is accessible to bank anglers. Most of the shoreline that is accessible by bank anglers is featureless and has erosion problems. In 2017, twenty-four PVC cubes were deployed in two locations (12 cubes/location) near featureless shoreline that could be fished by bank anglers. Outreach activities with young, novice anglers at these locations have produced satisfactory catch rates.

MANAGEMENT STRATEGY

1. Conduct a structural habitat and vegetation survey in 2024.
2. Propose installing riprap on areas of featureless shoreline to increase fish habitat and prevent erosion to the controlling authority, Tarrant Regional Water District.
3. Collaborate with TRWD to apply for a Habitat and Angler Access Program grant to install riprap on most of the eastern shoreline and north of the Ten Mile Bridge boat ramp.

ISSUE 3: Since 2002, Redear Sunfish and Spotted Bass abundances have been extremely variable despite little to no change in physical habitat or water level. In 2008, Redear Sunfish and Spotted Bass abundances inexplicably declined sharply. Although both species' abundances have rebounded, neither species has returned to pre-2008 numbers. Redear Sunfish recruitment and abundance remains low and highly variable while Spotted Bass recruitment and abundance remains stable, but low. Habitat enhancements such as gravel beds for spawning and rock piles for refuge could lead to improved recruitment and higher abundances of Redear Sunfish and Spotted Bass.

MANAGEMENT STRATEGY

1. Propose gravel bed installation in areas of the reservoir where aquatic vegetation provides refuge and food resources for young fish and shallow depths or lack of accessible shoreline limits angler access to the controlling authority, Tarrant Regional Water District.

2. Propose installing riprap on areas of featureless shoreline to increase fish refuge and forage habitat to the controlling authority, Tarrant Regional Water District.
3. Collaborate with TRWD to apply for a Habitat and Angler Access Program grant to install gravel beds in the northeastern arm and central western cove and to install riprap on most of the eastern shoreline and north of the Ten Mile Bridge boat ramp.

ISSUE 4: Many invasive species threaten aquatic habitats and organisms in Texas and can adversely affect the state ecologically, environmentally, and economically. For example, zebra mussels can multiply rapidly and attach themselves to any available hard structure, restricting water flow in pipes, fouling swimming beaches, and plugging engine cooling systems. Giant salvinia and other invasive vegetation species can form dense mats, interfering with recreational activities like fishing, boating, skiing, and swimming. The financial costs of controlling 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 (2023–2027)

Sport fish, forage fish, and other important fishes

Important sport fishes in Marine Creek Reservoir include Largemouth Bass and White Crappie. Known important forage species include Gizzard and Threadfin Shad, Bluegill, Redear Sunfish, and Longear Sunfish. State proposed sampling schedule can be found in Table 6.

Low-density fisheries

Channel Catfish: Channel Catfish have been present in Marine Creek Reservoir, but sampling catch rates have been consistently low. Given the low catch rates, no gill net surveys will be conducted, and no objectives will be set for CPUE or size structure information for Channel Catfish.

Blue Catfish: Blue Catfish were first sampled in Marine Creek in 2019. Only one Blue Catfish was collected, so we suspect its presence was a result of an unauthorized stocking. No gill net surveys will be conducted, and no objectives will be set for CPUE or size structure information for Blue Catfish.

Spotted Bass: Spotted Bass are present in Marine Creek Reservoir; however, they are in low relative abundance. We will record CPUE and size structure data from all Spotted Bass captured by electrofishing surveys directed at Largemouth Bass and forage species.

White Bass: White Bass are present in Marine Creek, but the catch rates are variable, and recruitment appears to be very low. Thus, no gill net surveys will be conducted, and no objectives will be set for CPUE or size structure information for White Bass.

Survey objectives, fisheries metrics, and sampling objectives

Largemouth Bass: Electrofishing catch rates for Largemouth Bass have been historically high in Marine Creek Reservoir. Fall nighttime electrofishing will be conducted in 2026. A minimum of 8 randomly selected 5-min sites will be sampled to collect trend data on CPUE, size structure, and body condition for Largemouth Bass. Based on past catch rates, this should be adequate to obtain an RSE of CPUE-S \leq 25. If the RSE objective is not met, additional electrofishing sampling will only continue if 50 stock-size or larger fish are not captured in the first 8 sample sites. Marine Creek Reservoir has been stocked with approximately 39,000 Sharelunker Largemouth Bass since 2006 and nearly 13,000 Florida Largemouth Bass (2014) as a part of a selective breeding research project. Given the presence of genetically superior Largemouth Bass, fins will be clipped on at least 30 Largemouth Bass collected during standard sampling in 2026.

White Crappie: White Crappie catch rates have increased since 2014 in Marine Creek Reservoir. A trap-netting survey consisting of 3 single-cod shoreline net sets will be conducted in fall 2026. The objective of this sampling will be to collect a minimum of 25 stock length fish which will allow us to estimate the size structure of the population. This should provide sufficient information for monitoring large-scale changes in the population. No additional effort will be expended if 25 stock length fish are not collected in the 3 trap nets.

Sunfish and Shad: Bluegill, Redear Sunfish, and Threadfin and Gizzard Shad are the primary forage species in Marine Creek Reservoir. Like Largemouth Bass, trend data on CPUE and size structure will be collected with fall nighttime electrofishing. Sampling, as with Largemouth Bass above, will allow for monitoring of large-scale changes in sunfish and shad relative abundances and size structures. Sampling effort based on achieving sampling objectives for Largemouth Bass should result in sufficient numbers of Bluegill, Redear Sunfish, and Threadfin and Gizzard Shad for size structure estimation (PSD and IOV; 50 fish minimum at 8 stations with 80% confidence). No additional effort will be expended if these goals are not met by sampling effort for Largemouth Bass.

