

Stamford 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

Prepared by:

Michael D. Homer Jr., District Management Supervisor

Inland Fisheries Division
Abilene District, Abilene, Texas



David Yoskowitz, PhD.
Executive Director

Timothy Birdsong
Director, Inland Fisheries

July 31, 2023



Contents

Survey and Management Summary	1
Introduction	2
Reservoir Description	2
Angler Access	2
Management History	2
Methods	3
Fisheries Management Plan for Stamford Reservoir, Texas	5
Objective-based Sampling Plan and Schedule (2023-2027)	6
Literature Cited	8
Tables and Figures	9
Water Level	9
Reservoir Characteristics	9
Boat Ramp Characteristics	10
Harvest Regulations	10
Stocking History	11
Objective-based Sampling Plan, 2019–2023	12
Gizzard Shad	13
Bluegill	14
Blue Catfish	15
Largemouth Bass	16
White Crappie	18
Proposed Sampling Schedule	19
Appendix A. Catch of All Species for All Gear Types	20
Appendix B. Map of Survey Stations	21
Appendix C. Map of 2022 Vegetation Survey	22

Survey and Management Summary

Fish populations in Stamford Reservoir were surveyed in fall 2022 by nighttime electrofishing and trap netting. This report summarizes the results of the surveys and contains a management plan for the reservoir based on those findings.

Reservoir Description: Stamford Reservoir is a 5,124-acre impoundment of Paint Creek, a tributary of the Clear Fork of the Brazos River Basin approximately 10 miles southeast of Haskell, TX. The reservoir is used for municipal and industrial water supply for the City of Stamford, flood control, and recreation. Carlson's Trophic Index classification for the reservoir is 63.9 (TCEQ 2022). In fall 2018, heavy rainfall flooded the reservoir to about 5 ft. above conservation pool elevation after having been about 5 ft. low prior. By spring 2019, the water level was about 2 ft. over conservation pool and continued to fluctuate between 2 ft. over and 2 ft. below conservation pool elevation until spring 2021. Since spring 2021, the reservoir's water level has been declining, and as of May 2023 was about 4 ft. below conservation pool habitat primarily consisted of featureless shoreline, rocks, bulrush, flooded terrestrial vegetation, and flooded timber.

Management History: Sport fish include Largemouth Bass, White Crappie, Blue Catfish, Channel Catfish, Flathead Catfish, and White Bass. All species have been managed with the statewide fishing regulations. Golden alga is found in the reservoir and caused the first documented toxic bloom in March 2015 which resulted in a moderate lake-wide fish kill. In 2016, Blue Catfish were stocked to restore the fishery. In 2015-2017, and in 2019, stockings of Florida Largemouth Bass fingerlings were conducted to support the fishery.

Fish Community

- **Prey species:** Gizzard Shad, Bluegill, Longear Sunfish, and Inland Silversides were the predominant prey species. Sizes and relative abundance of prey species observed were optimal for sport fishes.
- **Catfishes:** Blue and Channel Catfish were present in the fall 2022 electrofishing survey but were not enumerated. Blue Catfish had low relative abundance in the spring 2023 low-frequency electrofishing and the sample was represented by mostly smaller fish.
- **Largemouth Bass:** Largemouth Bass catches were low in the fall 2020 and 2022 electrofishing surveys. Only 8 fish were able to be retained for age and growth; ages ranged from 2-5 years old.
- **White Crappie:** White Crappie catch rates fluctuated since the last monitoring cycle, but catch was higher in the most recent survey. Most fish caught in the surveys were consistently sub-stock length, indicative of adequate reproduction. Body conditions of White Crappie were optimal.

Management Strategies: Prey species and Largemouth Bass will be sampled by standard electrofishing in fall 2024 and 2026. White Crappie will be monitored by trap netting during fall 2026. Low frequency electrofishing will be conducted during spring 2027. Blue Catfish fingerlings will be requested for supplemental stockings to boost recruitment. City of Stamford will be contacted about the deteriorating boat ramps. Golden alga samples and toxicity analyses will be conducted during the cold seasons.

Introduction

This document is a summary of fisheries data collected from Stamford Reservoir during 2019-2023. 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 was collected, this report deals primarily with major sport fishes and important prey species. Management strategies are included to address existing problems and/or opportunities. Historical data are presented with the 2019-2023 data for comparison.

Reservoir Description

Stamford Reservoir is a 5,124-acre impoundment of Paint Creek, a tributary of the Clear Fork of the Brazos River Basin approximately 10 miles southeast of Haskell, TX. The reservoir is used for municipal and industrial water supply for the City of Stamford; it is also used for flood control and recreation. Stamford Reservoir is subject to substantial water level fluctuations (Figure 1). Carlson's Trophic Index classification is 63.9 (TCEQ 2022). In fall 2018, heavy rainfall flooded the reservoir to about 5 ft. above conservation pool elevation after having been about 5 ft. low prior. By spring 2019, water level was about 2 ft. over conservation pool and continued to fluctuate between 2 ft. over and 2 ft. below conservation pool elevation until spring 2021. Since spring 2021, the reservoir's water level has been declining, and as of May 2023, was about 4 ft. below conservation pool elevation. Other descriptive characteristics for Stamford Reservoir are in Table 1.

Angler Access

Boater access consisted of two public boat ramp locations. Anchor Marina Ramp is located on the north side of the reservoir off Farm-to-Market Rd 3495 and Anchor Lane. The second boat ramp is located at Stamford Marina on the southern side of the reservoir off FM 2976 and Stamford Marina Drive. Bank and handicapped access were restricted to the areas around the boat ramps. Additional boat ramp characteristics are in Table 2.

Management History

Previous management strategies and actions: Management strategies and actions from the previous survey report (Homer and Goldstrohm 2019) included:

1. Stock Blue Catfish in 2020 and Florida Largemouth Bass fingerlings in 2021.

Action: Blue Catfish and Lonestar Largemouth Bass were stocked during spring 2023.

2. Speak with the City of Stamford about potential boat ramp improvements at Stamford Marina and explore the availability of funding to support the ramp improvement efforts.

Action: The City of Stamford was contacted multiple times about the deteriorating conditions of the boat ramp and dock, and improvement needs were discussed. However, there are no immediate plans by the City of Stamford to address the improvement needs. Communication efforts by the TPWD Inland Fisheries will be continued.

3. Conduct monitoring of golden alga presence, cell densities, and toxicity by conducting winter-season water samples as well as monitor water quality conditions.

Action: Golden alga samples were collected, and toxicity and cell counts were monitored monthly during November-March, 2019-2023.

4. Inform City of Stamford about the salt cedar establishment and discuss possible measures of control.

Action: City of Stamford was notified of salt cedar presence at Stamford Reservoir. Management actions have not been taken to control salt cedar at the reservoir.

5. Communicate and educate the public of the risks of invasive species by posting signage at access points, providing visual aids and literature to marinas and business owners, and provide educational information by use of media.

Action: Signs displaying Clean, Drain, and Dry rules were posted at each of the public boat ramps, and informational pamphlets were provided to the Anchor and Stamford marinas. Multiple interviews to local news stations were given to discuss invasive species threats, and multiple popular press articles were written as well.

Harvest regulation history: Sport fish in Stamford Reservoir have been managed with statewide harvest regulations (Table 3). In September 2021, the statewide Blue and Channel Catfish harvest regulations were changed to a no minimum length limit with a 25 fish daily bag limit and no more than 10 fish ≥ 20 inches daily.

