Pat Mayse Reservoir

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 Pat Mayse Reservoir were surveyed in 2024 using electrofishing and in 2025 using gill netting. Access and aquatic vegetation surveys were conducted in August 2024. Historical data are presented with the 2024-2025 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: Pat Mayse Reservoir is a 5,638-acre impoundment located in Lamar County, Texas, on Sanders Creek, a tributary of the Red River. It was constructed by the U.S. Army Corps of Engineers in 1967 for flood control, and as a municipal and industrial water supply. Pat Mayse was eutrophic with a mean TSI chl-a of 59.02. Aquatic vegetation coverage was less than 1% of reservoir surface area and was composed of native emergent species. Although hydrilla has been reported in the past, none was observed during the summer 2024 vegetation survey.

Management History: Important sport fish include Largemouth Bass, crappie, Channel Catfish and White Bass. Hybrid striped bass stocking was discontinued in 2000 following low observed directed angling effort in spring creel surveys from 1998 - 2000. The fisheries management plan from the 2020-2021 survey report recommended evaluating Florida Largemouth Bass stocking and monitoring the Largemouth Bass population every four years through fall electrofishing.

Fish Community

- **Prey species:** Clupeid (Threadfin and Gizzard Shad) and sunfish populations provide the major prey species for sport fish populations. The body conditions of Largemouth Bass and Channel Catfish indicated adequate availability of prey fish populations.
- **Catfishes:** Channel Catfish remained abundant in the reservoir, and numerous fish over 20-inches were collected in the 2025 gill net survey. The results of the last three surveys suggest a stable population with consistent recruitment. The relative abundance and size structure of Channel Catfish indicates the potential for a quality fishery.
- **White Bass:** White Bass populations have been subject to periodic fish kills and subsequent reductions in abundance. The 2025 gill net survey suggested White Bass continued to exist in the reservoir in low densities.
- **Black bass:** Catch rate of Largemouth Bass in the most recent sample suggests a stable population that is dominated by fish below the minimum length limit. However, growth rates were good with an average age of 1.4 years at 14 inches. Historically, Spotted Bass have been present in the reservoir, but none have been collected since 2012.
- **Crappie:** Although White Crappie and Black Crappie are present in the reservoir, no sampling was conducted for these species in 2024 due to low and variable catch rates in previous surveys.

Management Strategies: Continue biennial stocking of Lone Star Bass in 2027 and 2029, promote Channel Catfish fishery, reinitiate vegetation establishment efforts.

Introduction

This document is a summary of fisheries data collected from Pat Mayse Reservoir in 2024 and 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 species of fishes were collected, this report deals primarily with major sport fishes and important prey species. Historical data are presented with the 2024 and 2025 data for comparison.

Reservoir Description

Pat Mayse Reservoir is a 5,638-acre impoundment located in Lamar County, Texas, on Sanders Creek in the Red River basin. The reservoir is located approximately 13 miles north-northwest of Paris, Texas, and is operated and controlled by the U. S. Army Corps of Engineers (USACE). Primary water uses included flood control, municipal and industrial water supply, and recreation. Pat Mayse was eutrophic with a mean TSI chl-a of 59.02 (Texas Commission on Environmental Quality 2024). Total aquatic vegetation coverage was less than 1% of the reservoir area. Water elevation has remained within three feet of conservation pool since 2017 (Figure 1). Other descriptive characteristics for Pat Mayse Reservoir are presented in Table 1.

Angler Access

Pat Mayse Reservoir has nine boat ramps maintained by the USACE. Shoreline access is adequate within USACE recreation areas surrounding the reservoir. Access to the reservoir is good. Additional boat ramp characteristics are presented in Table 2.

Management History

Previous management strategies and actions: Management strategies and actions from the previous survey report (Dean et al. 2021) included:

1. Request stockings of FLMB (1,000/km) in 2022 and 2024.

   Action: Lone Star Bass were stocked in 2023 (N = 79,695).

2. Assess potential effects of biennial stocking via genetic sampling in 2024.

   Action: Fin clips were taken from 30 randomly selected LMB from the fall 2024 electrofishing survey and genetic composition was determined using micro-satellite DNA analysis.

3. Determine if continued stocking of FLMB fingerlings is justified using habitat, vegetation, and size structure data collected during the next report cycle (2024/2025).

   Action: TPWD Wildlife staff and USACE staff present at the reservoir were contacted prior to stocking in 2025 to determine the amount of littoral habitat present

4. Promote Channel Catfish fishery through news releases, social media, and communication with local angling groups.

   Action: Local (e.g., Tyler, Nacogdoches) outdoor writers were contacted about the quality channel catfish present in the reservoir, however, there was not enough traction to prioritize the story.

5. Develop partnership with USACE to implement a habitat enhancement project using artificial and natural habitat structures and establish trial colonies of American waterwillow.

Action: Initiated plan to fell trees on the bank into the water, however the plan was abandoned as USACE placed many conditions on the project that made the effort negligible.

Harvest regulation history: All sport fishes in Pat Mayse Reservoir have been managed with statewide harvest regulations (Table 3).

Stocking history: Florida Largemouth Bass (FLMB) were introduced in 1981 and periodically stocked between 1983 to 2020. Lone Star Bass were stocked in 2023. Channel Catfish were introduced in 1967 and have developed a quality self-sustaining fishery. Stocking of Palmetto Bass was conducted periodically from 1973 to 1986, and annually from 1991 to 2000. Stocking of Palmetto Bass was discontinued after 2000 due to low directed fishing pressure. A complete stocking history is found in Table 4.

Vegetation/habitat management history: Although hydrilla has been documented in Pat Mayse Reservoir, it has not been observed during vegetation surveys since 2000. It has never negatively impacted boat and angler access or reached nuisance levels. Historical vegetation surveys indicate a low abundance of vegetation dominated by native emergent species.

Water transfer: Currently no interbasin transfers exist.

Methods

Surveys were conducted to achieve survey and sampling objectives in accordance with the objective-based sampling (OBS) plan for Pat Mayse Reservoir (Dean et al. 2021). Primary components of the OBS plan are listed in Table 5. All survey sites were randomly selected, and all surveys were conducted per the Fishery Assessment Procedures (TPWD, Inland Fisheries Division, unpublished manual revised 2022).

Common names of fishes and their hybrids in this report are used following Page et al. (2023) with an exception for Largemouth Bass. While we recognize recent changes to black bass names, Texas reservoirs contain a mix of Florida Bass, Largemouth Bass, and their intergrade offspring. Therefore, Largemouth Bass is used in this report for simplicity as well as consistency with previous reports.