Literature Cited

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Tables and Figures

Table 1. Reservoir characteristics of Marine Creek Reservoir, Texas.

Characteristic	Description
Year constructed	1958
Controlling authority	Tarrant Regional Water District
County	Tarrant
Reservoir type	Tributary Trinity River
Shoreline development index	2.32
Conductivity	315 μ S/cm

Table 2. Boat ramp characteristics for Marine Creek Reservoir, Texas, August 2022.

Boat ramp	Latitude Longitude (dd)	Public	Parking capacity (N)	Elevation at end of boat ramp (ft)	Condition
IH-820 Access Road Ramp	32.82591 -97.39061	Y	36	Unknown	Excellent
Ten Mile Bridge Road Ramp	32.82862 -97.39933	Y	15	Unknown	Ramp is good, parking is gravel and rough

Table 3. Harvest regulations for Marine Creek Reservoir, Texas.

Species	Bag limit	Length limit
Catfish: Channel and Blue Catfish, their hybrids, and subspecies	25 (only 10 \geq 20 inches)	None
Bass, White	25	10-inch minimum
Bass, Largemouth	5	18-inch minimum
Bass: Spotted and Guadalupe	5 ^a	None
Crappie: White and Black crappie, their hybrids, and subspecies	25 (in any combination)	10-inch minimum

^a Daily bag for Largemouth Bass, Spotted Bass, and Guadalupe Bass = 5 fish in any combination.

Table 4. Stocking history of Marine Creek Reservoir, Texas. FGL = fingerling, AFGL = advanced fingerling, ADL = adult.

Species	Year(s) Stocked	Number of Years	Number Stocked	Size
Channel Catfish	2004	1	11,608	FGL
	2009	1	18,758	FGL
	2014 – 2018	5	937	ADL
	2021	1	2,880	ADL
	2023	1	172	ADL
Florida Largemouth Bass	1977 – 1978	2	39,080	FGL
	2014	1	12,797	FGL
ShareLunker Largemouth Bass ^a	2006	1	6,290	AFGL
	2008	1	6,254	AFGL
	2014	1	12,599	FGL
	2019	1	13,900	FGL

^a ShareLunker Largemouth Bass are 1st generation offspring from angler-donated Largemouth Bass \geq 13 pounds from the Toyota ShareLunker program.

Table 4. Objective-based sampling plan components for Marine Creek Reservoir, Texas 2022–2023.

Gear/target species	Survey objective	Metrics	Sampling objective
<i>Electrofishing</i>			
Largemouth Bass	Abundance	CPUE–Stock	RSE–Stock ≤ 25
	Size structure	PSD, length frequency	$N \geq 50$ stock
	Condition	W_r	$N \geq 50$ stock
	Genetics	% FLMB	$N = 30$, any age
Bluegill ^a	Abundance	CPUE–Total	RSE ≤ 25
	Size structure	PSD, length frequency	$N \geq 50$ stock
Gizzard Shad ^a	Abundance	CPUE–Total	RSE ≤ 25
	Size structure	PSD, length frequency	None
	Prey availability	IOV	None
<i>Trap netting</i>			
Crappie	Size structure	PSD, length frequency	$N = 25$
	Condition	W_r	None

^a No additional effort will be expended to achieve an RSE ≤ 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