Stocking history: While Stamford Reservoir has been stocked with a variety of species since its impoundment, Florida Largemouth Bass have been the most frequently stocked. However, in late-winter 2015, a moderately toxic golden alga bloom caused a lake-wide kill that devastated Stamford Reservoir's fisheries. Once the reservoir caught substantial water from late spring rains, a series of recovery stockings of Florida Largemouth Bass (2015-2017 and in 2019) and Blue Catfish (2016) were conducted. A supplemental stocking of Channel Catfish fingerlings was last conducted in June 2019. A complete stocking history is presented in Table 4.

Vegetation/habitat management history: In 2017, TPWD Inland Fisheries collaborated with Still Waters Bass Club to conduct a Christmas tree brush pile project to enhance structural habitat in the reservoir.

Water transfer: No interbasin transfers are known to exist.

Methods

Surveys were conducted to achieve survey and sampling objectives in accordance with the objective-based sampling (OBS) plan for Stamford Reservoir (Homer and Goldstrohm 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, sunfishes, Threadfin Shad and Gizzard Shad were collected by nighttime electrofishing (1.0 hour at 12, 5-min stations) during fall 2020 and 2022. Catch per unit effort (CPUE) for electrofishing was recorded as the number of fish caught per hour (fish/h) of electrofishing. During the 2022 survey, 8 fish from 13.0-14.9 inches were retained to estimate length at age.

Low-frequency electrofishing – Blue Catfish were collected by daytime low-frequency electrofishing (1.0 hour at 20, 3-min stations). Catch per unit effort was recorded as the number of fish caught per hour (fish/h) of electrofishing.

Trap netting – Crappie were collected by using trap nets (10 net nights at 10 stations) during fall 2022. Catch rate (i.e., CPUE) for trap netting was recorded as the number of fish caught per net night (fish/nn).

Genetics – Genetic analysis of Largemouth Bass was conducted according to the Fishery Assessment Procedures (TPWD, Inland Fisheries Division, unpublished manual revised 2022). Electrophoresis was used to determine genetic composition of individual fish. A sample of 28 fish were retained for evaluating prevalence of Florida Largemouth Bass and Northern Largemouth Bass alleles.

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.

Habitat – In summer 2022, vegetation and habitat were surveyed by the Digital Shapefile Method (TPWD, Inland Fisheries Division, unpublished manual revised 2022).

Results and Discussion

Habitat: Habitat in Stamford Reservoir was mostly represented by areas of featureless shoreline, docks, and areas of rocky shoreline. Aquatic vegetation present was approximately 430 acres of bulrush and sparse coverage of American lotus (see Appendix C).

Prey Species: In 2022, Gizzard Shad and Bluegill dominated the sample of prey species. Other prey observed included Warmouth, Green Sunfish, Longear Sunfish, Redbreast Sunfish, and Orangespotted Sunfish. Inland Silversides and some minnow species were also numerous, but they could not be effectively sampled with the standardized gear. Gizzard Shad total catch rates fluctuated from 452.6/h in 2018 to 815.0/h in 2020 to 344.0/h in 2022; similar fluctuations of Stock CPUE were also observed (Figure 2). The IOVs for Gizzard Shad remained high (Range: 96-99) from 2018 to 2023 and indicated that the samples size distribution was favorable for providing adequate prey availability for sport fish. Bluegill catch rates fluctuated from 27.4/h in 2018 to 71.0/h in 2020 to 46.0/h in 2022 (Figure 3). During the survey period, OBS target for sample size of Bluegill of ≥ 50 stock length fish was not achieved to reliably estimate PSD in 2022. Despite the low sample sizes, prey sizes in the samples were optimal (i.e., <7 inches).

Catfishes: Blue Catfish and Channel Catfish were present in the 2020 and 2022 fall electrofishing surveys. Blue catfish were caught at a rate of 62.0/h in the spring 2023 low frequency electrofishing survey (Figure 4). The sample did not have enough individuals of stock length fish per inch groups to evaluate relative weights reliably. The sample was dominated by smaller fish (Range: 4-19 inches).

Largemouth Bass: Largemouth Bass catch rates were low, and they fluctuated from 17.1/h in 2018 to 9.0/h in 2020 to 28.0 in 2022 (Figure 5). From 2018-2022, Stock CPUE increased from 8.6/h in 2018 to 25.0/h in 2022. The catch rate of legal fish increased from 1.7/h in 2018 to 4.0/h in 2020 to 13.0/h in 2022. Fish in these samples were mostly sub-stock length ranging from 3-7 inches. The desired sample of fish \geq Stock length was not achieved to reliably evaluate PSD and W_r . In 2022, the target sample of 13 legal length fish (13.0-14.9 inches) for age estimation was not achieved and only 8 fish were retained. In the 2022 survey, the desired sample of 30 fish for determining Florida Largemouth Bass allele frequency was not fully achieved but 28 individuals were assessed. Despite the low sample size in 2022, 7 of the 28 fish were determined as pure Florida Largemouth Bass and the remaining individuals were intergrade Largemouth Bass (Table 6). The percentage of Florida Largemouth Bass alleles in the 2022 sample was 70%.

White Crappie: White Crappie total catch rates fluctuated from 18.2/nn in 2018 to 5.6/nn in 2020 to 17.0/nn in 2022 (Figure 6). The Stock CPUE fluctuated from 9.8/nn in 2018 to 5.1/nn in 2020 to 11.4/nn in 2022. Catch rate of legal White Crappie increased from 1.9/nn in 2018 to 6.6/nn in 2022. The size structure also had increased representation of quality fish as PSDs increased from 30 in 2018 to 73 by 2022. Sizes of White Crappie in 2022 ranged from 3-13 inches, and mean relative weights were fair to optimal, and were highest for legal fish.

Fisheries Management Plan for Stamford Reservoir, Texas

Prepared – July 2023

ISSUE 1: Largemouth Bass, Blue Catfish, and Channel Catfish are popular among anglers at Stamford Reservoir. Recruitment of both species has been poor. Periodic stockings of Largemouth Bass and Blue Catfish fingerlings may be necessary to help boost recruitment for these populations.

MANAGEMENT STRATEGIES

1. If water level is over 65% capacity and golden alga has not produced toxicity, stock Lonestar Largemouth Bass at a rate of 1,000/shoreline km in 2024 and 2026.
2. If Water level is at least over 65% capacity and golden alga has not produced toxicity, stock Blue and Channel Catfish fingerlings at 100/acre during the monitoring period.

ISSUE 2: Stamford Reservoir has areas with ample vegetation when water level is high. However, the reservoir has limited structural fish habitat, and much of it is unavailable once water level drops about 4-5 ft. from conservation pool elevation. A habitat enhancement project to increase structural habitat may allow for better fish survival and fishing quality.

MANAGEMENT STRATEGY

1. Speak with City of Stamford and other potential partners about potential fisheries habitat improvement opportunities at Stamford Reservoir.

ISSUE 3: The boat ramp and dock at Stamford Marina are in poor condition and need to be repaired.

MANAGEMENT STRATEGY

1. Continue discussions with City of Stamford about the poor condition of the Stamford Marina boat ramp and its dock as well as possible strategies to address the issues such as a Boater Access Grant.

ISSUE 4: Golden alga is established in the reservoir, and it poses a threat to existing fisheries.