Electrofishing – Largemouth Bass, sunfishes, Gizzard Shad, and Threadfin Shad were collected by electrofishing in fall 2024 (1.5 h at 18, 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. Age at harvest length for Largemouth Bass were determined using otoliths from 13 randomly selected fish (range 13.1 to 14.9 inches). Electrofishing in 2024 was conducted using a Smith-Root Apex electrofisher, while electrofishing in 2022 and previous surveys used a GPP 5.0 electrofisher.

Gill netting – Channel Catfish and White Bass were collected by gill netting (10 net nights at 10 stations). CPUE for gill netting was recorded as the number of fish caught per net night (fish/nn). Average age at 12 inches was determined for Channel Catfish using otoliths from 13 randomly selected fish (range 11.1 to 12.4 inches).

Genetics – Genetic analysis of Largemouth Bass was conducted according to the Fishery Assessment Procedures (TPWD, Inland Fisheries Division, unpublished manual revised 2022). Micro-satellite DNA analysis was used to determine genetic composition of individual fish since 2005.

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 (Wr)] were calculated for target fishes according to Neumann et al. (2012). 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 CPUEs.

Habitat – An aquatic vegetation survey was performed in 2024 per the Fishery Assessment Procedures (TPWD, Inland Fisheries Division, unpublished manual revised 2022). Shoreline distances and areas of vegetation were estimated using ESRI ArcGIS Pro software.

Water level – Source for water elevation data was the USACE Tulsa District Water Control Home Page website (USACE 2025).

Results and Discussion

Habitat: Vegetation has historically been composed of emergent vegetation including buttonbush and giant cut grass; fluctuating water levels have prevented consistent growth of submersed species. Total vegetation coverage during the 2024 survey was less than 1% of reservoir surface area (Table 6). The minimal vegetation coverage was influenced by the water level being one foot below conservation pool at the time of the survey, thus reducing habitat in the water. Aquatic vegetation consisted of the following emergent species; American lotus, button bush, giant bulrush, giant cut grass, water-willow, and swamp hibiscus. Submersed species have not been documented in any vegetation surveys conducted after the lake elevation dropped in 2013 – 2014 (Storey and Cartabiano 2017). The last structural survey was conducted in 2012 and indicated that 97% of shoreline habitat was natural (Bennett and Storey 2013). No residential development or large-scale shoreline modification projects have occurred since the last

structural survey; so we believe the previous survey results are still adequate to describe current conditions.

Prey species: Primary prey species included Gizzard Shad, Threadfin Shad, and Bluegill. Electrofishing CPUE of Gizzard Shad in 2024 (434/h) was considerably higher than 2020 (92.7/h) and 2016 (216.7/h). Gizzard Shad availability as prey (IOV) was higher in 2024 (83) compared to 2020 (49) but similar to 2016 (89; Figure 2). Bluegill electrofishing CPUE in 2024 (65.3/hr) was lower than the two previous surveys in 2020 (334/h) and 2016 (195.3/hr; Figure 3). Average relative weights of most size classes of game fishes exceeded 90, indicating an ample supply of prey fish in Pat Mayse Reservoir.

Catfish: Channel Catfish relative abundance in Pat Mayse remained stable over the last three gill net surveys (7.3nn, 9.7/nn and 9.8/nn in 2016, 2021, and 2025 respectively; Figure 4). The Channel Catfish population was dominated by harvestable-size fish and several fish over 20 inches were collected. Growth was adequate; average age at 12 inches (11.2 to 12.4 inches inches) was 1.8 years (N = 9; range = 1-2 years). The consistent quality Channel Catfish data suggests potential for quality fishing opportunities in the reservoir.

White Bass: White Bass CPUE from gill netting in 2025 (1.30/nn) was lower than 2021 (5.0/nn) and 2017 (1.8/nn; Figure 5). It is likely that the White Bass population will continue to fluctuate in relation to reservoir elevation, precipitation, and inflow during the spawning season.

Black bass: Electrofishing CPUE of Largemouth Bass in 2024(125.3/h) was higher than 2020 (72.7/h) and 2016 (107.3/h) and was dominated by fish less than the legal minimum length (14 inches; Figure 6). The most recent survey indicated a strong year class from 2024, the abundance of fish less than legal length resulted in a decreased estimate of size distribution (PSD=19). The reservoir experienced high water in the spring of 2024, resulting in abundant flooded littoral habitat, which likely contributed to the strong year class. Growth was desirable; average age at 14 inches (13.2 to 14.8 inches) was 1.4 years (N = 13; range = 1 - 2 years). Genetic analysis indicated an increasing percentage of Florida Largemouth Bass alleles in the population (44%), with a majority of the individuals being intergrades, sharing genetics of both Florida and Northern Largemouth Bass. 1 pure FLMB and only 7 Northern Largemouth Bass have been collected in all surveys combined. Since 2008, the mean percentage of Florida Largemouth Bass alleles (%FLMB) has been low, averaging 35.5% (range: 30–44%) (Table 7). However, the %FLMB has increased in the two most recent analyses, indicating genetic enhancement due to stocking. Desirable growth, improving genetics, and strong recent year classes suggest a promising Largemouth Bass fishery. Spotted Bass were not observed in 2024 although they have been collected in previous surveys at low abundances (Bennett and Storey 2013).

Crappie: White and Black Crappie have been present in Pat Mayse Reservoir and anecdotal reports suggest a crappie fishery still exists. Plans from the 2021 OBS plan called for a baited tandem hoop net survey in the spring of 2023 as an alternative method to sample crappies. Due to variable results on previous trap net crappie surveys and limited knowledge on the gear’s size selectivity, the survey was not conducted.

Fisheries Management Plan for Pat Mayse Reservoir, Texas

Prepared – July 2025

ISSUE 1: Reports from USACE staff suggest Pat Mayse Reservoir supports a popular Largemouth Bass fishery and is a venue for numerous fishing tournaments; fish over 8 pounds are frequently weighed in. The most recent ShareLunker was caught in September of 2024 and weighed 8.43 pounds. An increase in FLMB allele frequency was documented in 2016 and attributed to stocking FLMB fingerlings in 2011. The trophy potential documented in anecdotal reports and tournament results coupled with the recent increase in FLMB allele frequency suggest that Pat Mayse Reservoir would likely benefit from continued stocking efforts.