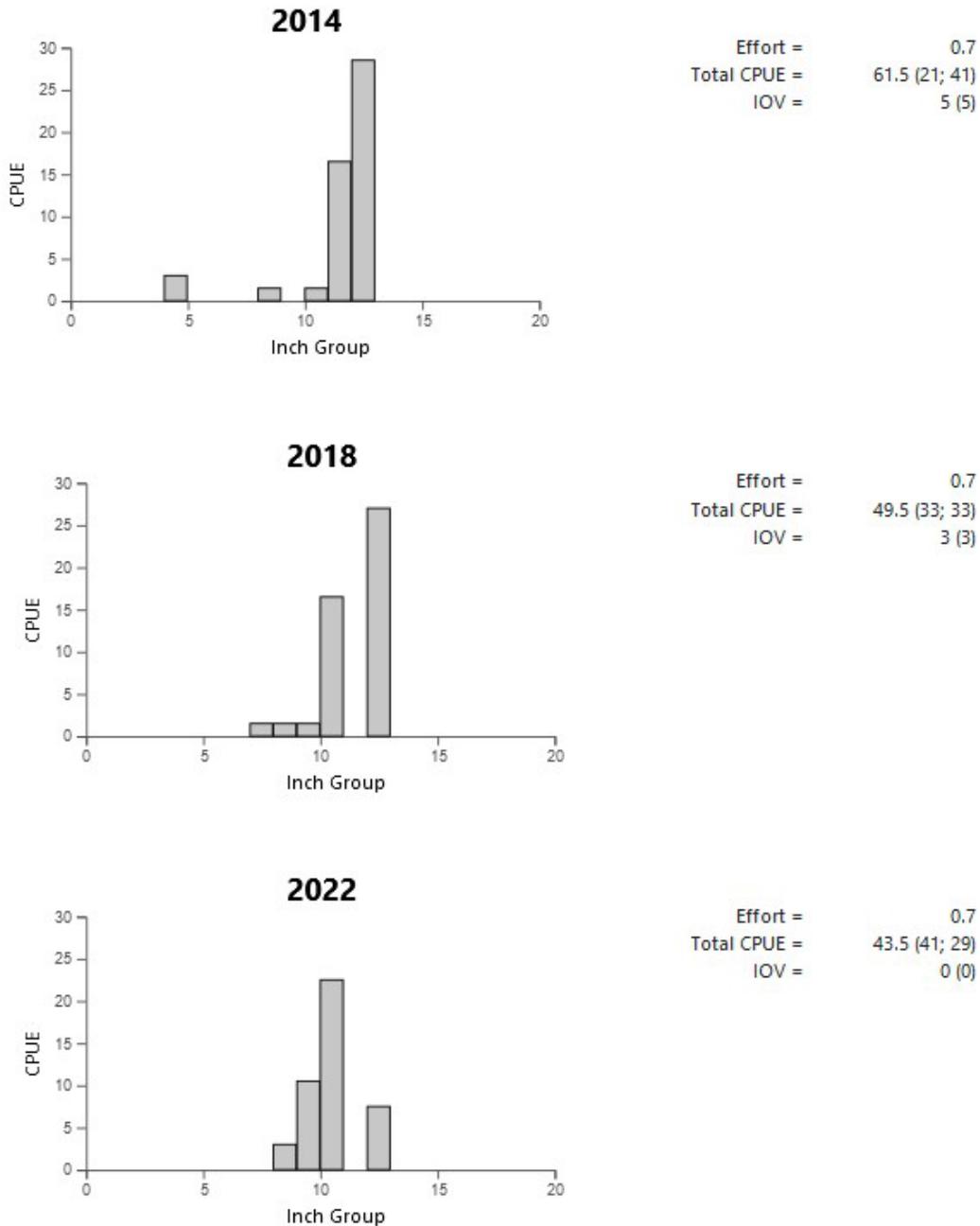


Figure 1. Number of Gizzard Shad caught per hour (CPUE) and population indices (RSE and N for CPUE and SE for IOV are in parentheses) for fall electrofishing surveys, Marine Creek Reservoir, Texas, 2014, 2018, and 2022.

Bluegill

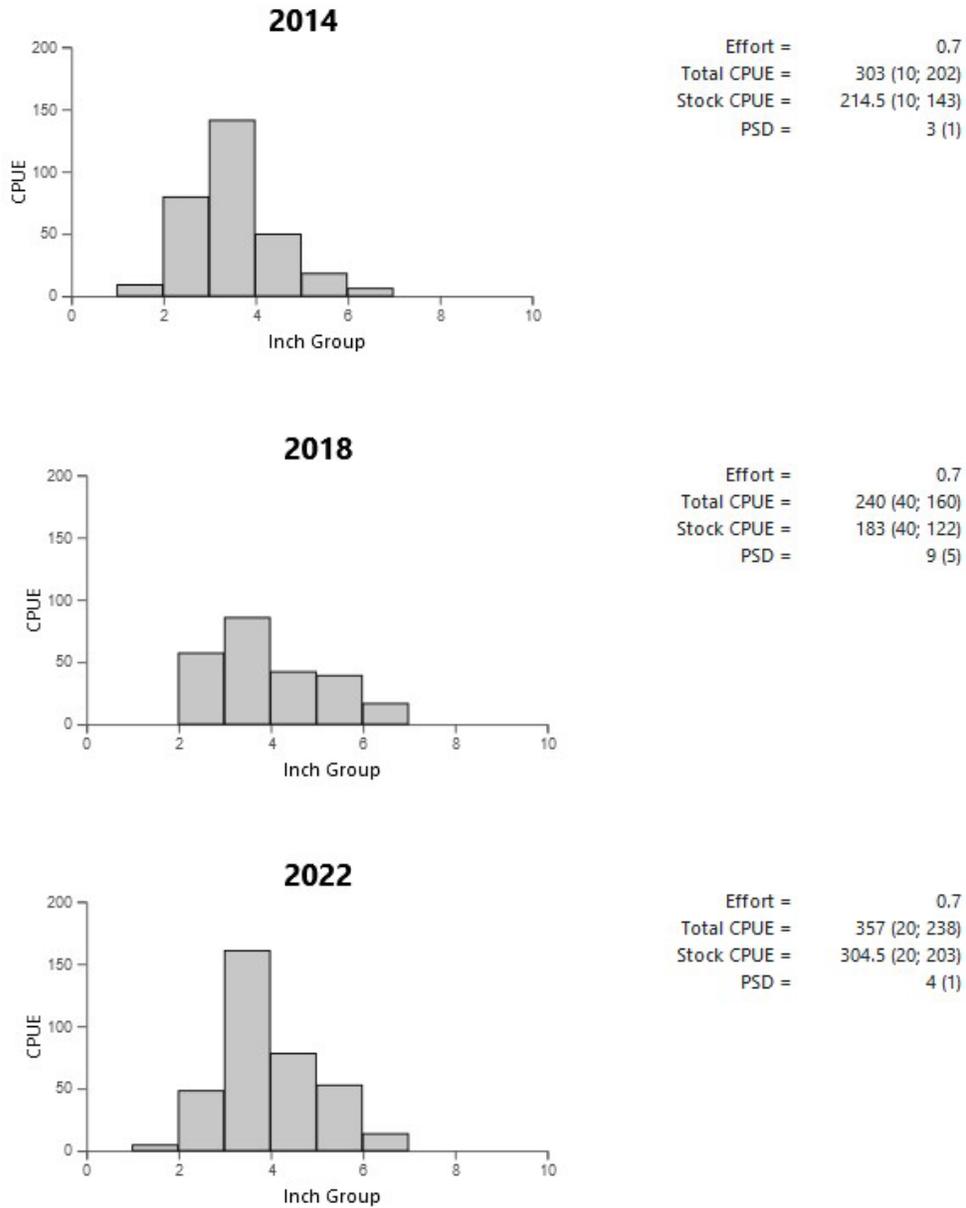


Figure 2. Number of Bluegill caught per hour (CPUE) and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for fall electrofishing surveys, Marine Creek Reservoir, Texas, 2014, 2018, and 2022.