MANAGEMENT STRATEGY

1. Golden alga cell counts and toxicity will be monitored monthly during the cold season (November-March) annually.

ISSUE 5: Invasive species threaten aquatic habitats and organisms in Texas and can adversely affect the state ecologically, environmentally, and economically. For example, zebra mussels (*Dreissena polymorpha*) can multiply rapidly and attach themselves to any available hard structure, restricting water flow in pipes, fouling swimming beaches, and plugging engine cooling systems. Giant salvinia (*Salvinia molesta*) and other invasive vegetation species can form dense mats, interfering with recreational activities like fishing, boating, skiing, and swimming. The financial costs of controlling and/or eradicating these types of invasive species are significant. Additionally, the potential for invasive species to spread to other river drainages and reservoirs via watercraft and other means is a serious threat to all public waters of the state.

MANAGEMENT STRATEGIES

1. Cooperate with the controlling authority to post appropriate signage at access points around the reservoir.
2. Contact and educate owners at Anchor and Stamford marinas 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 by using 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: Sport fishes in Stamford Reservoir include Channel Catfish, Blue Catfish, Largemouth Bass, and White Crappie. Known important forage species include Gizzard Shad and sunfishes, particularly Bluegill and Longear Sunfish, as well as Inland Silversides. The reservoir was devastated by prolonged drought from 2012-2015 and a moderate lake-wide golden alga kill in March 2015. Many popular sport fish populations in the reservoir endured substantial losses in abundance following these events. Since the reservoir refilled from heavy rainfall during 2015-2016 and following post flooding events in 2019 and 2021, fish populations have been recovering.

Low-Density Fisheries: Flathead Catfish are present in the reservoir, and they have been managed with the statewide harvest regulations. However, Flathead Catfish are thought to support a small component of the catfish fishery. White Bass are present in the reservoir, and they are managed with the statewide harvest regulations. Traditional monitoring efforts for White Bass have been by gill netting with effort of five net nights. While the reservoir has previously produced adequate catches of White Bass in monitoring surveys, the population anecdotally supports a minor fishery. Monitoring for White Bass and other low-density species will be conducted while monitoring for other sport fishes and prey species. Relative abundance, PSD, and body conditions will be evaluated if sampling sizes are adequate but will not have target levels of precision. Historical monitoring for Channel Catfish has been achieved with spring gill netting surveys as well as tandem hoop netting surveys. Low catch in these monitoring surveys was expected given the severity of the golden alga kill. Stockings of Channel Catfish were last stocked in 2019. Channel Catfish will be requested for upcoming stocking plans to boost their recruitment.

Survey objectives, fisheries metrics, and sampling objectives

Prey species: Gizzard Shad and Bluegill comprise most of the prey community in Stamford Reservoir. Prey species will be monitored by nighttime electrofishing conducted during fall 2024 and fall 2026. Sampling will occur at 12 randomly selected 5-minute stations for a duration of 1.0 h. Total catch-per-unit-effort (CPUE) will be determined for prey with no target precision. A sample of ≥ 50 Gizzard Shad will be attempted for evaluating size structure and determining Index of Vulnerability. At least 50 Bluegill \geq stock-length will be attempted to evaluate size structure as Proportional Size Distribution (PSD). If sampling objectives are not achieved, no additional sampling will be conducted unless additional sampling is necessary to achieve unfulfilled objectives for Largemouth Bass monitoring.

Blue Catfish: Anecdotally, catfishes historically supported a popular fishery at Stamford Reservoir. Blue Catfish were thought to support the bulk of the directed fishing effort for the catfish fishery prior to a severe drought and golden alga kill in 2015 Blue Catfish were stocked in 2016 to restore the fishery following the reservoir catching substantial water and Channel Catfish were last stocked in 2019, and these populations have been recovering. In September 2021, management regulations for Blue and Channel Catfish changed to a new statewide limit of 25 fish per day, no minimum length limit with no more than 10 fish ≥ 20 inches kept daily. Monitoring both catfishes is necessary to determine the status of these populations, to help develop management strategies, and to inform anglers. Historical monitoring for Blue Catfish has been achieved by both gill netting and low-frequency electrofishing, though spring low-frequency electrofishing has produced catches of ≥ 50 fish. Low frequency electrofishing will be conducted during late spring or early summer 2027 for 1.0 h at 20 randomly selected 5-minute stations if the schedule and spring weather conditions allow. A target of ≥ 50 fish \geq stock length will be attempted to evaluate size structure, and about

five fish per represented inch group will be weighed to assess relative weight. Additionally, exploratory gill netting will be conducted during spring 2027 to assess relative abundance of both Blue and Channel Catfish. Sampling will be conducted for a total of 10 net nights at 10 random stations. Total CPUE and Stock CPUE will be estimated without a target level of precision, and a sample of ≥ 50 stock fish will be attempted to be collected to evaluate size structure as PSD. During either a low frequency electrofishing survey or gill netting survey to be conducted during the monitoring period, a Category II age sample (i.e., 13 fish, 11.0-12.9 inches) will be conducted to evaluate age at stock length for Blue Catfish.

Largemouth Bass: Largemouth Bass supports an anecdotally popular fishery at Stamford Reservoir and the reservoir hosts tournaments from several bass clubs annually. Largemouth Bass were stocked during spring 2015-2017 and in summer 2019 to restore the fishery following a long-term drought and a severe golden alga kill that occurred in 2015. A nighttime survey was attempted in fall 2018 but had to be stopped because of equipment issues. Largemouth Bass were then surveyed again in 2020 and 2022 that suggested this species is still in recovery and has experienced low recruitment. Future management strategies may include stockings of Largemouth Bass upon a substantial rise in water level, and continuation of sampling is necessary to determine the status of the fishery, to inform constituents about the Largemouth Bass fishery, and reassess and refine management strategies. To continue monitoring efforts, nighttime electrofishing will be conducted in fall 2024 and fall 2026 for a duration of 1.0 hour at 12, 5-minute stations. Relative abundance (i.e., CPUE Total, Stock CPUE, and CPUE-14) will be calculated; desired precision of $RSE \leq 25$ will be attempted for CPUE-Total and Stock CPUE only. A sample of ≥ 50 stock-length fish will be attempted to be collected to evaluate size structure as PSD, and five fish per represented inch group \geq stock length will be weighed and measured to assess body conditions (i.e., relative weight). In the 2026 survey, fin clips will be collected from a random sample of 30 fish to determine allele frequencies of the Florida and Northern Largemouth Bass strains. In the 2026 survey, otoliths will be collected from 13 fish, 13.0-14.9 inches (category II sample) to assess age at legal length. If sampling objectives are not achieved, up to one hour of additional sampling may be conducted if deemed feasible. Non-random sampling may be conducted to improve the category II age sample.

White Crappie: White Crappie support a popular fishery at the reservoir, and they have been managed by the 10-inch minimum length limit and 25-fish daily bag limit. Traditionally, White Crappie have been monitored by trap netting with at least 10 net nights during late fall. Recent monitoring has suggested adequate recruitment for individuals in the population despite variable catch rates. Monitoring trends in relative abundance, size structure, and relative weight are necessary for determining the status of this population, informing anglers, and to help refine management strategies. Sampling for White Crappie was last conducted during fall 2022. Trap netting will be conducted during late fall 2026 by deploying trap nets among 10 randomly selected stations. Total catch rate, Stock CPUE, and CPUE-10 will be calculated to monitor relative abundance. Target precision for CPUE-Total and Stock CPUE will be $RSE \leq 30$, and CPUE-10 will be determined without a target precision. A sample of ≥ 50 stock-length fish will be collected to evaluate size structure as PSD, and five fish per represented inch group \geq stock-length will be measured and weighed to assess body conditions (i.e., relative weights). A sample of 13 fish, 9.0-10.9 inches will be retained to assess age at legal length. If sampling objectives are not achieved, an additional five trap nets may be set if deemed feasible.