MANAGEMENT STRATEGY

1. Continue biennial stocking requests of Lone Star Bass (1,000/km) in 2027 and 2029.
2. Assess potential effects of biennial stocking via genetic sampling in 2032.
3. Determine if continued stocking of Lone Star Bass fingerlings is justified using habitat, vegetation, and size structure data collected during the next report cycle (2028/2029).

ISSUE 2: The Channel Catfish population at Pat Mayse Reservoir exhibits good natural recruitment and is characteristic of a minimally exploited population. However, anecdotal reports from anglers and USACE staff indicated a low amount of effort directed toward Channel Catfish. This fishery could benefit from additional promotion.

MANAGEMENT STRATEGIES

1. Promote the Channel Catfish fishery through news releases, social media, and communication with local angling groups.

ISSUE 3: Aquatic vegetation in Pat Mayse Reservoir is limited (<1% reservoir surface area) and is dominated by giant cutgrass and other native emergent species. Vegetation is limited to narrow shoreline bands which are subjected to fluctuations in reservoir elevation. Additionally, reservoir ageing has diminished available structural habitat throughout the reservoir. Natural recruitment of multiple sportfish species and angler success would benefit from improved littoral habitat.

MANAGEMENT STRATEGIES

1. Attempt to establish trial colonies of American waterwillow by distributing cut waterwillow stalks near protected shorelines. If efforts to establish colonies are successful, additional sites will be selected in subsequent years.

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 reservoir's access points.
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 using media and the internet.
4. Make a speaking point about invasive species when presenting to constituent and user groups. 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 (2025-2029)

Sport fish, forage fish and other important fishes

Sport fishes in Pat Mayse Reservoir include Largemouth Bass, White Bass, Channel Catfish, and crappies. Shads and sunfishes are the primary prey species for sport fishes.

Low-density fisheries

Spotted Bass: Spotted Bass are present in low abundance in Pat Mayse Reservoir. CPUE from electrofishing surveys in 2000, and 2012 were 2.0/h, and 4.7/h respectively. No fish were collected in surveys in 2002, 2004, 2008, 2016, 2020, and 2024. Anecdotal information suggests this species is caught primarily in the lower section of the reservoir and they are periodically included in tournament weigh-ins. This species does not provide a significant fishery but any fish observed in future standard electrofishing surveys will be measured and recorded.

Survey objectives, fisheries metrics and sampling objectives

Crappie: Both White and Black Crappie are present in Pat Mayse Reservoir, although White Crappie are usually more abundant. Results from historical (1998, 1999) spring creel surveys indicated that Crappie were the most targeted sportfish among anglers (35% of total effort). Trap net catch rates produced inconsistent results and were discontinued after 2008. Baited tandem hoop nets have periodically proven to effectively survey crappie populations. A cursory survey of 10 tandem hoop net series at 10 stations will be conducted in the spring of 2028 to evaluate the gears effectiveness on Pat Mayse Reservoir; no sampling objectives will be set for the survey. Attempts will also be made to monitor Channel Catfish with hoop nets from the 2028 survey

Largemouth Bass: Pat Mayse Reservoir supports a low to moderately abundant Largemouth Bass population managed using a 14-inch minimum-length limit. Sampling will monitor relative abundance, size structure and body condition (measured by CPUE, PSD, and W_r) every four years. These data will allow for determination of any large-scale changes in the Largemouth Bass population. A minimum effort of 18 randomly selected nighttime electrofishing stations will be sampled in fall 2028 (Table 7). An additional six random stations will also be generated in the event additional sampling is required to meet sampling objectives (RSE-S <25 and 50 stock-length fish) for Largemouth Bass. Otoliths will be removed from 13 specimens (13.0 to 14.9 inches) to calculate average age at the legal minimum length. Genetic sampling to assess trend data in FLMB allele frequencies will be conducted on an 4-year rotation with the next survey occurring in 2028.

Channel Catfish: Gill net CPUE of Channel Catfish from surveys conducted in 2003 to 2025 ranged from 3.1/nn to 9.8/nn. Historical gill netting data suggests that sampling objectives (RSE-S ≤ 25, N > 50) can be met with 10 randomly selected sampling sites. However, following the survey plan described for crappie, attempts will be made to monitor Channel Catfish with hoop net surveys, instead of gill netting. If the 2028 hoop net survey produces poor results, gill netting will be conducted in 2029. Sampling will monitor relative abundance, size structure and body condition (measured by CPUE, PSD, and W_r) every four years. Otoliths from 13 specimens (11.0 - 12.9 inches) will be collected in 2028 (or 2029 if necessary) to determine mean age at legal harvest length.

White Bass: Gill net CPUE of White Bass from 2003 to 2025 have varied significantly. This population has a documented history of periodic fish kills, explaining some of the variability in catch rates. No sampling objectives will be set for White Bass due to variability in historic catch rates, however large-scale changes in relative abundance (CPUE) and size structure (PSD) will be monitored in accordance with the Channel Catfish sampling effort of 10 nets, if conducted.

Prey species: Gizzard Shad, Bluegill, and Threadfin Shad are the primary prey species in Pat Mayse Reservoir. Long-term monitoring trend data is desired for these populations to evaluate their relative abundance (CPUE) and size structure (PSD; IOV). Relative weights of the Largemouth Bass population, along with relative abundance (CPUE) of other sunfish, Gizzard Shad, and Threadfin Shad, will also be used to gauge prey fish availability for sport fishes. No additional sampling effort beyond that needed to obtain sampling objectives for Largemouth Bass will be expended for prey species.