Redear Sunfish

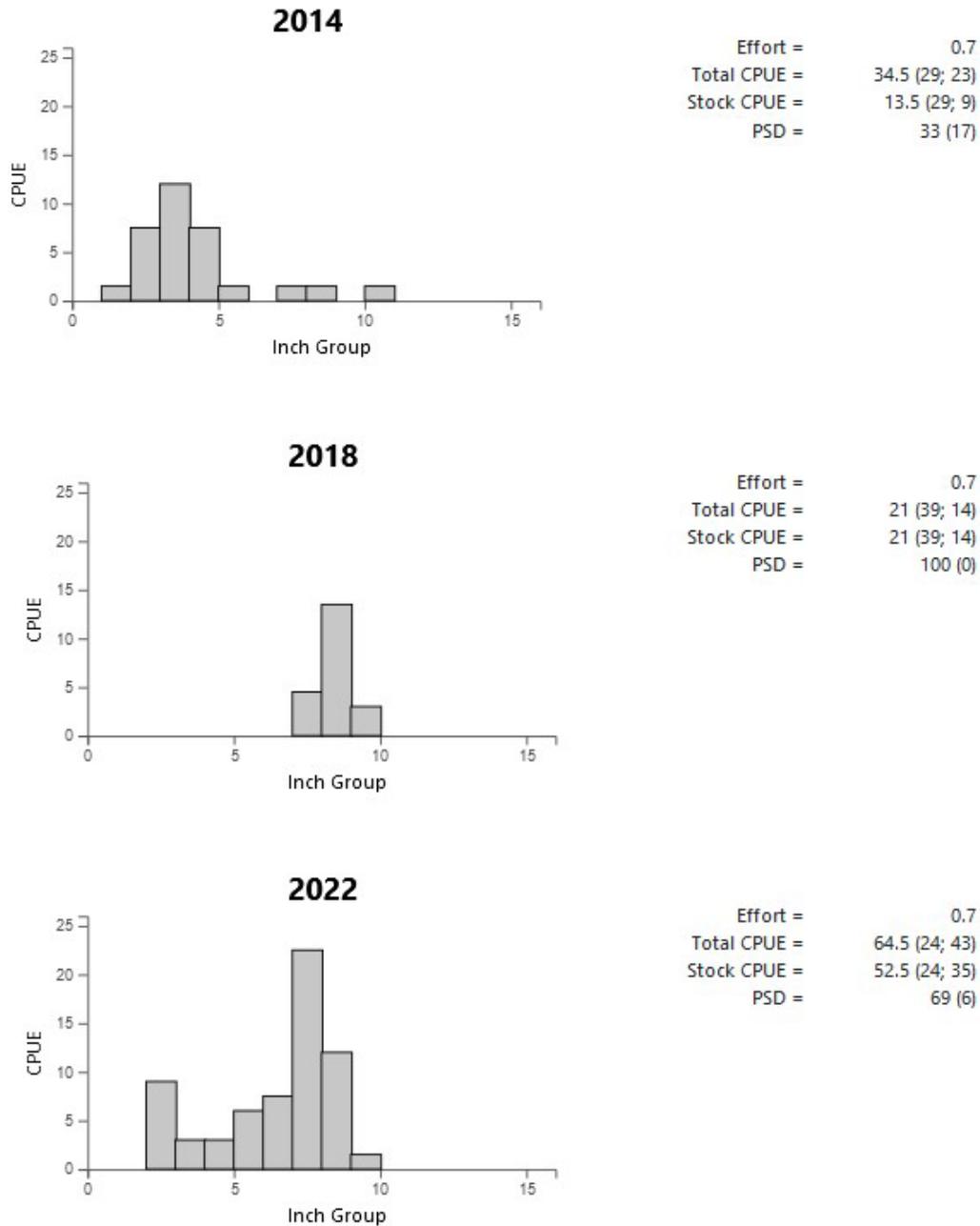


Figure 3. Number of Redear Sunfish caught per hour (CPUE) and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for fall electrofishing surveys, Marine Creek Reservoir, Texas, 2014, 2018, and 2022.