Creel: A creel survey will be conducted from June 1, 2023 to May 31, 2024.

Literature Cited

- Anderson, R.O., and R.M. Neumann. 1996. Length, weight, and associated indices. Pages 447-482 in B.R. Murphy and D.W. Willis, editors. Fisheries techniques, second edition. American Fisheries Society, Bethesda, Maryland.
- DiCenzo, V.J., M.J. Maceina, and M.R. Stimpert. 1996. Relations between reservoir trophic state and Gizzard Shad population characteristics in Alabama reservoirs. *North American Journal of Fisheries Management* 16:888-895.
- Guy, C.S., R.M. Neuman, D.W. Willis, and R.O. Anderson. 2007. Proportional size distribution (PSD): a further refinement of population size structure index terminology. *Fisheries* 32(7): 348.
- Homer Jr., M.D. and N. Goldstrohm. 2019. Statewide freshwater fisheries monitoring and management program survey report for Stamford Reservoir, 2018. Texas Parks and Wildlife Department, Federal Aid Report F-221-M-3, Austin, Texas.
- Texas Commission on Environmental Quality (TCEQ). 2022. Trophic Classification of Texas Reservoirs. 2022 Texas Water Quality Inventory and 303 (d) List, Austin. 17 pp.
- United States Geological Survey (USGS). 2023. National water information system: Web interface. Available: <http://waterdata.usgs.gov/tx/nwis> (May 2023).

Tables and Figures

Lk Stamford nr Haskell, TX - 08084500

February 5, 2018 - May 2, 2023

Lake or reservoir water surface elevation above NGVD 1929, ft ⓘ

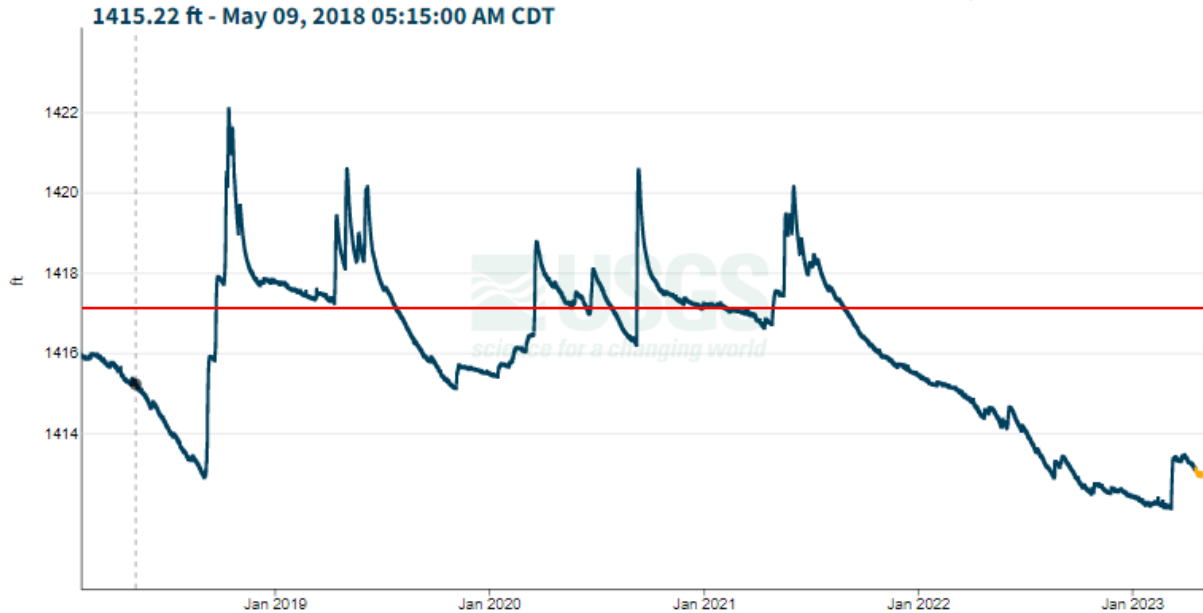


Figure 1. Daily water level elevations in feet above mean sea level (MSL) recorded for Stamford, Reservoir, Texas, 2018-2023 (USGS 2023). The red line represents conservation pool at 1,417 ft above MSL.

Table 1. Characteristics of Stamford Reservoir, Texas.

Characteristic	Description
Year Constructed	1953
Controlling Authority	City of Stamford
County	Haskell
Reservoir Type	Tributary; Paint Creek
River Basin	Brazos
Carlson's Trophic Index Classification	63.9
USGS 8-Digit Hydrologic Unit Watershed	12060103 (Paint Creek)
Conservation Pool Level (ft. above mean sea level)	1,417
Maximum Depth (ft. above mean sea level)	1,381

Table 2. Boat ramp characteristics for Stamford Reservoir, Texas, May 2023. The reservoir elevation at time of survey was about 4 ft. below conservation pool level (1,413 ft. above mean sea level).

Boat ramp	Latitude Longitude (dd)	Public	Parking capacity (N)	Elevation at end of boat ramp (ft.)	Condition
Stamford Marina	33.046454° -99.609365°	Y	20	1,405	Accessible; needs repair
Anchor Marina	33.068464° -99.599612°	Y	10	1,413	Multiple Lanes; Accessible

Table 3. Harvest regulations for Stamford Reservoir, Texas.

Species	Bag limit	Length limit
Catfish: Channel and Blue Catfish, their hybrids and subspecies	25 (in any combination); ≤10 per day ≥20 inches	No limit
Catfish, Flathead	5	18-inch minimum
Bass, White	25	10-inch minimum
Bass, Largemouth	5	14-inch minimum
Crappie: White and Black crappie, their hybrids and subspecies	25 (in any combination)	10-inch minimum

Table 4. Stocking history of Stamford Reservoir, Texas. FRY = fry <1 in.; FGL = fingerling 1-3 in.

Species	Year	Number	Size
Catfish, Blue	1974	25,300	FGL
	1977	41,250	FGL
	1991	52,000	FGL
	2016	257,183	FGL
	Total	375,733	
Catfish, Channel	1971	2,250	FGL
	1973	13,000	FGL
	1974	1,500	FGL
	2003	149,712	FGL
	2019	108,386	FGL
	Total	166,462	
Bass, Florida Largemouth	1977	60,720	FGL
	1978	116,200	FGL
	1985	83,435	FGL
	1986	71,500	FRY
	1996	260,933	FGL
	1998	262,295	FGL
	2001	100,735	FGL
	2002	263,514	FGL
	2015	268,999	FGL
	2016	95,024	FGL
	2017	95,497	FGL
	2019	95,910	FGL
	Total	1,774,762	
Bass, Palmetto	1977	23,500	FGL
	1979	46,900	FGL
	1982	46,016	FGL
	Total	116,416	
Walleye	1976	1,000,000	FRY
	1977	1,227,000	FRY
	1978	1,150,000	FRY
	Total	3,377,000	

Table 5. Objective-based sampling plan components for Stamford Reservoir, Texas 2019–2023.