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Tables and Figures

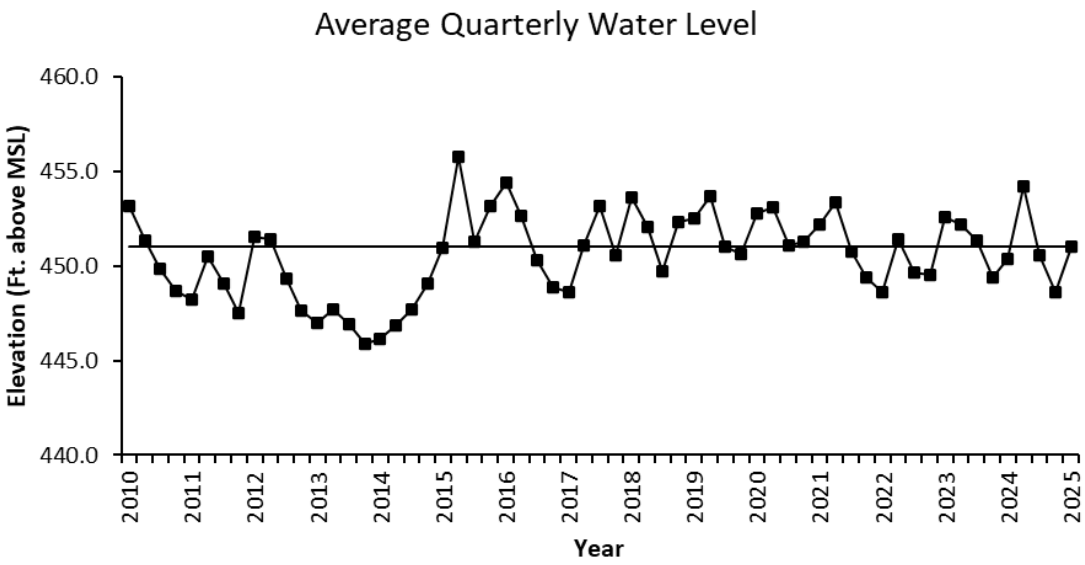


Figure 1. Average quarterly reservoir elevations in feet above mean sea level (ft. msl) recorded for Pat Mayse Reservoir, Texas. Horizontal line represents conservation pool (451.0 ft msl).

Table 1. Characteristics of Pat Mayse Reservoir, Texas.

Characteristic	Description
Year constructed	1967
Controlling authority	U.S. Army Corps of Engineers
County	Lamar
Reservoir type	Tributary
Shoreline Development Index	1.9
Conductivity	280 µS/cm

Table 2. Boat ramp characteristics for Pat Mayse Reservoir, Texas, August 2020. Reservoir elevation at time of survey was at conservation pool.

Boat ramp	Latitude Longitude (dd)	Public	Parking capacity (N)	Elevation at end of boat ramp (ft. msl)	Condition
CR 34950	33.836445 -95.545683	Y	Campers only	446. 5	No public parking area
Lamar Point	33.827800 -95.628676	Y	24	447.0	No access issues
PM East Recreation Area Loop B-A	33.840081 -95.592307	Y	10	446.5	No access issues
PM East Recreation Area East Park Rd.	33.838110 -95.583670	Y	17	444.5	No access issues
PM West Recreation Loop A	33.841614 -95.609577	Y	15	444.0	Access to camping area, Fishing pier close to ramp
PM West Recreation Loop Calle	33.840855 -95.600375	Y	Campers only	446.5	No public parking area
Red Bluff	33.817027 -95.650853	Y	12	444.5	Unpaved surface on access road and parking area
Sanders Cove A	33.844271 -95.542731	Y	38	445.5	Courtesy docks on either side of ramp. No access issues
Sanders Cove B	33.841093 -95.542240	Y	14	445.5	Courtesy dock next to ramp. No access issues

Table 3. Harvest regulations for Pat Mayse Reservoir, Texas.

Species	Bag limit	Length limit
Catfish: Channel and Blue Catfish, their hybrids and subspecies	25 [a]	None
Catfish, Flathead	5	18-inch minimum
Bass, White	25	10-inch minimum
Bass, Largemouth	5[b]	14-inch minimum
Bass, Spotted	5[b]	None
Crappie: White and Black crappie, their hybrids and subspecies	25 (in any combination)	10-inch minimum

[a] Only 10 combined Blue and Channel Catfish ≥ 20 inches may be retained per day.

[b] Daily bag for Largemouth Bass and Spotted Bass = 5 fish in any combination.

Table 4. Stocking history of Pat Mayse Reservoir, Texas. FGL = fingerling; ADL = adults.

Year	Number	Size	Year	Number	Size
	Threadfin Shad			Largemouth Bass	
1986	1,000	ADL	1967	505,000	FGL
	1,000		1968	901,000	FGL
				1,406,000	
	Channel Catfish				
1967	162,400	FGL		Florida Largemouth Bass	
	162,400		1981	7,980	FGL
			1983	289,375	FGL
	Palmetto Bass		1991	289,390	FGL
1973	46,303	FGL	1994	301,790	FGL
1974	60,000	FGL	2003	298,658	FGL
1975	59,773	FGL	2004	147,910	FGL
1976	60,000	FGL	2011	298,130	FGL
1979	30,000	FGL	2018	76,258	FGL
1982	63,000	FGL	2020	70,075	FGL
1986	89,495	FGL		1,789,566	
1991	95,000	FGL			
1992	98,700	FGL		Lone Star Bass	
1993	49,284	FGL	2023	79,695	FGL
1994	89,758	FGL		79,695	
1995	121,525	FGL			
1996	42,801	FGL			
1997	42,175	FGL			
1998	42,200	FGL			
1999	21,084	FGL			
2000	42,027	FGL			
	1,053,125				

Table 5. Objective-based sampling plan components for Pat Mayse Reservoir, Texas 2024–2025.

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)
	Genetics	% FLMB	N = 30, any age
Bluegill [a]	Relative Abundance	CPUE–Total	
	Size structure	PSD, length frequency	N ≥ 50
Gizzard Shad [a]	Relative Abundance	CPUE–Total	
	Prey availability	IOV	N ≥ 50
Gill netting			
Channel Catfish	Relative Abundance	CPUE–Stock	RSE-Stock ≤ 25
	Size structure	PSD, length frequency	N ≥ 50 stock
	Age-and-growth	Age at 12 inches	N = 13, 11.0 – 12.9 inches
White Bass	Relative Abundance	CPUE–Stock	
	Size structure	PSD, length frequency	

[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, Pat Mayse Reservoir, Texas, 2012, 2016, 2020, and 2024. Surface area (acres) is listed with percent of total reservoir surface area in parentheses. Water elevation at the time of the survey in August 2024 was 0.91 feet below conservation pool. Individual species observed during surveys are listed in footnotes.