Largemouth Bass

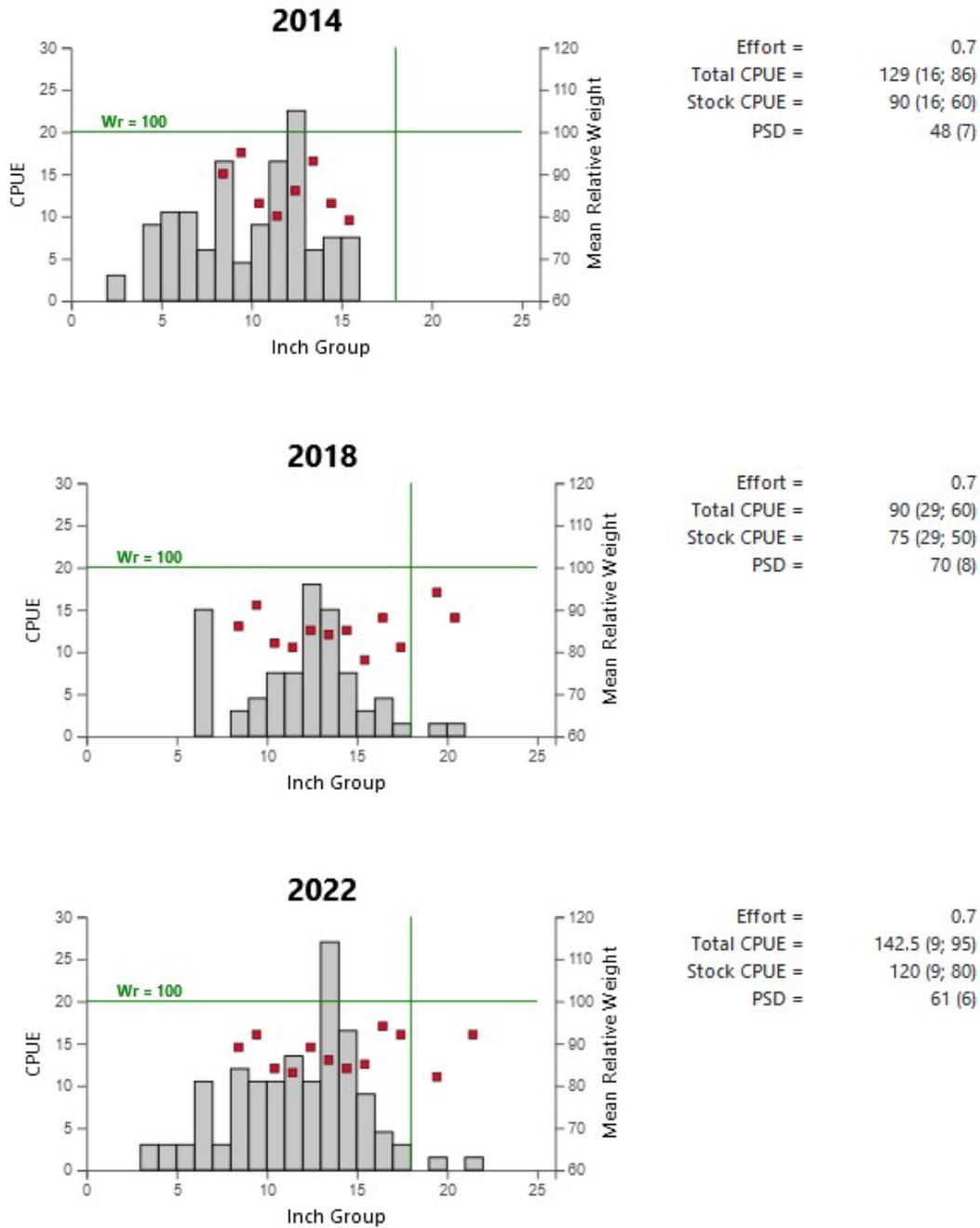


Figure 4. Number of Largemouth Bass caught per hour (CPUE, bars), mean relative weight (diamonds), and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for fall electrofishing surveys, Marine Creek Reservoir, Texas, 2014, 2018, and 2022. Vertical line indicates minimum length limit. Horizontal line indicates optimal relative weight of 100.