Gear/target species	Survey objective	Metrics	Sampling objective
<i>Electrofishing</i>			
Gizzard Shad	Relative Abundance	CPUE–Total	RSE≤25
	Size Structure	Length frequency	N≥50
	Prey Availability	IOV	N≥50
Bluegill	Relative Abundance	CPUE-Total	RSE≤25
	Size Structure	Length Frequency, PSD	N≥50 stock-length RSE≤25 (CPUE-Total and Stock CPUE); Practical Effort for CPUE-14
Largemouth Bass	Relative Abundance	CPUE-Total, Stock CPUE, CPUE-14	RSE≤25 (CPUE-Total and Stock CPUE); Practical Effort for CPUE-14
	Size Structure	Length Frequency, PSD	N≥50 stock-length
	Body Conditions	W_r	N≥5 fish/inch group
	Genetics	Allele Frequencies for FLMB and NLMB	N=30 (random)
	Age and Growth	Age at Legal Length	N=13, 13.0-14.9 inches
<i>Low-Frequency Electrofishing</i>			
Blue Catfish	Relative Abundance	CPUE-Total and Stock CPUE	Practical Effort
	Size Structure	Length Frequency, PSD	N≥ 50 stock-length
	Body Conditions	W_r	N≥5 fish/inch group
	Age and Growth	Age at Legal Length	N=13, 11.0-12.9 inches
<i>Trap netting</i>			
White Crappie	Relative Abundance	CPUE–Total, CPUE– Stock, CPUE-10	RSE≤25 (CPUE-Total and Stock CPUE); Practical Effort (CPUE- 10)
	Size Structure	Length Frequency, PSD	N≥50 stock-length
	Body Conditions	W_r	N≥5 fish/inch group

Gizzard Shad

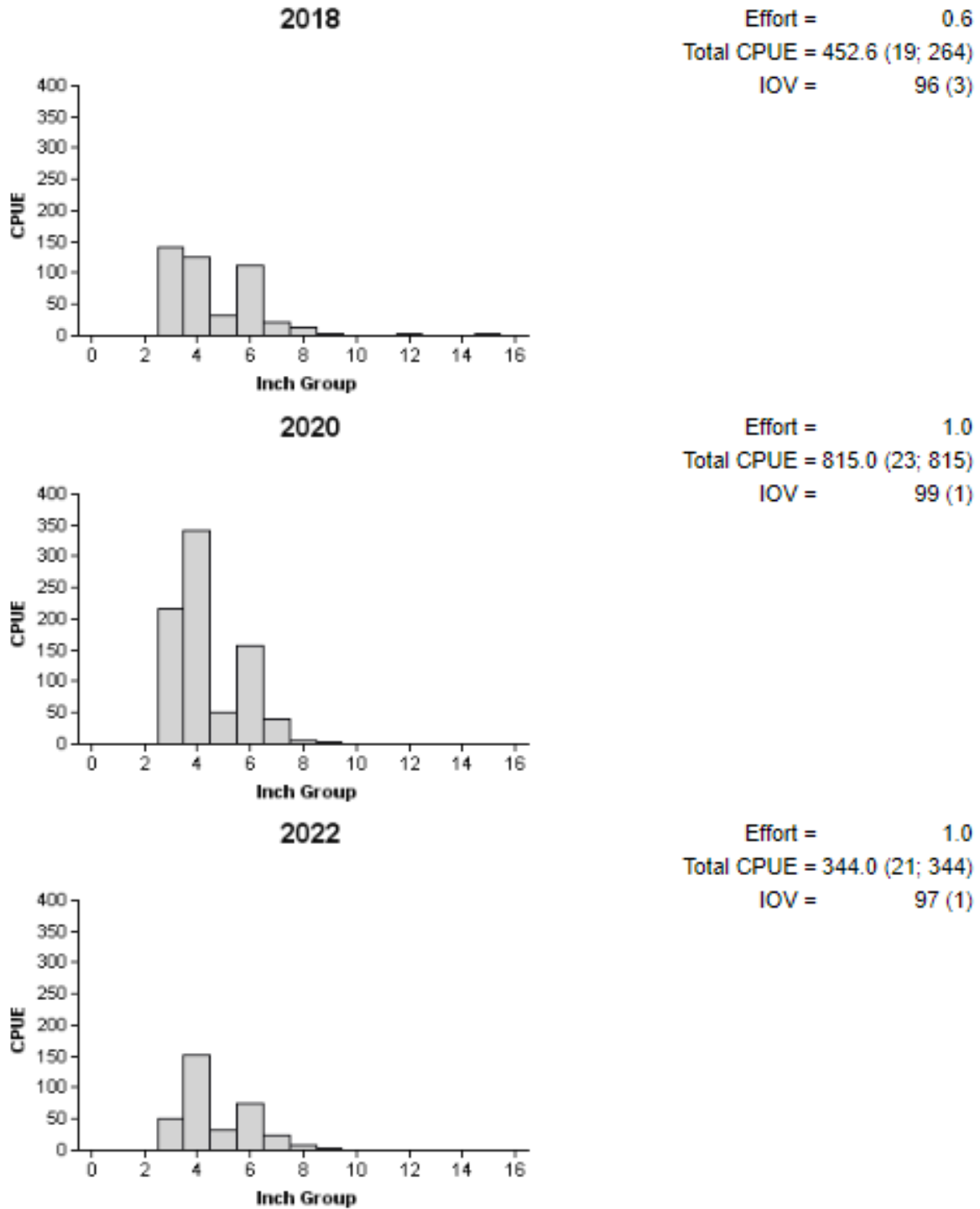


Figure 2. Number of Gizzard Shad caught per hour (CPUE) and population indices (RSE and N for CPUE and SE for IOV are in parentheses) for the fall 2018, 2020, and 2022 electrofishing surveys at Stamford Reservoir, Texas.