Vegetation	2012	2016	2020	2024
Emergent	38.0 (0.70)	33.7 (0.6)	11.38 (0.2)[1]	Trace[2]
Submersed	187.3 (3.5)	0 (0)	0 (0)	0 (0)
Total	225.3 (4.2)	33.7 (0.6)	11.38 (0.2)	Trace

1 Buttonbush, giant bulrush, giant cut grass, waterwillow, slender spike rush
[2]American lotus, buttonbush, bullwhip, giant cut grass, swamp hibiscus, waterwillow

Gizzard Shad

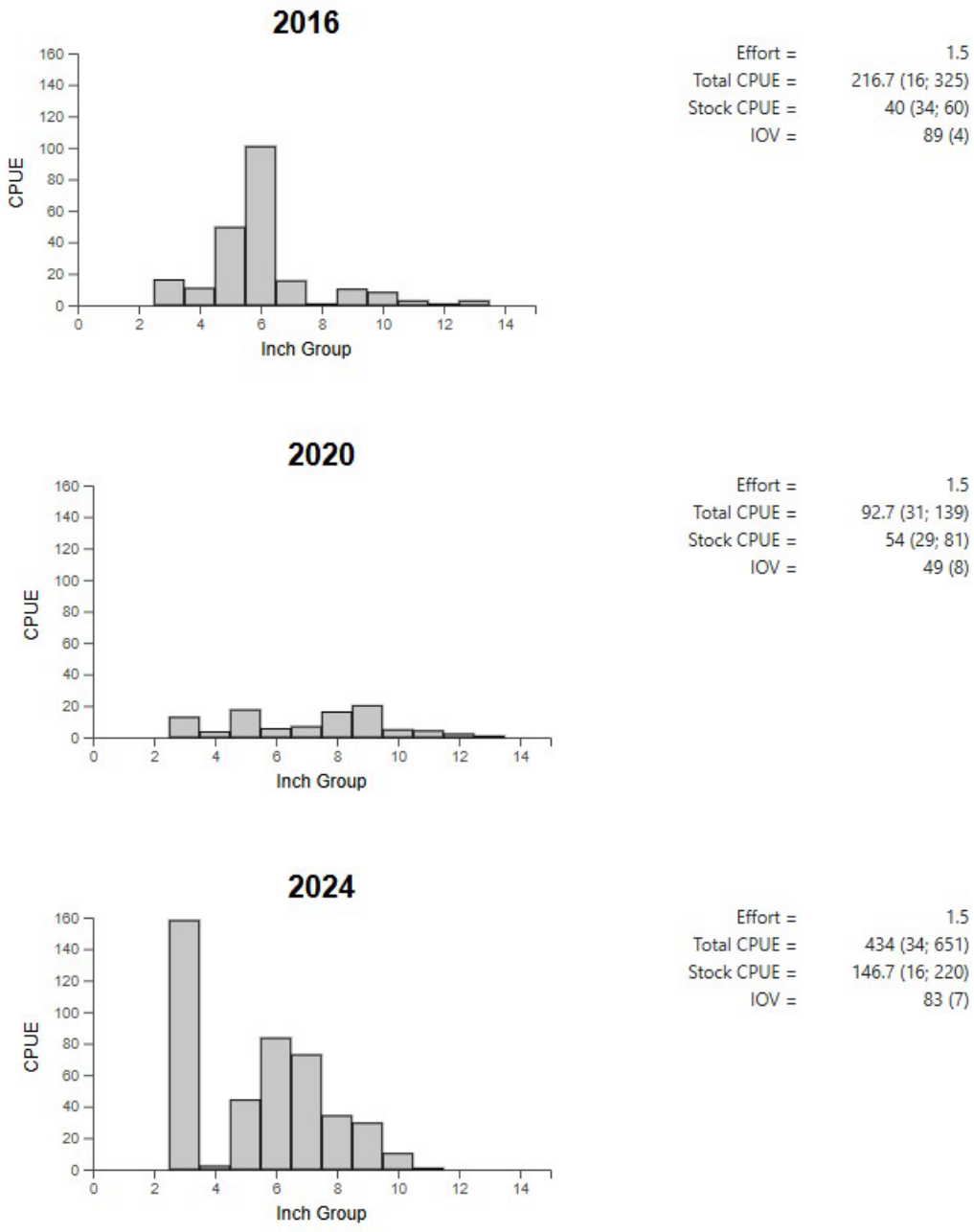


Figure 2. Number of Gizzard Shad caught per hour (CPUE) and population indices (RSE and N for CPUE and SE for IOV are in parentheses) for fall electrofishing surveys, Pat Mayse Reservoir, Texas, 2016, 2020, and 2024.