Spotted Bass

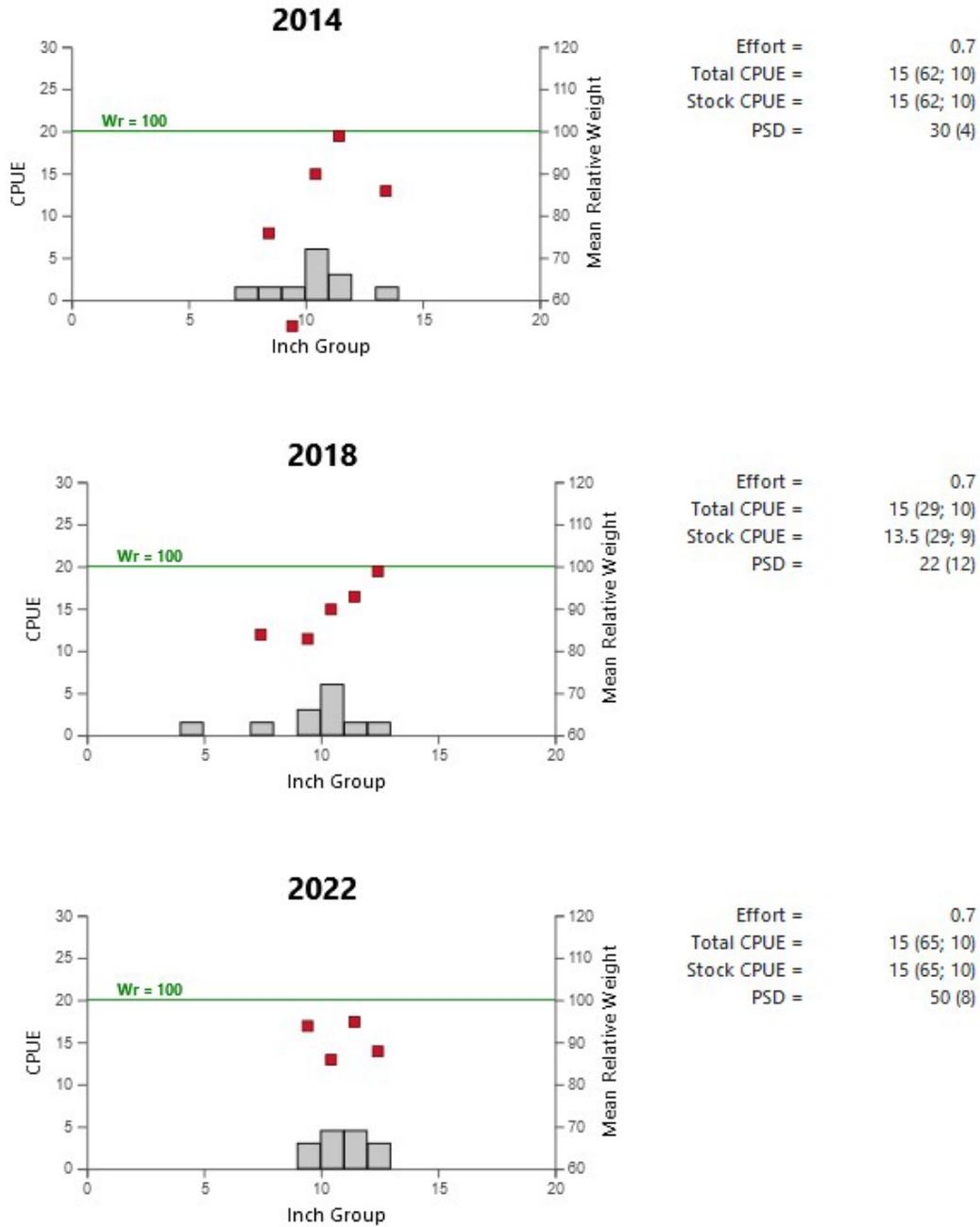


Figure 5. Number of Spotted Bass caught per hour (CPUE, bars), mean relative weight (diamonds), and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for fall electrofishing surveys, Marine Creek Reservoir, Texas, 2014, 2018, and 2022. Horizontal line indicates optimal relative weight of 100.

White Crappie

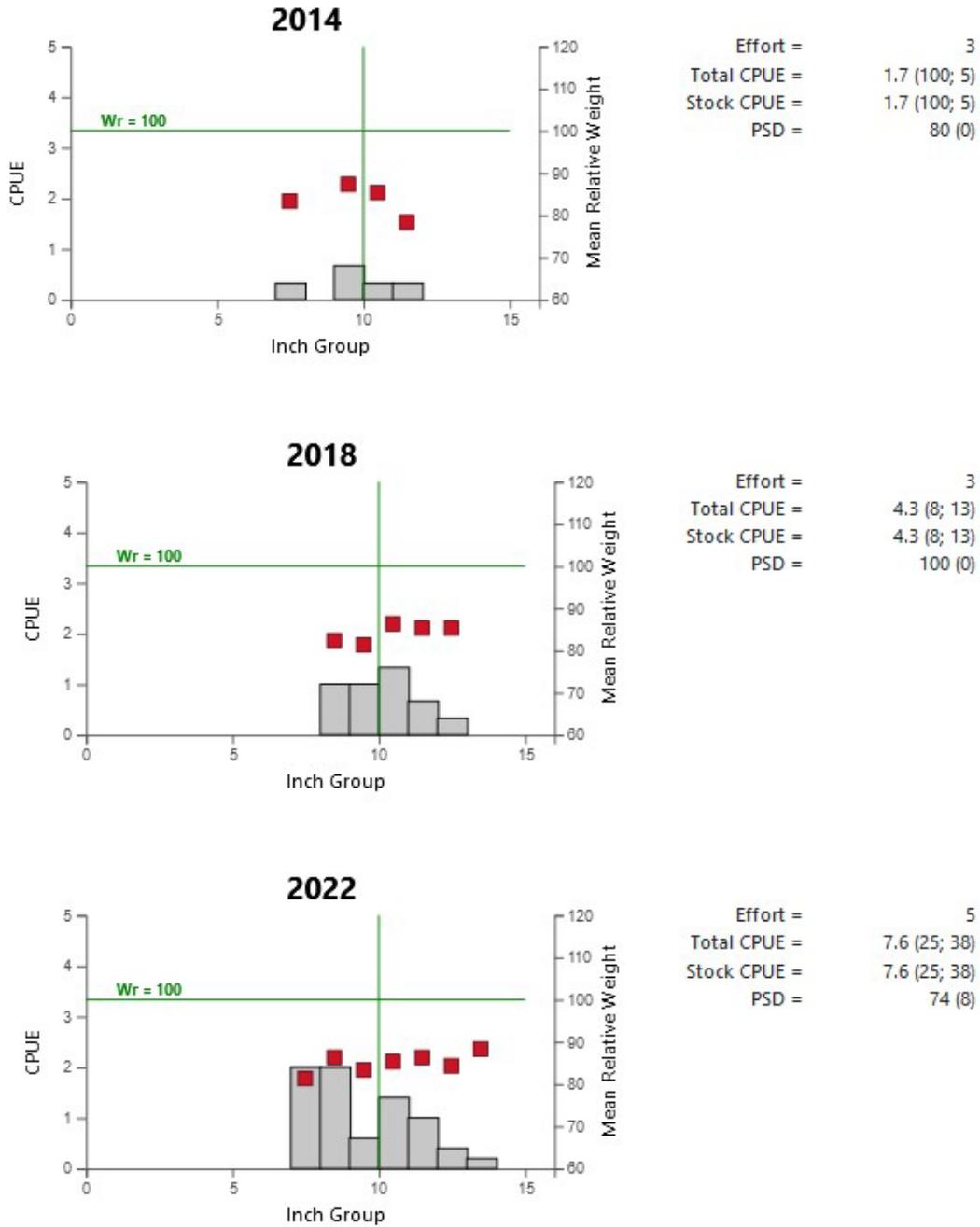


Figure 6. Number of White Crappie caught per net night (CPUE, bars), mean relative weight (diamonds), and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for fall trap netting surveys, Marine Creek Reservoir, Texas, 2014, 2018, and 2022. Vertical line indicates minimum length limit. Horizontal line indicates optimal relative weight of 100.