Bluegill

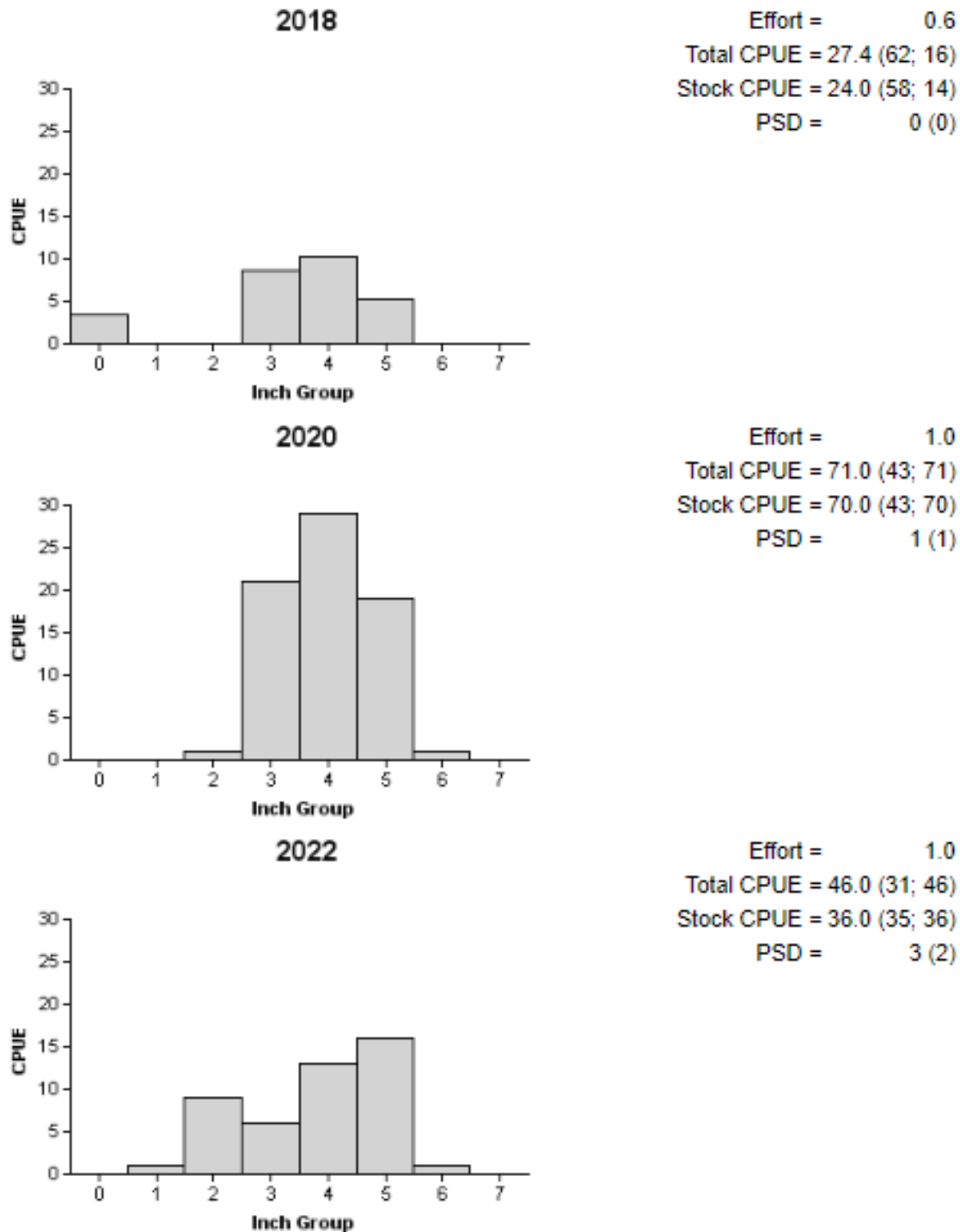


Figure 3. Number of Bluegill caught per hour (CPUE) and population indices (RSE and N for CPUE and SE for PSD are in parentheses) for the fall 2018, 2020, and 2022 electrofishing survey, Stamford Reservoir,

Blue Catfish

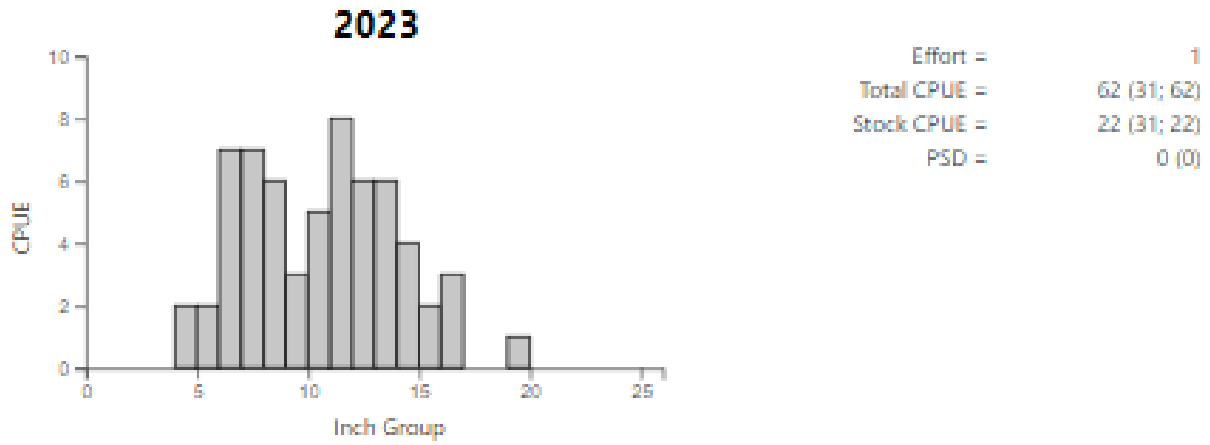


Figure 4. Number of Blue Catfish caught per hour (CPUE) and population indices (RSE and N for CPUE and SE for PSD are in parentheses) for the spring 2023 low frequency electrofishing survey, Stamford Reservoir, Texas.

Largemouth Bass

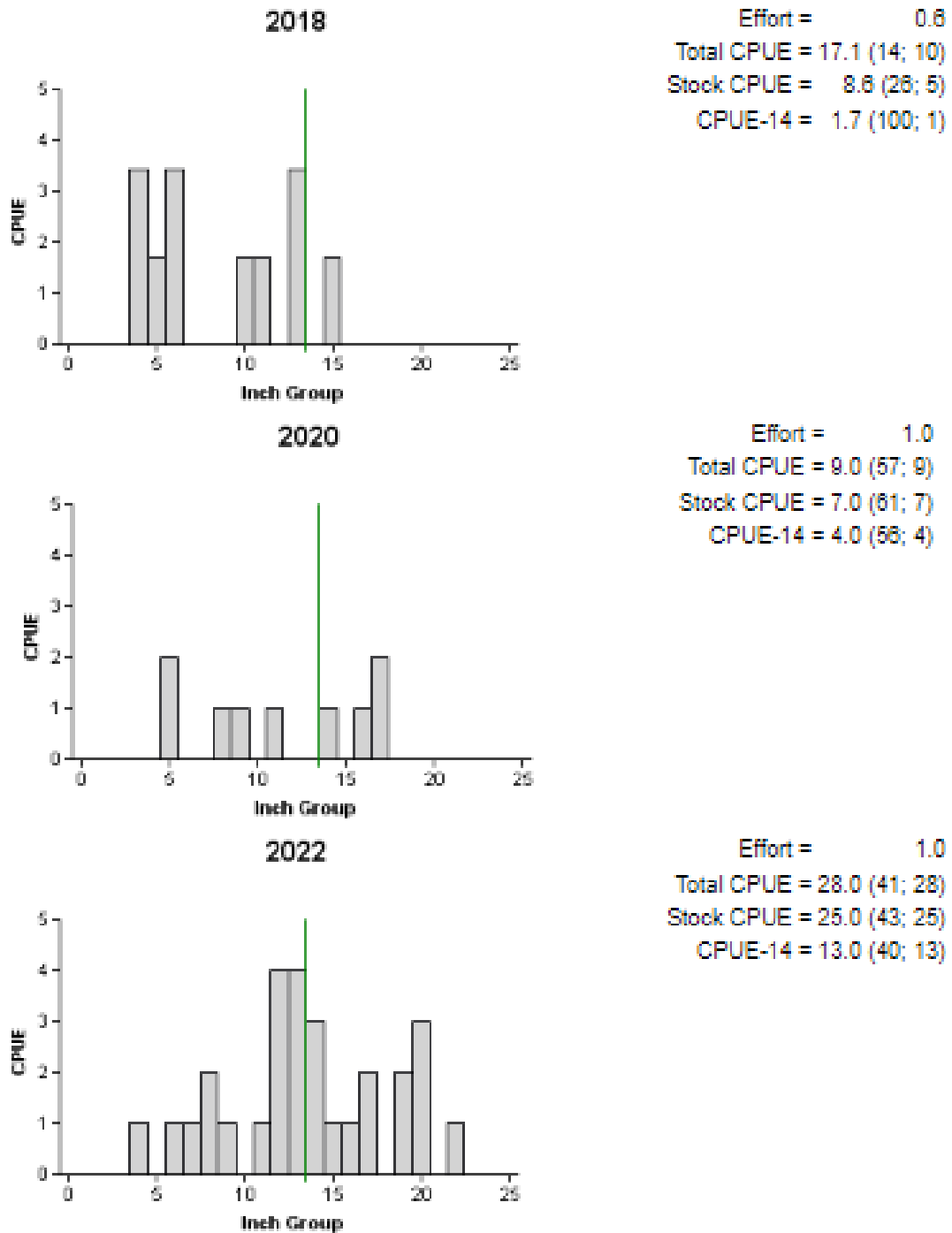


Figure 5. Number of Largemouth Bass caught per hour (CPUE, bars), population indices (RSE and N for CPUE) for the fall 2018, 2020 and 2022 nighttime electrofishing surveys, Stamford Reservoir, Texas. The vertical line denotes the minimum length limit.

