Purtis Creek State Park Lake

2024 Fisheries Management Survey Report

PERFORMANCE REPORT

As Required by

FEDERAL AID IN SPORT FISH RESTORATION ACT

TEXAS

FEDERAL AID PROJECT F-221-M-5

INLAND FISHERIES DIVISION MONITORING AND MANAGEMENT PROGRAM

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Survey and Management Summary

Fish populations in Purtis Creek State Park Lake were surveyed in 2022 using electrofishing, 2024 using trap nets and electrofishing, and 2025 with hoop nets. An aquatic vegetation survey was conducted in the summer of 2024. Historical data are presented with the 2022–2025 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: Purtis Creek State Park Lake is a 349-acre impoundment located on Purtis Creek in the Trinity River Basin approximately 4 miles north of Eustace, Texas. The impoundment was constructed by the Texas Parks and Wildlife Department (TPWD) in 1985 for recreation. Boat and bank access are both good and the park maintains two handicap-accessible fishing piers. Habitat features consist of standing timber, rocks, and native submersed and emergent aquatic plants.

Management History: Important sport fishes include Largemouth Bass, White Crappie, and Channel Catfish. Recent management activities included changing the catch-and-release regulation for Largemouth Bass to a 16-inch maximum length limit with exemptions for ShareLunker Program entry, changing the Channel Catfish harvest regulation to match the statewide Channel Catfish regulation, stocking Channel Catfish when fingerlings are available, monitoring the littoral habitat biennially, and improving bank angler success around the two fishing piers. Efforts were also made to establish desirable native species of aquatic vegetation.

Fish Community

- **Prey species:** Threadfin Shad were abundant in the reservoir. Electrofishing catch of Gizzard Shad was moderate with 81% of Gizzard Shad available as prey to most sport fish. Electrofishing catch of Bluegill was high when compared to previous surveys and most individuals in the population measured less than six inches.
- **Channel Catfish:** Channel Catfish recruitment has historically been impacted in the reservoir from limited spawning habitat and Largemouth Bass predation. Channel Catfish are present in low abundance within the reservoir.
- **Largemouth Bass:** Largemouth Bass body condition was good. Catch rates improved in 2024 from previous surveys (2018 and 2020) but remained lower than historical averages.
- **White Crappie:** White Crappie remain moderately abundant, display adequate growth, and exhibit good body condition.

Management Strategies: Inform the public about the negative impacts of aquatic invasive species. Improve habitat through the application of artificial shoreline habitats. Continue to manage Largemouth Bass with a 16- inch maximum length limit, and all other species under statewide fishing regulations.

Introduction

This document is a summary of fisheries data collected from Purtis Creek State Park Lake in 2022–2025. 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 2022-2025 data for reference.

Reservoir Description

Purtis Creek State Park Lake is a 349-acre impoundment located on Purtis Creek in the Trinity River Basin approximately 4 miles north of Eustace, Texas. The impoundment was constructed by the Texas Parks and Wildlife Department in 1985 for recreation. Habitat at time of sampling consisted primarily of standing timber. Other descriptive characteristics for Purtis Creek State Park Lake are in Table 1.

Angler Access

Purtis Creek State Park Lake has one public boat ramp located on the southeast corner of the reservoir. Additional boat ramp characteristics are available in Table 2. Shoreline access is excellent, and two handicap-accessible fishing piers offer ample fishing opportunities for bank anglers.

Management History

Previous management strategies and actions: Management strategies and actions from the previous survey report (Smith et. al. 2020) included:

1. Due to continued poor success of establishing aquatic vegetation, enhance littoral habitat through artificial structures. Pursue Conservation License Plate (CLP) funds to purchase the structures.

   Action: This action was not completed due to CLP funds being directed to other waterbodies with higher needs.

2. Introduce catfish spawning boxes throughout the reservoir to potentially improve spawning habitat and recruitment into the fishery. Evaluate the population and fishery as prescribed in the OBS plan.

   Action: Catfish spawning boxes were not introduced to the reservoir. With declining aquatic vegetation throughout the lake, there is currently ample standing timber and laydowns that are accessible and offer quality spawning habitat for Channel Catfish.

3. Install underwater green lighting on the two fishing piers to improve angling. Gauge state park staff interest in installing and maintaining a fish feeder near the fishing piers.

   Action: Underwater green lighting was not installed around any of the fishing piers due to issues with electricity that is needed to make lights operational. State Parks staff were contacted, and it was determined that they were not interested in keeping and maintaining a feeder near the fishing piers.

Harvest regulation history: On September 1, 2018, regulations for Largemouth Bass were modified to a five fish bag limit with a 16-inch maximum length limit where one Largemouth Bass over 24 inches can be temporarily retained to be submitted to the ShareLunker program. Prior to this regulation, Largemouth Bass were managed under a catch-and-release regulation where one fish over 24 inches could be retained to be donated to the ShareLunker program. Prior to September 1, 2008, anglers could retain one fish greater than 21 inches to be weighed at a lake-side weigh station and immediately released or donated to the ShareLunker program. On September 1, 2021, harvest regulations for Channel / Blue Catfish and their hybrids changed from the previous 5 fish limit with no minimum length to follow the new statewide regulation of 25 fish with no minimum length with the exception that only 10 fish can be over 20 inches in length. All other fish species are managed under Texas statewide fishing regulations. A list of all current regulations can be found in Table 3.

Stocking history: 24,180 advanced-size (6-inch) ShareLunker Largemouth Bass were stocked from 2006–2012. In 2019 approximately 68,045 Florida Largemouth Bass fry were stocked. Channel Catfish have been stocked periodically since 1985 to maintain the population. 37,169 fingerling and 61 adult Channel Catfish have been stocked from 2021-2025. One thousand triploid (sterile) Grass Carp were stocked in 2007. The complete stocking history can be found in Table 4.

Vegetation/habitat management history: Historically, hydrilla required annual treatments with aquatic herbicide by TPWD Inland Fisheries Aquatic Habitat Enhancement staff to maintain access to the reservoir. Hydrilla covered roughly 6% of the reservoir in 2004 and expanded to cover 60% of the reservoir surface area by the fall of 2006. In 2007, strong currents from a flood event reduced hydrilla coverage to trace levels (Bennett and Ott 2009). One thousand triploid Grass Carp (stocked in 2007 prior to flood event) have prevented the re-growth of hydrilla. A native vegetation enhancement project involving submersed and emergent species was initiated in July 2013; maintenance, expansion and replanting continued through 2018. A total of 10 enclosure cages were constructed around the native vegetation colonies to prevent Grass Carp grazing. Previous reports indicated that Grass Carp populations were declining according to a model developed by Kirk and Socha (2003) and should have a negligible impact on aquatic vegetation. Although this may be true, Grass Carp have been seen in recent management surveys and a lack of aquatic vegetation is still present throughout the reservoir.