Proposed Sampling Schedule

Table 5. Proposed sampling schedule for Marine Creek Reservoir, Texas. Survey period is June through May. Electrofishing and trap netting surveys are conducted in the fall, angler access, habitat, and vegetation surveys are conducted in the summer, and gill netting surveys are conducted in the spring,

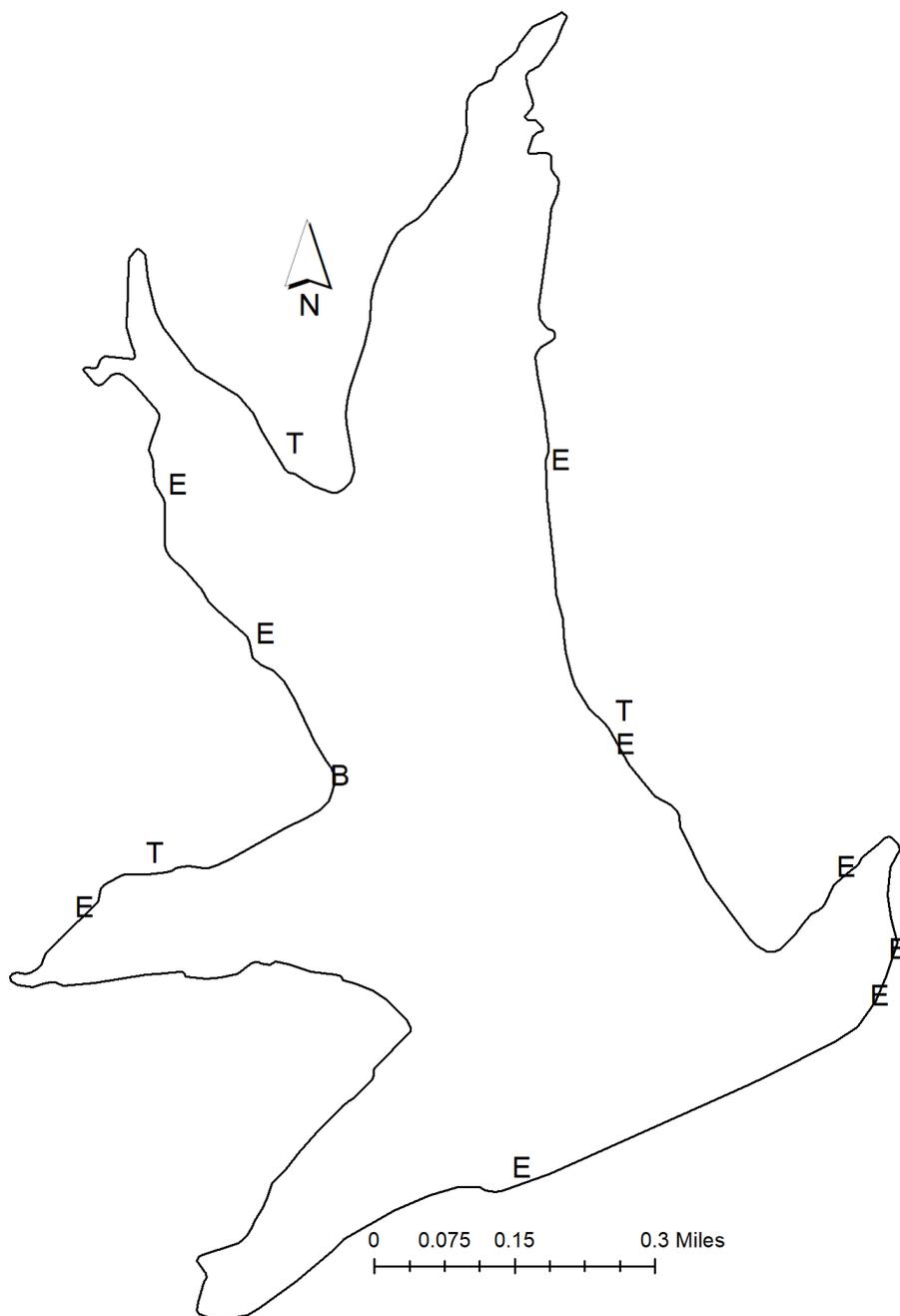
	Survey year			
	2023-2024	2024-2025	2025-2026	2026-2027
Angler Access		X		
Structural Habitat		X		
Vegetation		X		
Electrofishing – Fall				X
Trap netting				X
Report				X

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 Marine Creek Reservoir, Texas, 2022-2023. Sampling effort was 3 net nights for trap netting, and 40 minutes for electrofishing.