Largemouth Bass

Table 6. Results of genetic analysis of Largemouth Bass collected by fall electrofishing, Stamford Reservoir, Texas, 2015, 2018, and 2022. FLMB = Florida Largemouth Bass, NLMB = Northern Largemouth Bass, Intergrade = hybrid between a FLMB and a NLMB. Genetic composition was determined by micro-satellite DNA analysis.

Year	Sample Size	Number of Fish			% FLMB Alleles	%FLMB
		FLMB	Intergrade	NLMB		
2015	30	22	8	0	90.6	73.3
2018	10	2	8	0	70.0	20.0
2022	28	7	11	0	70.0	25.0

White Crappie

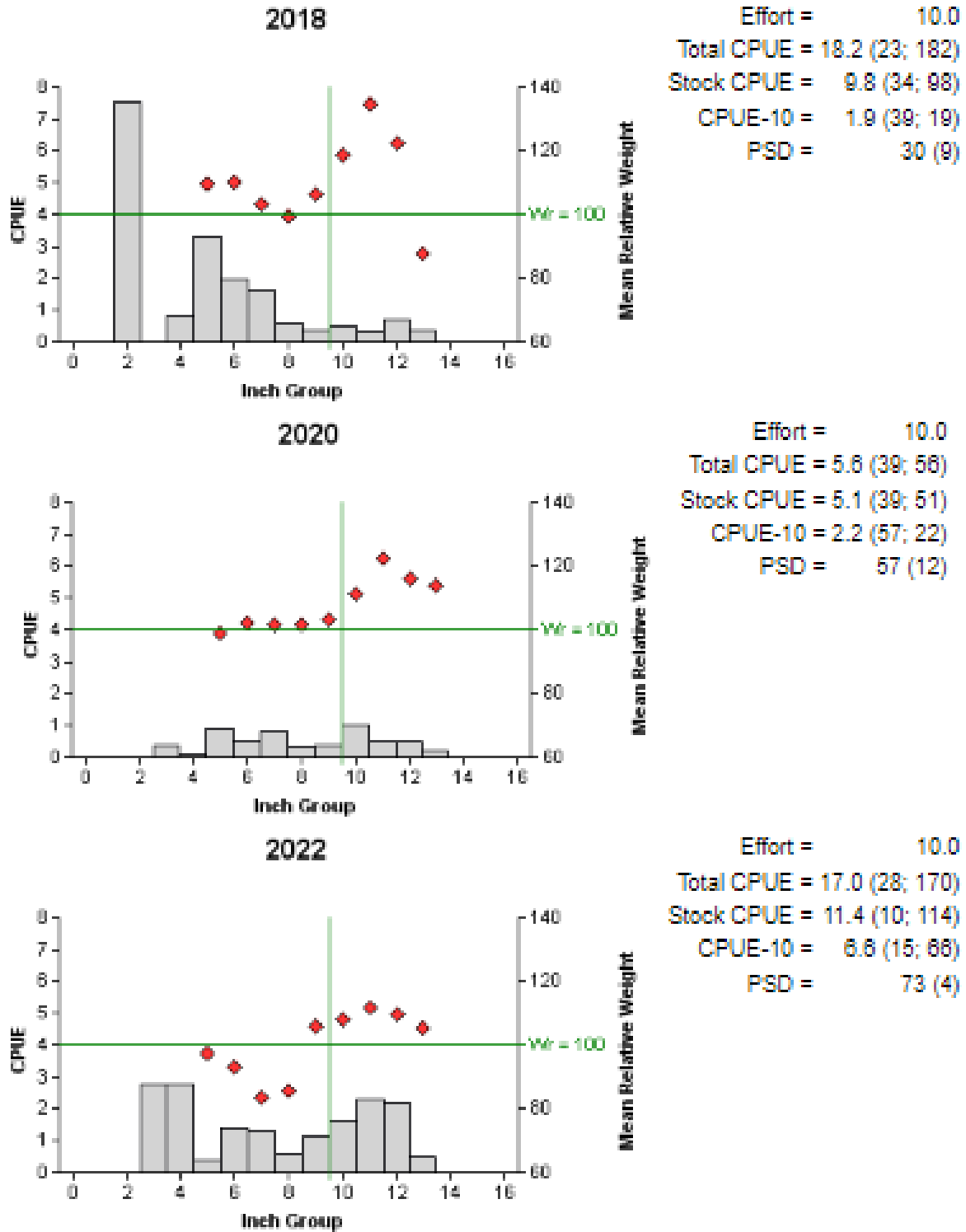


Figure 6. White Crappie caught per net night (CPUE, bars), population indices (RSE and N for CPUE and SE for PSD are in parentheses) and mean relative weights (diamonds) for the fall 2018, 2020, and 2022 trap netting survey, Stamford Reservoir, Texas. The vertical line denotes the minimum length limit, and the horizontal line represents relative weight at 100.

Proposed Sampling Schedule

Table 7. Proposed sampling schedule for Stamford Reservoir, Texas. The survey period is June 2023-May 2027. Gill netting surveys are conducted in the spring, low-frequency electrofishing is conducted in late spring to early summer, while electrofishing and trap netting surveys are conducted in the fall. Standard survey denoted by X.

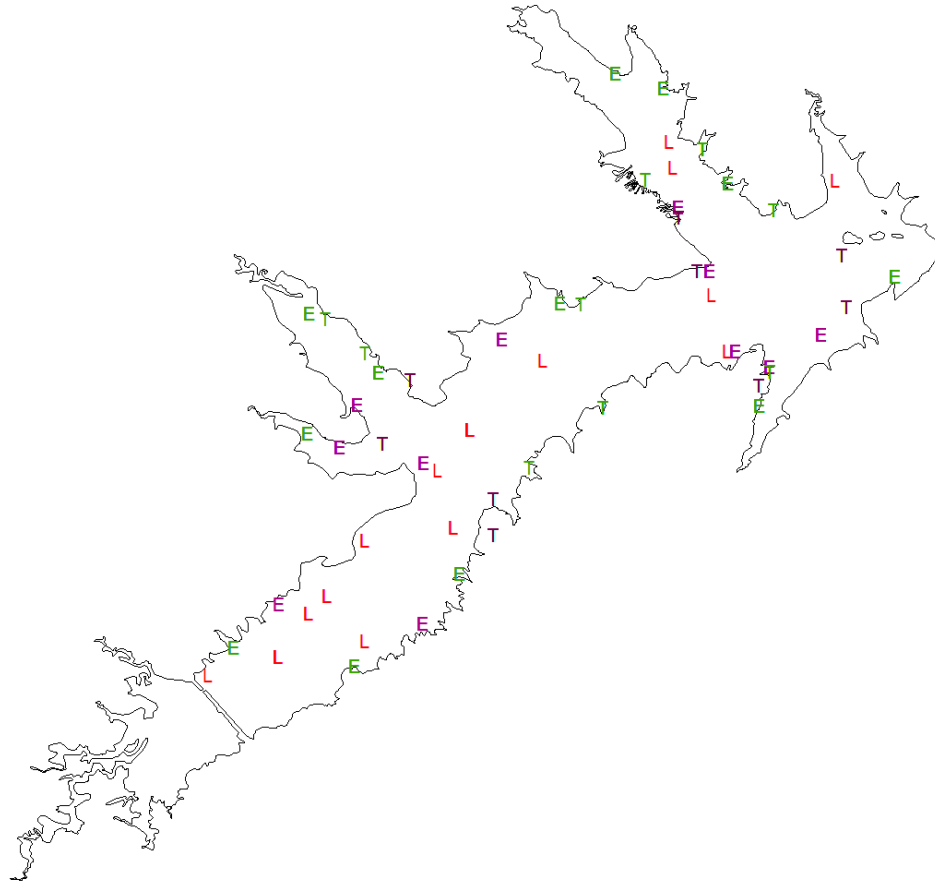
	Survey year			
	2023-2024	2024-2025	2025-2026	2026-2027
Angler Access				X
Vegetation				X
Electrofishing – Fall		X		X
Electrofishing – Low frequency				X
Gill netting				X
Trap netting				X
Creel	X			
Report				X