Water transfer: Purtis Creek State Park Lake is one of the few water bodies owned and operated by Texas Parks and Wildlife Department. The primary purpose for the lake is recreation, and to a lesser extent flood control. 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 Purtis Creek State Park Lake (Smith et. al. 2020). Primary components of the 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, sunfishes, Gizzard Shad, and Threadfin Shad were collected by electrofishing (1.0 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. Electrofishing was performed using a Smith-Root Apex electrofisher prior to this survey electrofishing was done using a GPP 5.0 electrofisher.

Trap netting – Crappie were collected using trap nets (10 net-nights at 10 stations). CPUE for trap netting was recorded as the number of fish caught per net night (fish/nn). Mean age at harvest length for crappie were determined using otoliths from 13 randomly selected fish (range 9.6 to 10.4 inches).

Tandem hoop nets – Channel Catfish were collected using 9 tandem hoop-net series at 9 stations. Nets were baited with soap and deployed for two-night soak durations. CPUE for tandem hoop netting was recorded as the number of fish caught per tandem hoop net series (fish/series).

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 statistics.

Habitat – A vegetation survey was conducted in 2024. Habitat was assessed with the digital shapefile method (TPWD, Inland Fisheries Division, unpublished manual revised 2022).

Results and Discussion

Habitat: Due to the negligible coverage of aquatic vegetation in the reservoir, efforts were shifted from biennial vegetation surveys (as prescribed in 2017 OBS plan) to one survey every four years. The most recent survey (summer 2024) revealed limited surface-acre coverage of all aquatic vegetation (Table 6). Panicum occupied approximately 1 acre. Water willow and cattail each occupied less than one acre. Several other species were present in trace amounts including square stem rush, American lotus, water leaf, bull tongue, water primrose, coontail, and buttonbush. Non-native species that have been present in Purtis Creek State Park Lake in the past, including alligator weed and hydrilla, were not present in the 2020 survey but were found in the 2024 survey, showing that these species are still present in the reservoir. Overall, the status of aquatic vegetation within Purtis Creek State Park Lake is substantially lower than preferred and will be addressed in the OBS plan.

Prey species: Gizzard Shad, Threadfin Shad and sunfish are all important prey species within the reservoir. Threadfin Shad catch rate was 4,728.50/h in 2024, showing that they are abundant in the reservoir and are a significant percentage of the prey population. The 2024 Gizzard Shad catch rate was 41.50/h, which was lower than the 2016 and 2020 surveys (167.0/h, and 136.0/h, respectively). Index of vulnerability (IOV) for Gizzard Shad was moderately high, indicating that 81% of Gizzard Shad were available to existing predators. The 2024 IOV was improved from the 2016 and 2020 survey (Figure 1). Electrofishing catch rate of Bluegill was 459.0/h in 2024, which was higher than the 2016 and 2020 surveys (234.0/h and 132.0/h, respectively). Bluegill size structure has been dominated by small individuals over the last three surveys (PSD ranged from 4–17). The proportion of small Bluegill increased in 2024, with over 60% of the Bluegill captured in 2024 measuring less than five inches (Figure 2). Catch rates of other sunfishes were relatively low and included Redbreast Sunfish (33.0/h), Warmouth (4.0/h)

and Redear Sunfish (120.0/h; Appendix A). There was an overall trend of increased CPUE for sunfish species, especially Redear Sunfish which had a four-fold increase compared to the previous survey, indicating there is potential for developing a quality sunfish fishery. Overall, prey abundance and size composition should not be a limiting factor to the growth and condition of sport fishes.

Channel Catfish: Channel Catfish have historically displayed poor recruitment within the reservoir, presumably due to a combination of an abundant Largemouth Bass population and limited spawning habitat. The recent decline in Largemouth Bass abundance has likely led to reduced predation on juvenile Channel Catfish which subsequently would improve the survival of fingerling stockings. This also potentially allows for more consistent natural reproduction and recruitment of Channel Catfish. Past success of the catfish fishery had been dependent upon stocking advanced fingerlings that had greater chances of survival to sustain the population. Though hoop net surveys continue to show low abundance of Channel Catfish within the reservoir, CPUE increases show that the population could be slowly rising. CPUE has increased over the past three surveys (0.8/nn in 2017, 4.0/nn in 2020, 5.2/nn in 2025) . The size structure within the reservoir has also increased from PSD=16 in 2020 to PSD=48 for 2025, bases on previous surveys this could be driven by reduced predation from Largemouth bass. This combined with recruitment of stocked fish have led to an increased size structure. Target metrics have not been met over the past 3 surveys so this data may not give us the full picture of what the channel catfish population looks like within the lake. Overall, the Channel catfish fishery is on an upward trend and hoop nets are continuing to be evaluated as an effective sampling method.

Largemouth Bass: Fall catch rates of Largemouth Bass in 2024 were 67.0/h. This is a small increase from the previous survey of 57.0/h in 2021, and still significantly lower than what was seen in the past (2010-2016 CPUE avg = 114.8/h). Fall electrofishing has been known to produce variable catch rates on Purtis Creek State Park Lake, when it comes to stock fish (> 8 inches) making it difficult to accurately determine size structure. Spring electrofishing surveys, including the 2022 daytime survey, have shown similar patterns to fall surveys with highly variable catch rates as well as low abundance of stock-size fish in the surveys (Figure 5). Spring and fall surveys provide variable outlooks on size structure of the population as the 2022 spring survey (PSD = 76) shows us that the size distribution is more consistent, whereas the fall 2024 survey (PSD = 38) indicates that a significant portion of the population is < 8in, or below stock size (Figure 4). Body condition was good (mean W_r range 82-108 for all length classes) in the 2024 survey but there was a noticeable decline in mean relative weight as fish body condition increased. Increased overall body condition indices are likely a product of the increased abundance of threadfin shad in the reservoir; however, this could also be caused by less intraspecies competition as abundance declines. Age and growth analysis was not conducted as prescribed in the OBS plan due to only two fish being collected in the target size range (13.0-14.9 inches) during the 2024 survey. Additionally, target metrics for sampling (50 fish > stock size) were not met in any of the last three surveys. Due to the small size of the reservoir, additional stations were not feasible or warranted. Because the sampling metrics were not met we are unable to make definitive decisions on the status of the fishery using this data.

Crappie: The catch rate of 15.0/nn for White Crappie in 2024 was a moderate increase from that of 2016 and 2020 (11.5/nn and 7.3/nn, respectively; Figure 6). Size structure has varied over the last three surveys (PSD range = 52-98);), however, the population consists primarily of 8-13-inch crappie. Body condition was good (mean W_r = 96) with relative weights ranging from 86–103 for all inch classes collected. Growth rate of White Crappie in 2024 was fast with an average age at 10 inches (9.6-10.4 inches) of 1.0 years (N = 13). Black Crappie continue to provide angling opportunities in the reservoir but at very low densities (Appendix A). Overall, the crappie fishery within Purtis Creek State Park Lake is doing well and should be providing a significant part of the fishery within the lake.