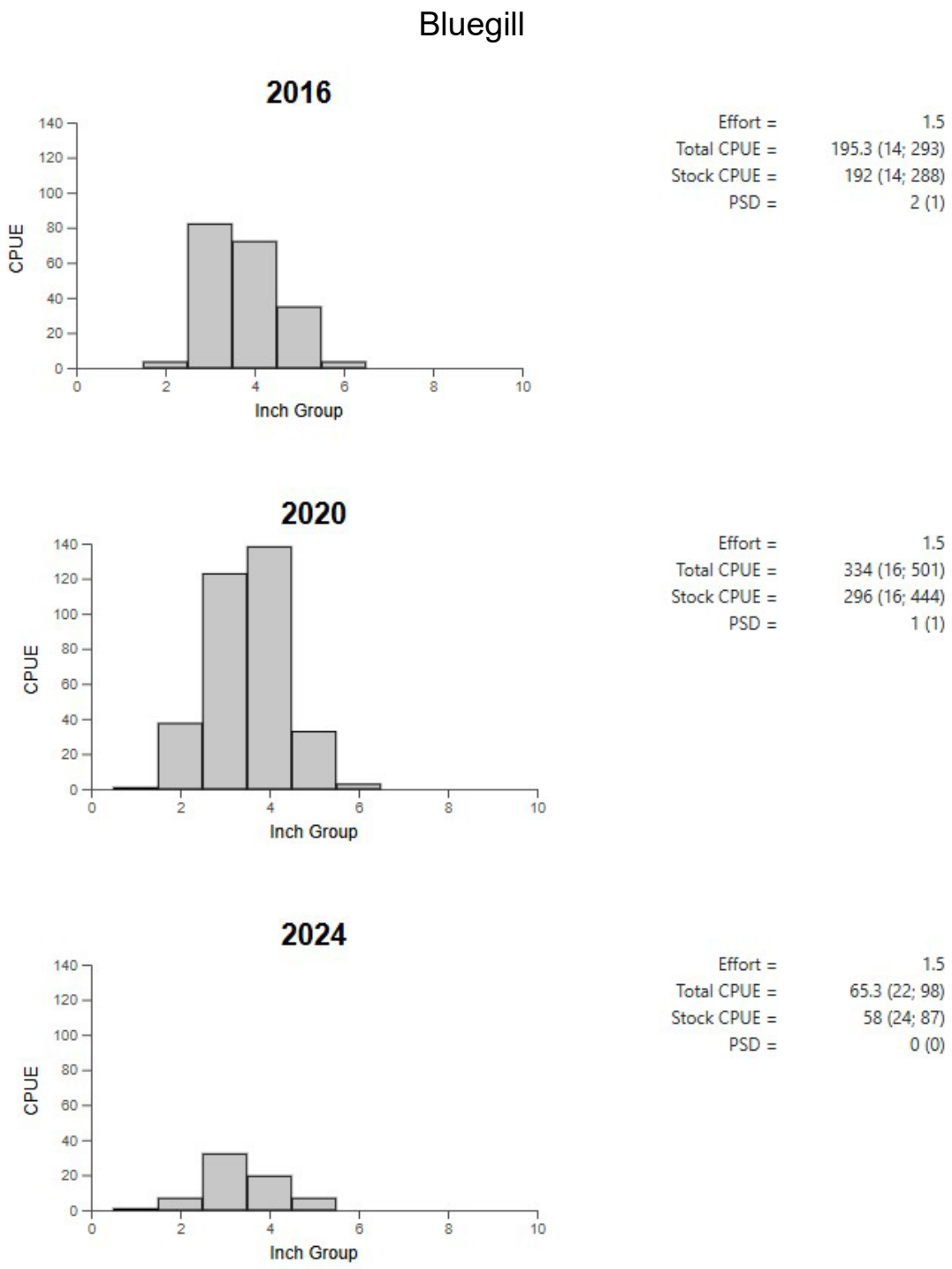


Figure 3. Number of Bluegill caught per hour (CPUE, bars) and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for fall electrofishing surveys, Pat Mayse Reservoir, Texas, 2016, 2020, and 2024.

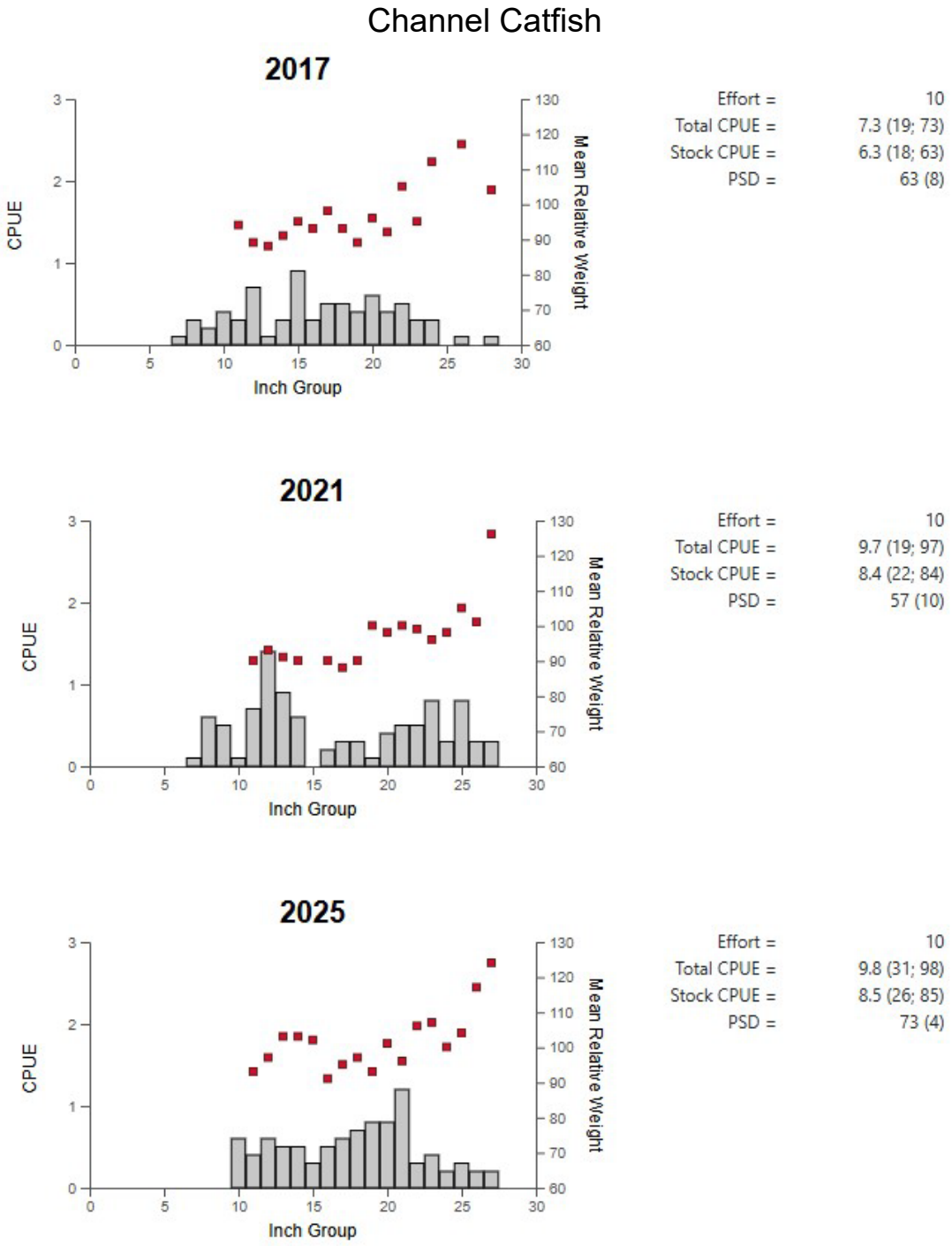


Figure 4. Number of Channel Catfish caught per net night (CPUE, bars), mean relative weight (squares), and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for spring gill net surveys, Pat Mayse Reservoir, Texas, 2017, 2021, and 2025.