Appendix A


Number (N) and catch per unit effort (CPUE; RSE in parentheses) of all target species collected from all gear types from Stamford Reservoir, Texas, 2022-2023. Sampling effort was 1.0 hour for electrofishing and low frequency electrofishing as well as 10 net nights for fall trap netting. Inland Silversides were visually abundant as a prey species, but they could not be effectively sampled with the standardized gear.

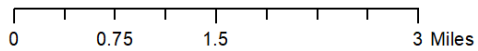
Species	Electrofishing		Trap Netting		Low Frequency Electrofishing	
	N	CPUE	N	CPUE	N	CPUE
Gizzard Shad	344	344.0 (21)				
Blue Catfish					62	62.0 (31)
Inland Silverside	1	1.0 (100)				
Redbreast Sunfish	2	2.0 (100)				
Green Sunfish	8	8.0 (65)				
Warmouth	5	5.0 (62)				
Orangespotted Sunfish	1	1.0 (100)				
Bluegill	46	46.0 (31)				
Longear Sunfish	13	13.0 (37)				
Largemouth Bass	28	28.0 (41)				
White Crappie			170	17.0 (28)		

Appendix B



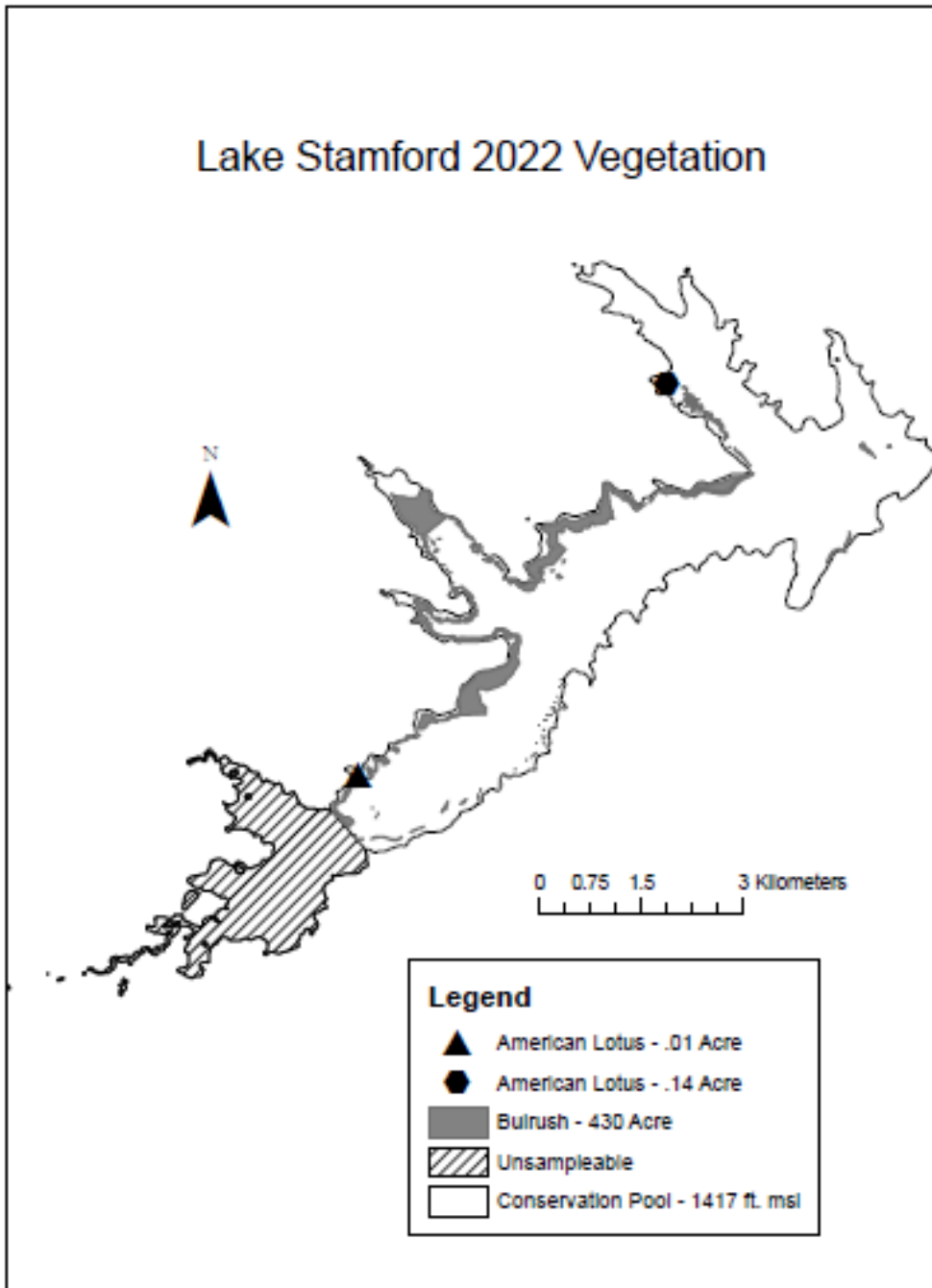
Legend

- E 2020 Electrofishing
- T 2020 Trap Netting
- E 2022 Electrofishing
- T 2022 Trap Netting
- L 2023 Low frequency Electrofishing
-  Reservoir



Locations of electrofishing (E), low frequency electrofishing (L), and trap netting (T) stations at Stamford Reservoir, Texas, 2020-2023.

Appendix C



Map of vegetation surveyed in summer 2022 at Stamford Reservoir, Texas.



Life's better outside.®

In accordance with Texas State Depository Law, this publication is available at the Texas State Publications Clearinghouse and/or Texas Depository Libraries.

© Texas Parks and Wildlife, PWD RP T3200-1375 (09/23)

TPWD receives funds from the USFWS. TPWD prohibits discrimination on the basis of race, color, religion, national origin, disability, age, and gender, pursuant to state and federal law. To request an accommodation or obtain information in an alternative format, please contact TPWD on a Text Telephone (TTY) at (512) 389-8915 or by Relay Texas at 7-1-1 or (800) 735-2989 or by email at accessibility@tpwd.texas.gov. If you believe you have been discriminated against by TPWD, please contact TPWD, 4200 Smith School Road, Austin, TX 78744, or the U.S. Fish and Wildlife Service, Office for Diversity and Workforce Management, 5275 Leesburg Pike, Falls Church, VA 22041.