Fisheries Management Plan for Purtis Creek State Park Lake, Texas

Prepared – July 2025

ISSUE 1: Largemouth Bass at Purtis Creek State Park Lake remain one of the primary targets for anglers. Recent electrofishing surveys (2018, 2020, and 2024) have displayed declining catch rates, particularly within 8–12 inches in length. This is indicative of continued poor year classes and inconsistent recruitment, which is likely a result of minimal littoral habitat in the reservoir.

MANAGEMENT STRATEGY

1. Improve littoral habitat by distributing cut water willow by boat during vegetation surveys.

ISSUE 3: The most recent creel data (2014–2015) indicated a high percentage of bank angling proportionally to boat angling on Purtis Creek State Park Lake. Two fishing piers and the surrounding accessible shoreline offer good access to anglers. Habitat around the fishing piers has been enhanced through the implementation of artificial structures, but attempts will continue in working to enhance the fishing quality for bank anglers at the park.

MANAGEMENT STRATEGIES

1. Continue to discuss the addition of electrical components on the two fishing piers in order to add green lighting to increase the success rates of fishing around the piers in the dawn, dusk and night hours.
2. Determine the condition and fish use around the existing artificial structures around the fishing piers to inform future use of artificial structures in Purtis Creek State Park Lake.

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 interbasin water transfers to facilitate potential invasive species responses.

Objective-Based Sampling Plan and Schedule (2025–2029)

Sport fish, forage fish, and other important fishes

Sport fishes in Purtis Creek State Park Lake include Blue Catfish, Channel Catfish, Largemouth Bass, and White Crappie. Important forage species include Gizzard Shad, Threadfin Shad, and sunfishes.

Low-density fisheries

White Bass: Historically, White Bass catch rates from gill netting have been low (2009 4.6/nn; 2013 0.2/nn). No directed angler effort was recorded for White Bass in the most recent creel survey (2014-2015), further indicating a negligible fishery.

Blue Catfish: Few Blue Catfish remain in Purtis Creek from stockings in 2000 and 2003, and very few have been collected in gill nets or documented in creel surveys.

Survey objectives, fisheries metrics, and sampling objectives

Crappie: Historically, the crappie fishery has been dominated by White Crappie; however, Black Crappie do exist in Purtis Creek at a relatively low abundance. Crappie are a popular sport fish in Purtis Creek and accounted for 19.6% of the directed angler effort during the most recent creel survey (2014–2015). Due to the popularity of this fishery in Purtis Creek, crappie trend data on relative abundance, size structure, body condition, and growth (measured by CPUE, PSD, W_r, and age at 10 inches) will continue to be monitored every four years to determine large-scale changes in the population and as a tool to promote the population to park visitors and area anglers. Historical fall trap netting data suggests that sampling objectives (RSE ≤ 25 for CPUE-stock, N ≥ 50 for stock-size fish) can be met with 10 randomly selected sampling sites. A minimum of 10 randomly selected trap net sites will be sampled in the fall of 2028 with up to 5

additional randomly selected stations, if needed, to meet survey objectives. If captured, a sample of 13 White Crappie will be collected for ageing near the minimum length limit (9.0 to 10.9 inches).

Channel Catfish: Channel Catfish were the third most popular species targeted during the most recent creel survey (2014–2015; 8.4% directed effort). Historically, the Channel Catfish population was sampled with gill nets alongside the White Bass and Blue Catfish population. The low density and infrequent catch rates of Blue Catfish coupled with a negligible White Bass fishery has led to the exploration of other gear types. Hoop nets were first set in 2017 and were again used in 2020 and 2025 to evaluate the fishery. This gear will continue to be used to monitor the Channel Catfish populations in Purtis Creek State Park Lake. Nine randomly selected hoop net sites will be sampled in spring 2029.

Largemouth Bass: Largemouth Bass was the most popular species targeted during the last creel survey (2014–2015; 22.7% directed effort). Purtis Creek has a history of producing trophy Largemouth Bass including the lake record, a 13.73-pound fish caught in 1995 and four TPWD Legacy ShareLunker entries (1994, 1996, 2006, 2010); however, recent fall electrofishing surveys have displayed poor abundance. While declining abundance of Largemouth Bass within fall electrofishing surveys coincided with the recent regulation change, we do not attribute this decline to increased fishing mortality as Purtis Creek State Park Lake has a history of producing variable catch rates within fall electrofishing surveys. Instead population declines are most likely caused by lack of littoral vegetation leading to decreased recruitment within the lake. Continued monitoring will occur to further evaluate the efficacy of the recent regulation change. Bass trend data on relative abundance, size structure, body condition, and growth (CPUE, PSD, W_r, age at 14 inches) will continue to be monitored with biennial nighttime electrofishing, alternating between spring bass only electrofishing (2026) and fall (2028) surveys. 12 randomly selected nighttime electrofishing stations will be conducted in spring 2026, with up to 6 additional stations to collect at least 50 stock-size fish. Twelve randomly selected stations will be conducted in fall 2028 with nighttime electrofishing, with up to 6 additional stations, if needed, to meet the sampling objectives. Otoliths will be removed from 13 specimens (13.0 – 14.9 inches) during the 2028 survey for age and growth analysis. Age and growth analysis has not occurred on Purtis Creek since 2012; therefore, additional biologist selected stations will occur, if necessary, to collect 13 specimens. Additionally, if standard fall surveys continue to produce poor catch rates, alternative sampling methods (e.g., biologist selected or spring-only surveys) will be considered to evaluate the Largemouth Bass population in Purtis Creek.

Prey Species: Gizzard Shad, Threadfin Shad, and sunfishes are all important prey species in Purtis Creek. Long term monitoring trend data is desired for these populations to evaluate their relative abundance (CPUE), size structure (PSD), and index of vulnerability (IOV). Relative weights of the Largemouth Bass population, along with size structure of the sunfish and shad communities will be used to gauge prey fish availability for sport fishes. In accordance with the Largemouth Bass sampling objectives, 12 randomly selected night-time electrofishing sites will be sampled in the fall of 2028. No additional sampling effort be expended for Bluegill, Gizzard Shad, or Threadfin Shad.

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Tables and Figures

Table 1. Characteristics of Purtis Creek State Park Lake, Texas.

Characteristic	Description
Year constructed	1985
Controlling authority	Texas Parks and Wildlife Department
County	Henderson and Van Zandt
Reservoir type	Tributary
Shoreline Development Index	3.4
Conductivity	212 µS/cm

Table 2. Boat ramp characteristics for Purtis Creek state Park Lake, Texas, August 2024. Reservoir elevation at time of survey was 315 feet above mean sea level.