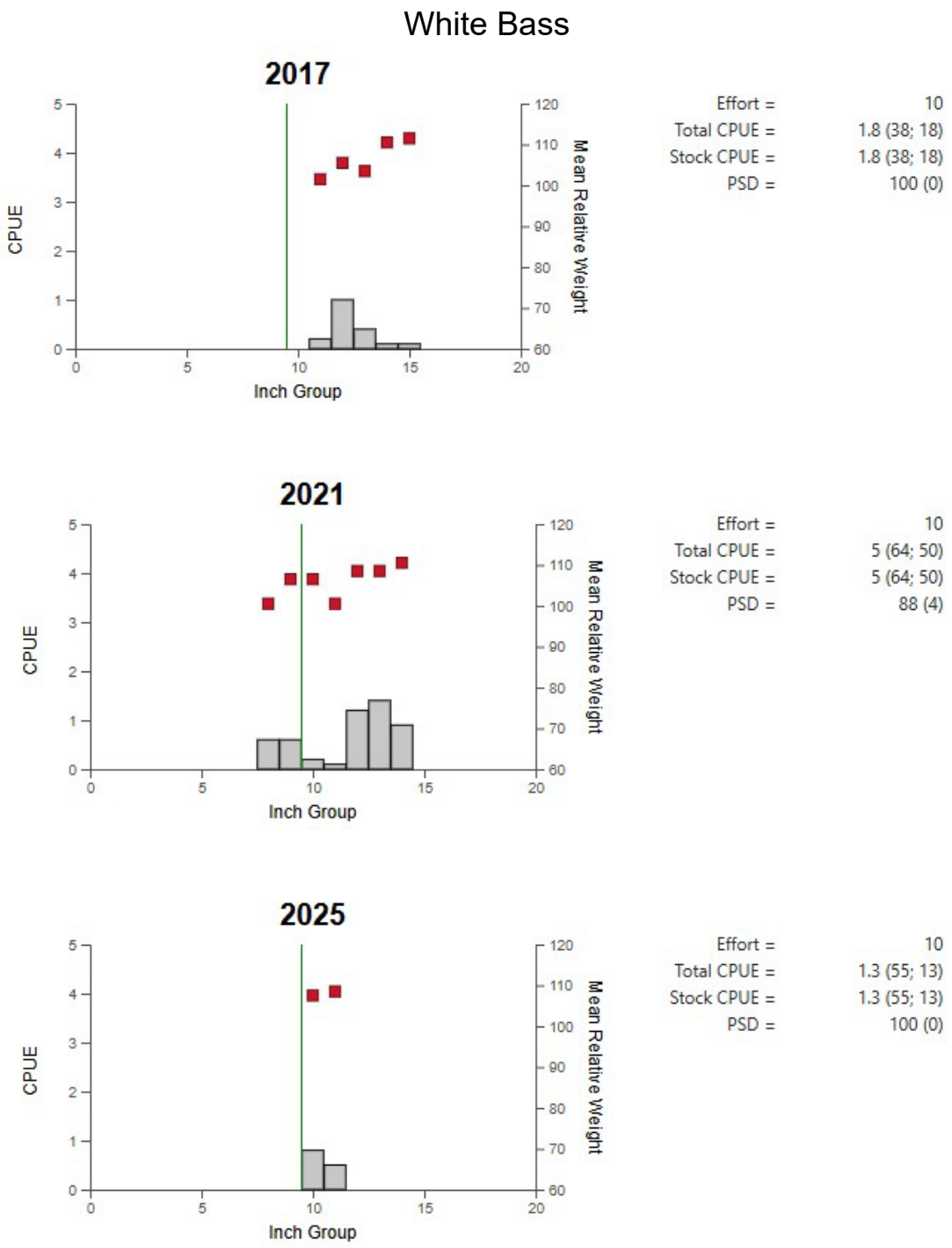


Figure 5. Number of White Bass caught per net night (CPUE, bars), mean relative weight (squares), and population indices (RSE and N are in parentheses) for spring gill net surveys, Pat Mayse Reservoir, Texas, 2017, 2021, and 2025. Vertical lines indicate a minimum length limit at time of survey.

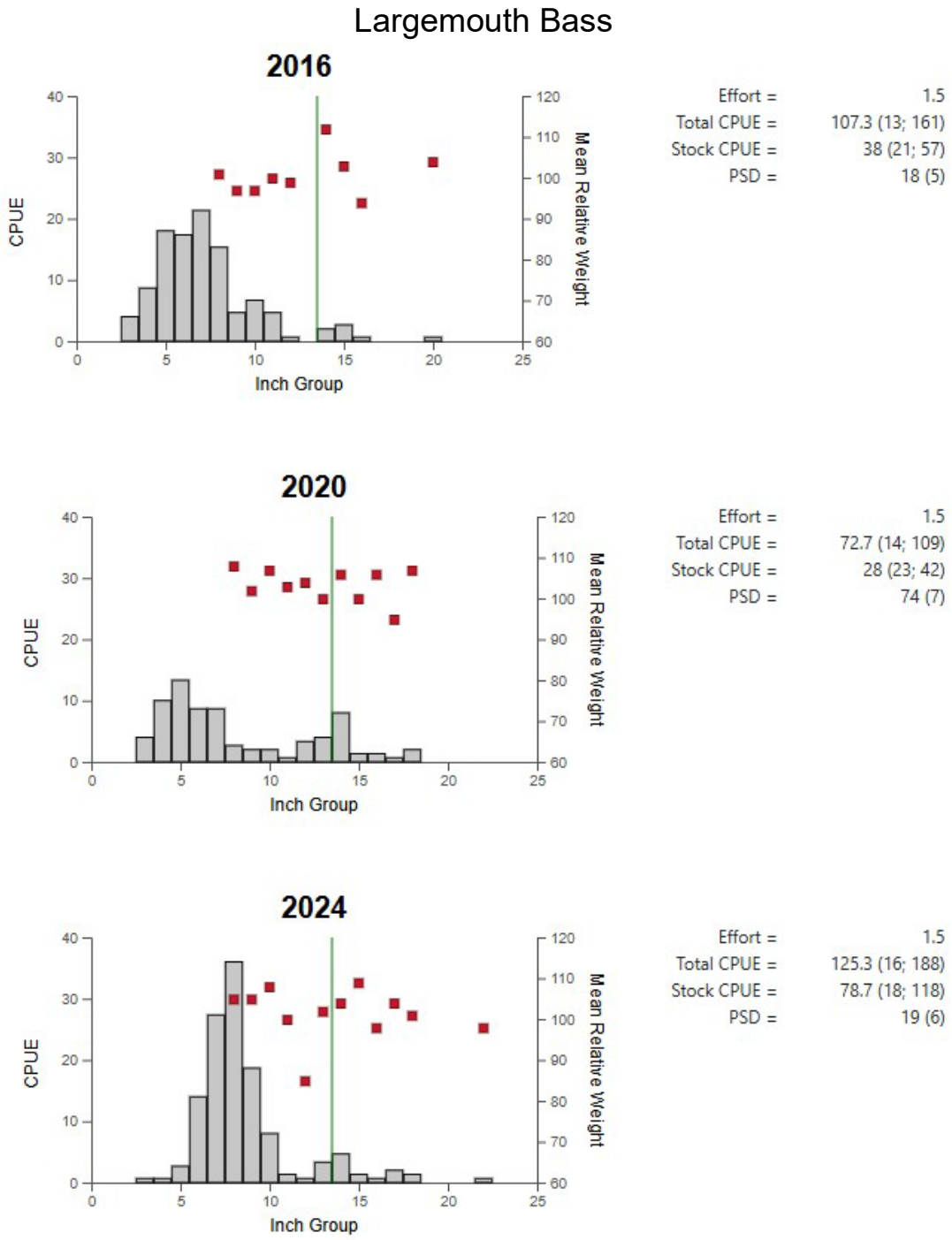


Figure 6. Number of Largemouth Bass caught per hour (CPUE, bars), mean relative weight (squares), and population indices (RSE and N for CPUE and SE are in parentheses) for fall electrofishing surveys, Pat Mayse Reservoir, Texas, 2016, 2020, and 2024. Vertical lines indicate a minimum length limit at time of survey.