Species	Trap Netting		Electrofishing	
	N	CPUE	N	CPUE
Gizzard Shad			29	43.5 (41)
Threadfin Shad			18	27 (88)
Green Sunfish			16	24 (37)
Warmouth			3	4.5 (49)
Bluegill			238	357 (20)
Longear Sunfish			78	117 (21)
Redear Sunfish			43	64.5 (24)
Spotted Bass			10	15 (65)
Largemouth Bass			95	142.5 (9)
White Crappie	38	7.6 (25)		

APPENDIX B – Map of sampling locations



Location of sampling sites, Marine Creek Reservoir, Texas, 2022-2023. Trap net and electrofishing stations are indicated by T and E, respectively. Boat ramps are indicated by B. Water level was near full pool at time of sampling.

Historical catch rates cont'd.

Gear	Species	Year				
		2003	2007	2011	2015	2019
<i>Gill netting</i> (fish/nn)	Gizzard Shad		8.0	4.0	9.0	4.67
	Bluegill				0.33	
	Redear Sunfish				0.33	
	Common Carp		0.67		0.33	0.33
	Channel Catfish		2.33	1.33	2.67	2.33
	Blue Catfish					0.33
	Flathead Catfish			0.33	0.33	
	Freshwater Drum		0.33			
	Spotted Bass					0.33
	Largemouth Bass		0.33	3.0	1.0	1.33
	White Bass	9.0	4.67	1.33	11.0	8.33
	White Crappie			9.33	6.33	2.33

APPENDIX D – Artificial Fish Habitat

GPS coordinates of PVC cube structure sites in Marine Creek Reservoir, Fort Worth, TX.

Sites	Latitude/Longitude
Structure Site 1	32.825378, -97.398031
Structure Site 2	32.832687, -97.395956

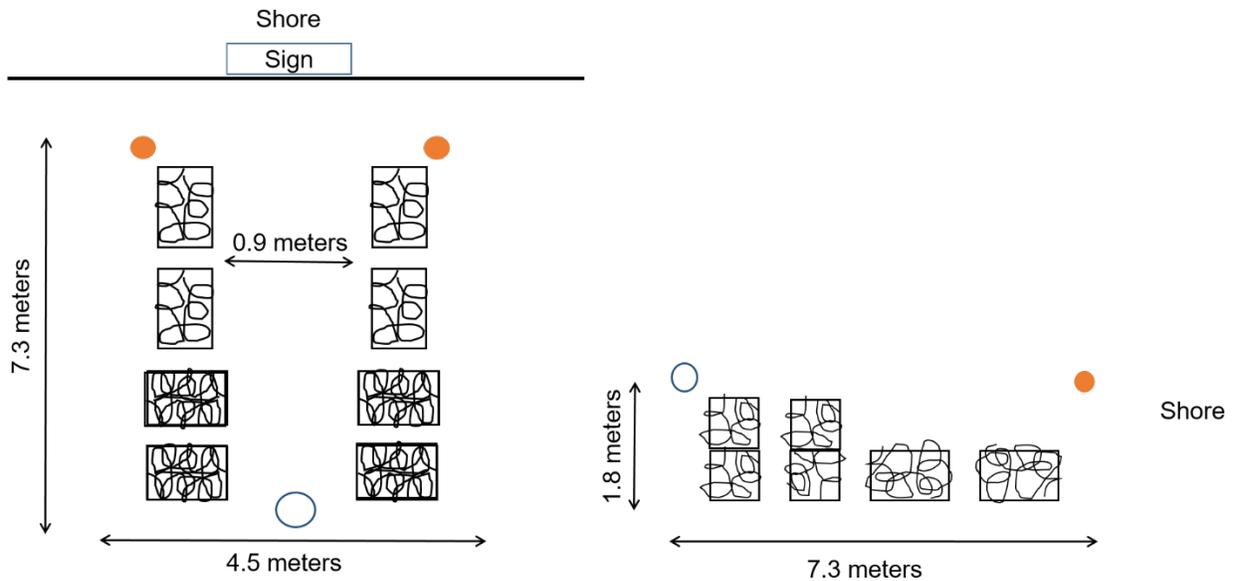


Diagram of artificial fish habitat structure cluster in Marine Creek Reservoir, Fort Worth, TX. Left side of image represents a top view of the structure cluster, right side of image represents a side view of the structure cluster. Structures = rectangles, shoreline buoys = closed circles, open water buoys = open circles. Sign indicates information signs posted at each site. Shoreline buoys are no longer present at the structure sites. The cause of their disappearance/removal is unknown.

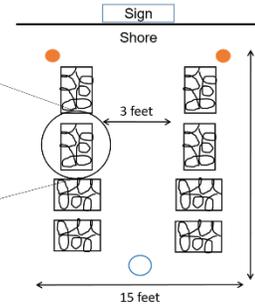


Artificial Fish Habitat Structure

Artificial habitats are a tool commonly used to concentrate sunfish and attract game fish in an effort to improve angler success.



The structure is constructed of PVC and corrugated drain pipe



Common Fish Species



Largemouth Bass



Bluegill



Green Sunfish



Longear Sunfish



Redear Sunfish



White Crappie



For more information visit:
http://tpwd.texas.gov/fishboat/fish/recreational/lakes/marine_creek/
<http://tpwd.texas.gov/fishattractor>

Recommended Fishing Techniques

- Fish outside the orange buoys
- Use artificial lures or live bait



Worms



Minnows



Soft Plastics



Crankbaits



Jigs



Spoons



Informational sign posted on shore at each artificial fish habitat structure site, Marine Creek Reservoir, Fort Worth, TX. Sign printed and posted by controlling authority, Tarrant Regional Water District (TRWD).



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