Boat ramp	Latitude Longitude (dd)	Public	Parking capacity (N)	Elevation at end of boat ramp (ft)	Condition
State Park Ramp	32.35755 -95.99502	Y	21	309	Excellent, no access issues

Table 3. Harvest regulations for Purtis Creek State Park Lake, Texas.

Species	Bag limit	Length limit
Catfish: Channel and Blue Catfish, their hybrids and subspecies	25 (only 10 ≥ 20 inches)	None
Catfish, Flathead	5	18-inch minimum
Bass, White	25	10-inch minimum
Bass, Largemouth	5 (only 1 > 24 inches*)	16-Inch Maximum
Crappie: White and Black Crappie, their hybrids and subspecies	25 (in any combination)	10-inch minimum

* 1 fish over 24 inches may be retained for entry into the ShareLunker program

Table 4. Stocking history of Purtis Creek State Park Lake, Texas. Size categories are FRY= fry; FGL=fingerling; AFGL= advanced fingerling; ADL= adults

Species	Year	Number	Size
Threadfin shad	1985	1,840	ADL
	1994	500	ADL
	Total	2,340	
Blue Catfish	2000	8,906	FGL
	2003	8,746	FGL
	Total	17,652	
Channel Catfish	1985	54,140	FGL
	1986	10,080	FGL
	1987	4,400	FGL
	1989	11,230	ADL
	1990	177,503	FGL
	1991	8,875	FGL
	1992	14,650	FGL
	1993	17,882	FGL
	1994	8,876	FGL
	1995	8,170	FGL
	1995	2,703	ADL
	1996	8,850	ADL
	1998	8,973	FGL
	1999	8,870	FGL
	2001	8,875	FGL
	2002	8,875	FGL
	2005	20,824	FGL
	2006	4,604	FGL
	2009	12,288	FGL
	2009	6,187	AFGL
	2010	14,741	FGL
	2013	3,750	FGL
	2014	2,204	FGL
	2016	4,039	FGL
	2017	8,761	FGL
	2018	9,047	FGL
	2019	8,787	FGL
	2021	61	ADL
	2021	10,047	FGL
	2022	8,733	FGL
	2023	8,859	FGL
	2024	9,530	FGL
	Total	495,414	

Table 4. Stocking history continued

Species	Year	Number	Size
Bluegill	1994	2,500	FGL
Bluegill X Green Sunfish	1997	700	FGL
Coppernose Bluegill	1987	7,300	FGL
Redear Sunfish	1985	86,792	FGL
Largemouth Bass	1995	19,959	FGL
	1996	17,987	FGL
	Total	37,946	
Florida Largemouth Bass	1985	31,440	FGL
	1985	248	ADL
	2019	68,045	FRY
	Total	99,733	
ShareLunker Largemouth Bass	2006	8,734	AFGL
	2008	8,807	AFGL
	2010	3,919	AFGL
	2012	2,720	AFGL
	Total	24,180	
Grass Carp	2007	1,000	ADL

Table 5. Objective-based sampling plan components for Purtis Creek State Park Lake, Texas 2021 – 2025.

Gear/target species	Survey objective	Metrics	Sampling objective
Electrofishing			
Largemouth Bass	Relative abundance	CPUE–Stock	RSE-Stock ≤ 25
	Size structure	PSD, length frequency	N ≥ 50 stock
	Age-and-growth	Age at 14 inches	N = 13, 13.0 – 14.9 inches
	Condition	W_r	10 fish/inch group (max)
Bluegill [a]	Relative abundance	CPUE–Total	RSE ≤ 25
	Size structure	PSD, length frequency	N ≥ 50
Gizzard Shad [a]	Relative abundance	CPUE–Total	RSE ≤ 25
	Size structure	PSD, length frequency	N ≥ 50
	Prey availability	IOV	N ≥ 50
Spring electrofishing			
Largemouth Bass	Relative abundance	CPUE–stock	RSE-Stock ≤ 25
	Size structure	Length frequency	N ≥ 50 stock
Trap netting			
Crappie	Relative abundance	CPUE-stock	RSE-stock ≤ 25
	Size structure	PSD, length frequency	N = 50
	Age-and-growth	Age at 10 inches	N = 13, 9.0 – 10.9 inches
	Condition	W_r	10 fish/inch group (max)
Tandem hoop netting			
Channel Catfish	Relative abundance	CPUE–stock	RSE-Stock ≤ 25
	Size structure		N ≥ 50 stock

[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.

Table 6. Survey of aquatic vegetation, Purtis Creek State Park Lake, Texas, 2015 – 2024. Surface area (acres) is listed with percent of total reservoir surface area in parentheses.

Vegetation	2015	2016	2020	2024
Native submersed				
Pondweed		Trace	Trace	
Water stargrass			Trace	
Native floating-leaved				
American lotus		Trace	Trace	Trace
White water lilly				Trace
Native emergent				
Cattail		Trace		
Bull tongue		Trace	Trace	Trace
Water primrose		Trace	Trace	Trace
Water willow		<1 (<1)	<1 (<1)	<1 (<1)
Smartweed		<1 (<1)		
Button bush		Trace	Trace	Trace
Waterleaf			Trace	Trace
Panicum sp.		<1 (<1)		1.11 (<1)
Squarest stem rush				0.06
Non-native				
Alligator weed (Tier III)*		Trace		Trace
Hydrilla (Tier III)*	Trace	Trace		Trace