Table 7. Results of genetic analysis of Largemouth Bass collected by fall electrofishing, Pat Mayse Reservoir, Texas, 2008, 2012, 2016, and 2024. FLMB = Florida Largemouth Bass, NLMB = Northern Largemouth Bass, Intergrade = hybrid between a FLMB and a NLMB. Genetic composition was determined by electrophoresis prior to 2005 and with micro-satellite DNA analysis since 2005.

	Number of fish					
Year	Sample size	FLMB	Intergrade	NLMB	% FLMB alleles	% FLMB
2008	30	0	27	3	30	0
2012	29	0	28	1	30	0
2016	30	0	28	2	38	0
2024	29	1	27	1	44	3

Proposed Sampling Schedule

Table 8. Proposed sampling schedule for Pat Mayse Reservoir, Texas. Survey period is June through May. Gill netting and tandem hoop netting surveys are conducted in the spring, while electrofishing surveys are conducted in the fall.

	Survey year			
	2025-2026	2026-2027	2027-2028	2028-2029
Angler access				X
Vegetation				X
Electrofishing – Fall				X
LMB Genetics				X
Hoop Netting			X	
Gill Netting*				X
Report				X

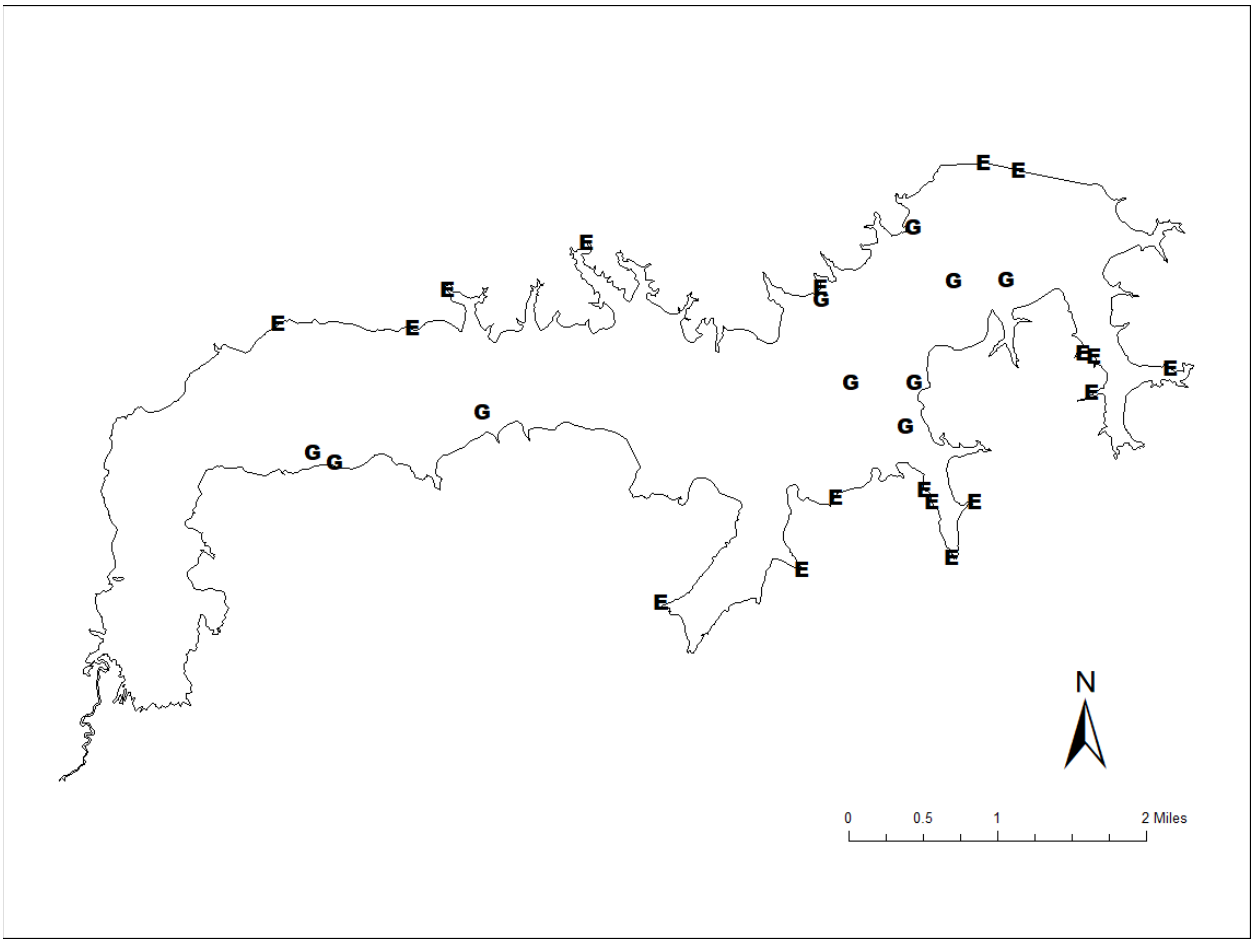
* Only conducted if 2028 hoop net survey does not effectively sample Channel Catfish

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 by fall electrofishing, and spring gill netting from Pat Mayse Reservoir, Texas, 2024-2025. Sampling effort was 1.5 hours for electrofishing and 10 net nights for gill netting.

	Electrofishing		Gill Netting	
Species	N	CPUE	N	CPUE
Gizzard Shad	651	434 (34)		
Threadfin Shad	12,594	8,396 (56)		
Channel Catfish			98	9.8 (31)
White Bass			13	1.3 (55)
Bluegill	98	65.33 (22)		
Longear Sunfish	8	5.33 (37)		
Redear sunfish	14	9.33 (42)		
Largemouth Bass	188	125.33 (16)		

APPENDIX B – Map of sampling locations



Location of electrofishing (E) and gill netting (G) sites, Pat Mayse Reservoir, Texas, 2024-2025. Water level was near full pool at time of sampling.

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