* Tier III is Watch Status

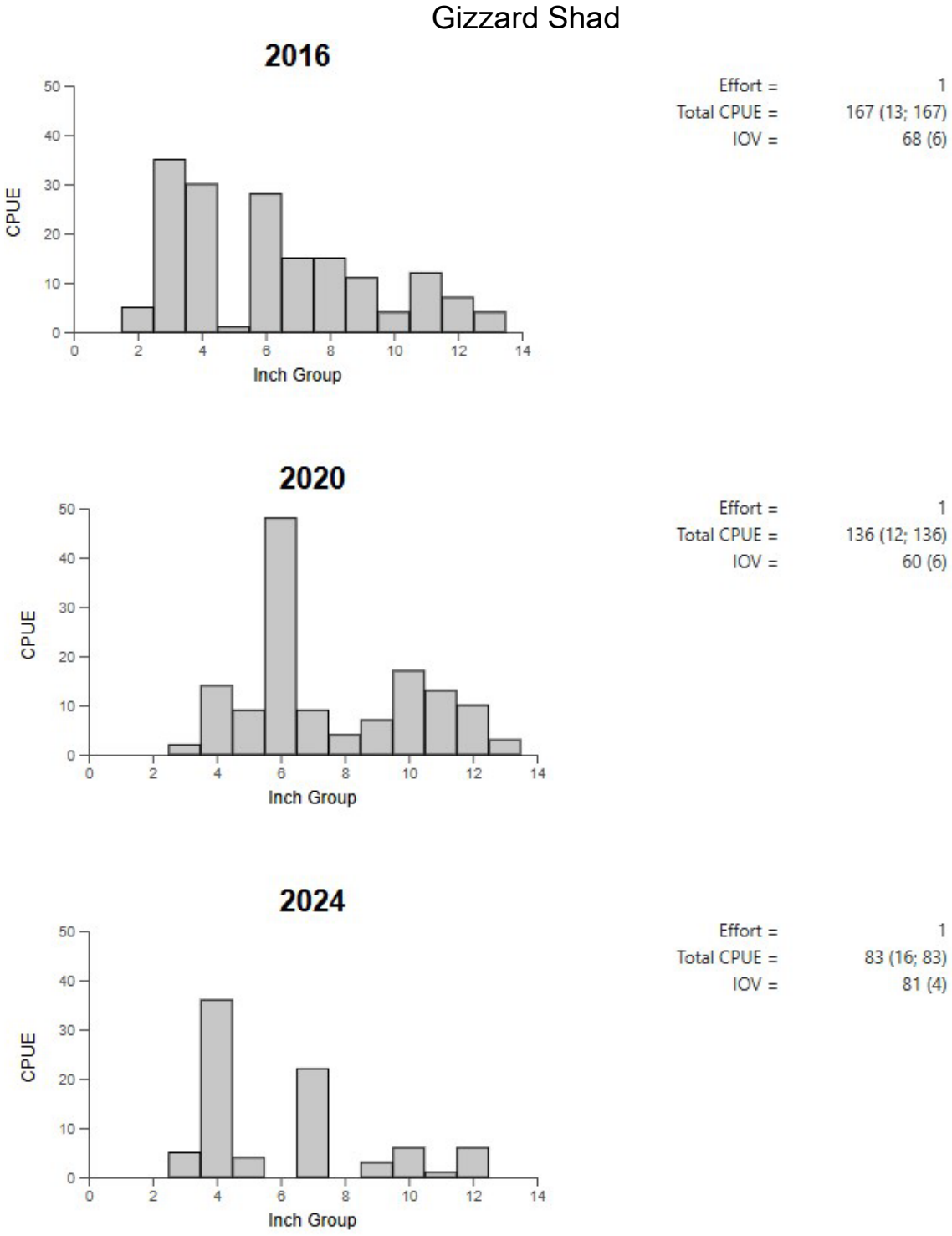


Figure 1. Number of Gizzard Shad caught per hour (CPUE) and population indices (RSE and N for CPUE and SE for IOV are in parentheses) for fall electrofishing surveys, Purtis Creek State Park Lake, Texas, 2016, 2020, and 2024.

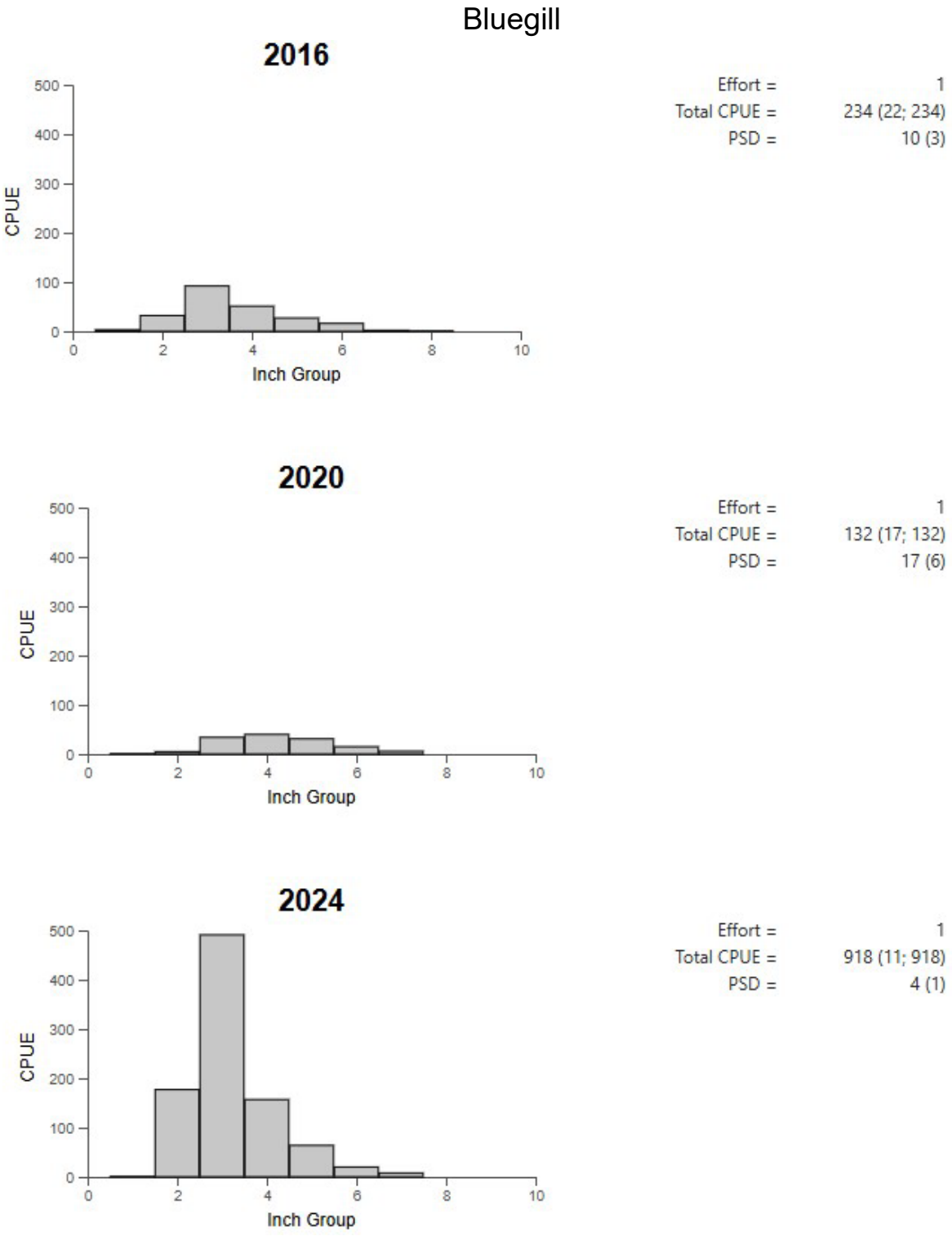


Figure 2. Number of Bluegill caught per hour (CPUE) and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for fall electrofishing surveys, Purtis Creek State Park Lake, Texas, 2016, 2020, and 2024.

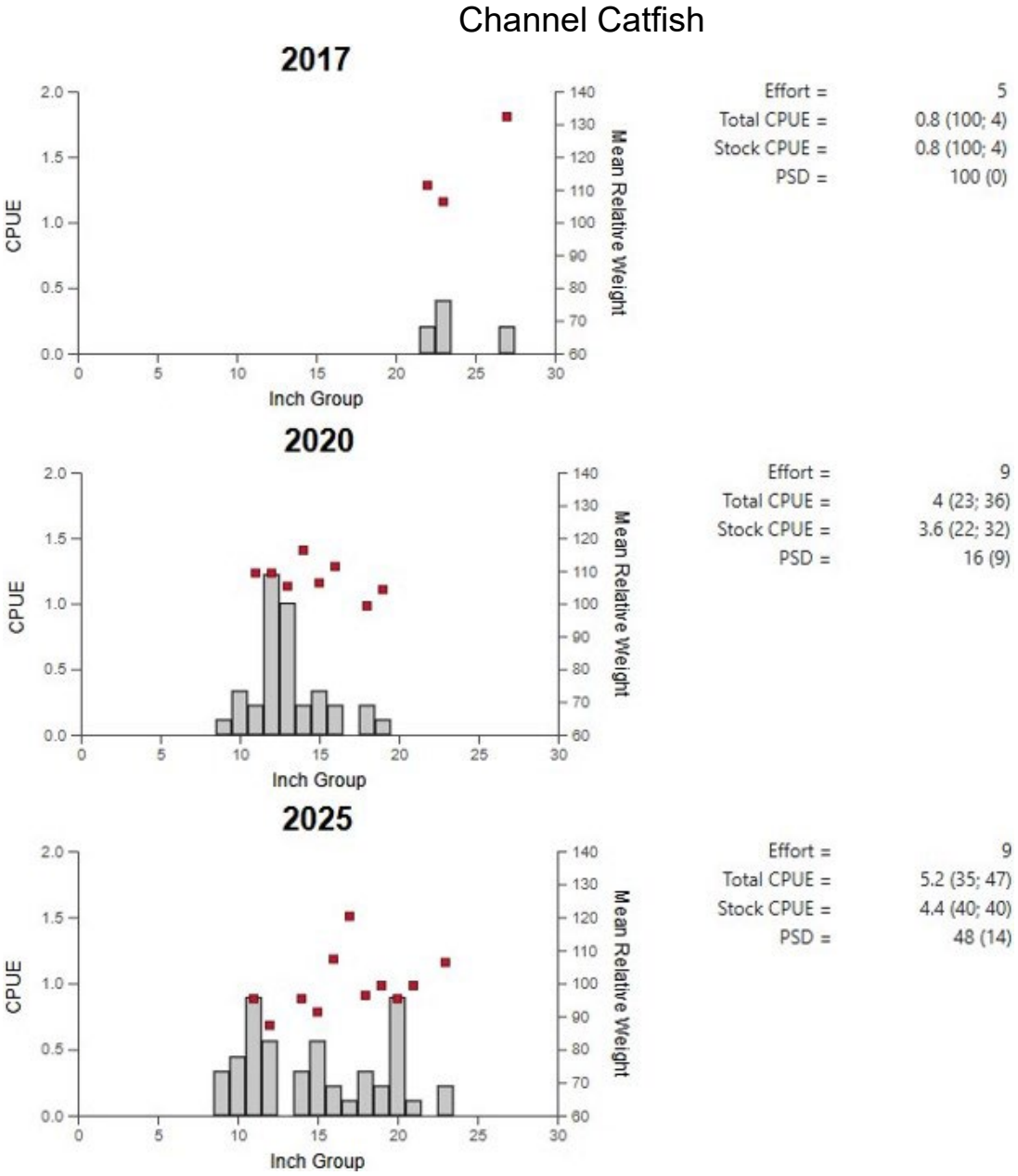


Figure 3. Number of Channel Catfish caught per hoop net series (CPUE, bars), mean relative weight (squares) and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for spring (2017, 2025) and fall (2020) hoop net surveys, Purtis Creek State Park Lake, Texas, 2017, 2020, and 2025.

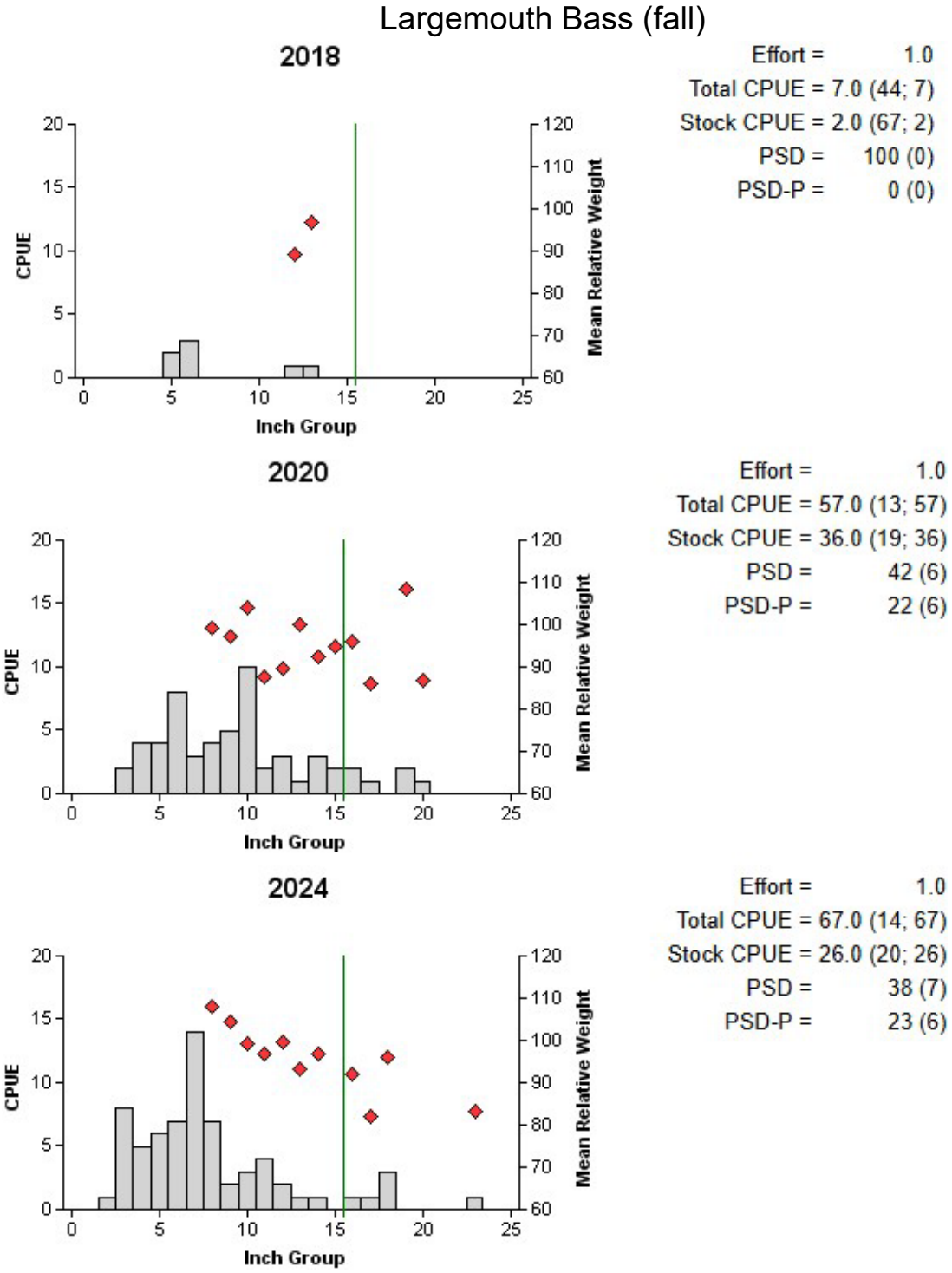


Figure 4. Number of Largemouth Bass caught per hour (CPUE, bars), mean relative weight (diamonds), maximum length limit (green line) and population indices (RSE, N for CPUE and SE for size structure are in parentheses) for fall electrofishing surveys, Purtis Creek State Park Lake, Texas, 2018, 2020, 2024.

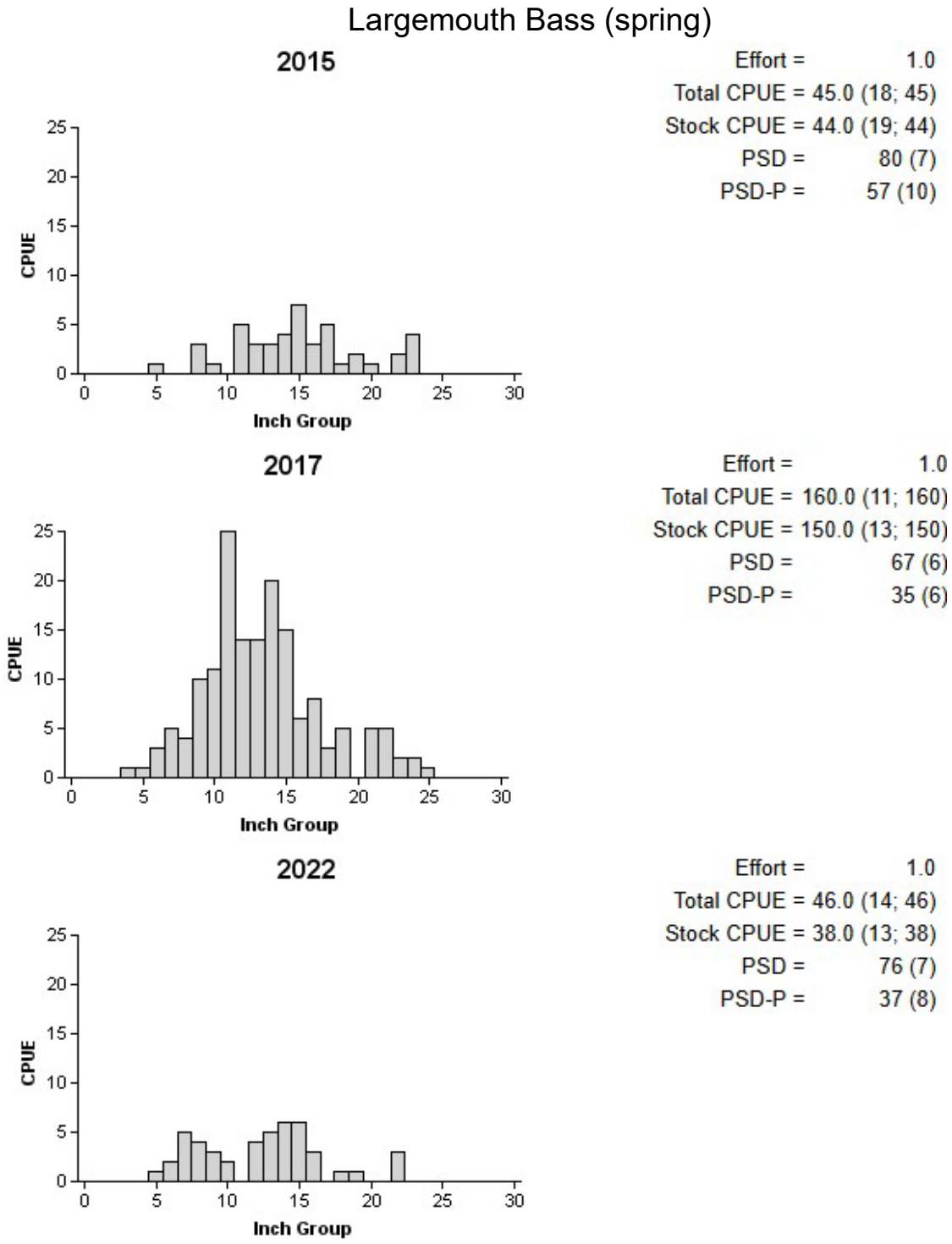


Figure 5. Number of Largemouth Bass caught per hour (CPUE, bars), and population indices (RSE, N for CPUE and SE for size structure are in parentheses) for spring electrofishing surveys, Purtis Creek State Park Lake, Texas, 2015, 2017, and 2022.

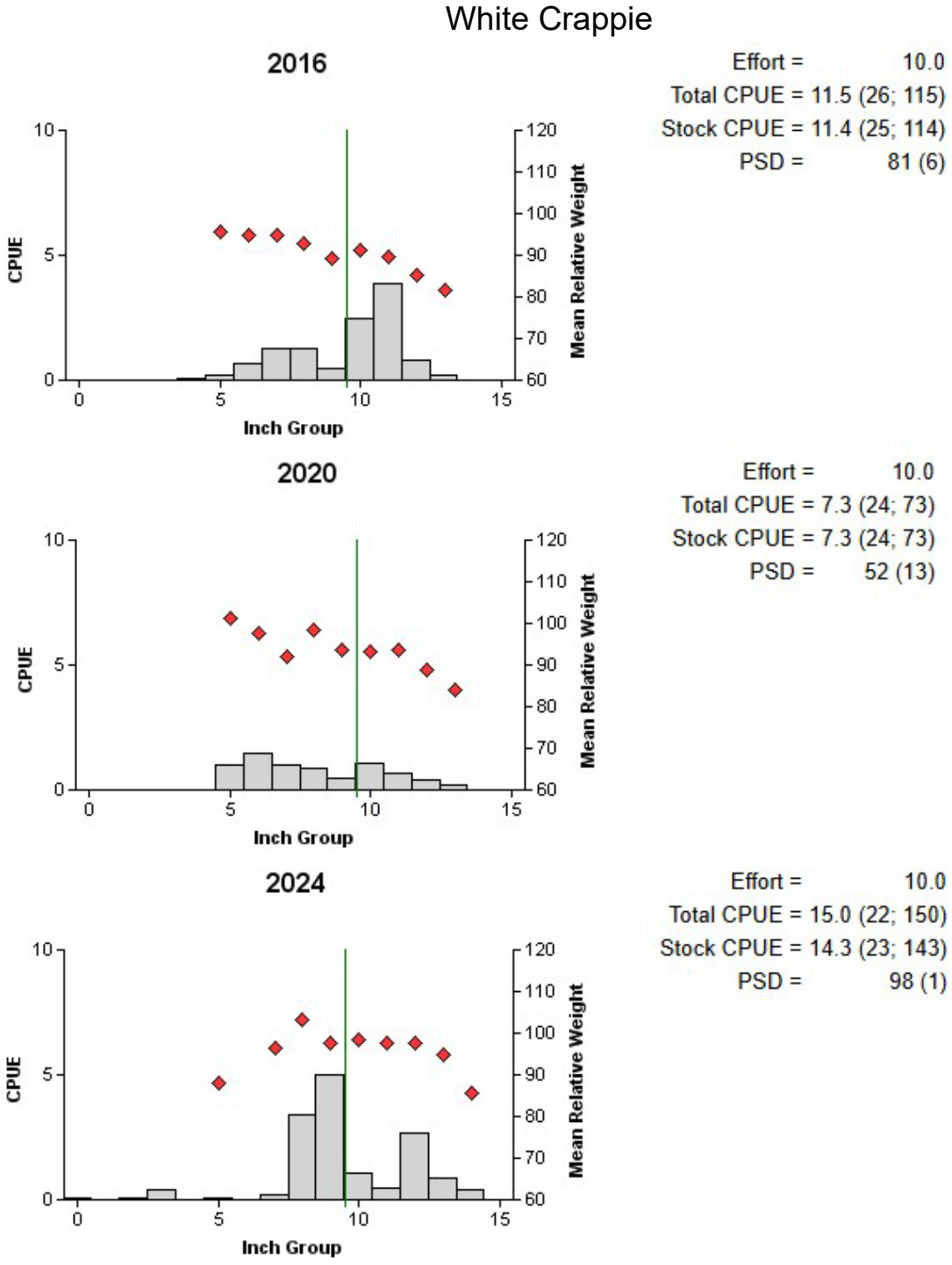


Figure 6. Number of White Crappie caught per net night (CPUE, bars), mean relative weight (diamonds), minimum length limit (green line), and population indices (RSE, N for CPUE and SE for size structure are in parentheses) for fall trap netting surveys, Purtis Creek State Park Lake, Texas, 2016, 2020, and 2024Proposed Sampling Schedule

Table 7. Proposed sampling schedule for Purtis Creek State Park Lake, Texas. Survey period is June 2025 through May 2029.

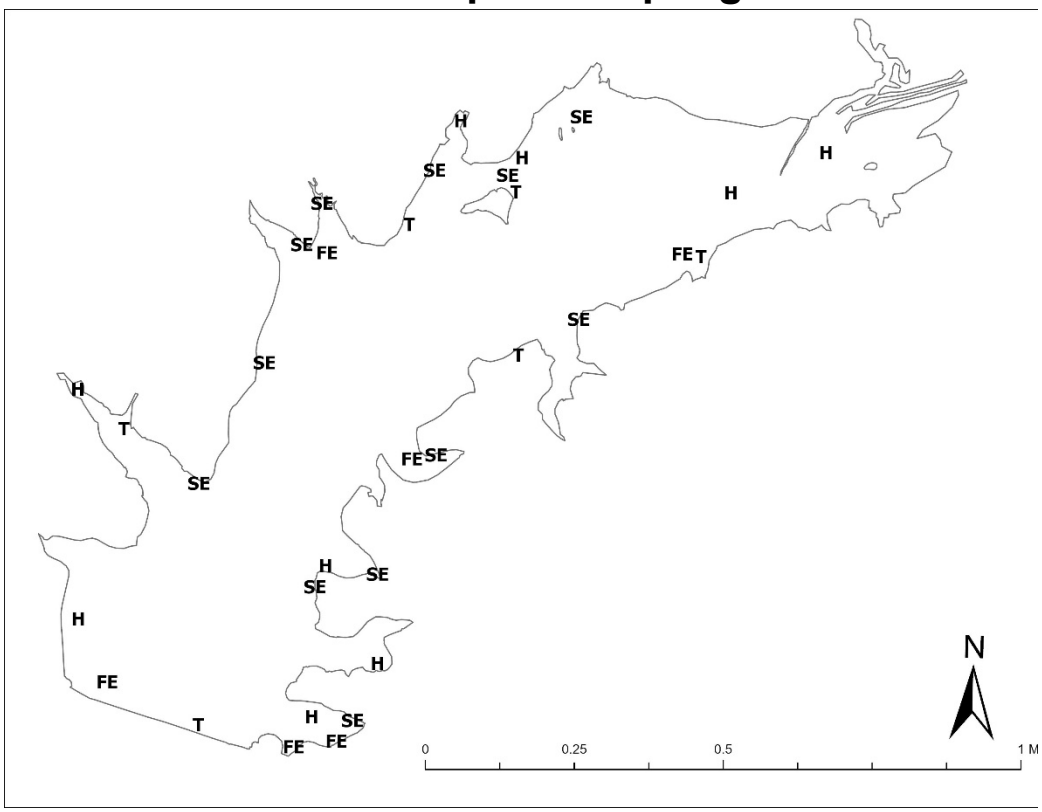
	Survey year			
	2025-2026	2026-2027	2027-2028	2028-2029
Angler Access				X
Vegetation				X
Electrofishing – Fall				X
Electrofishing – Spring	X			
Trap netting				X
Baited tandem hoop netting				X
Report				X

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 Purtis Creek State Park Lake, Texas, 2024-2025. Sampling effort was 9 net nights for hoop netting, 10 net nights for trap netting, and 1 hour for electrofishing.

Species	Hoop Netting		Trap Netting		Electrofishing (2024)	
	N	CPUE	N	CPUE	N	CPUE
Gizzard Shad					83	83 (16)
Threadfin Shad					9457	9457 (41)
Channel Catfish	47	5.22 (35)				
Redbreast Sunfish					66	66 (30)
Warmouth					8	8 (43)
Bluegill					918	918 (11)
Redear Sunfish					120	120 (17)
Largemouth Bass					67	67 (14)
White Crappie			150	15 (22)		
Black Crappie			2	0.20 (67)		

APPENDIX B – Map of sampling locations



Location of electrofishing (E), trap netting (T), and hoop netting (H) stations, Purtis Creek State Park Lake, Texas, 2022–2025. Water was near full pool at the time of sampling.

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