Proctor Reservoir

2022 Fisheries Management Survey Report

PERFORMANCE REPORT

As Required by

FEDERAL AID IN SPORT FISH RESTORATION ACT

TEXAS

FEDERAL AID PROJECT F-221-M-4

INLAND FISHERIES DIVISION MONITORING AND MANAGEMENT PROGRAM

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Contents

Survey and Management Summary

Fish populations in Proctor Reservoir were surveyed in fall 2022 by using electrofishing and trap netting, as well as in spring 2023 by using gill netting. Historical data are presented with the 2022-2023 data for comparison. This report summarizes the results of the surveys and contains a management plan for the reservoir based on those findings.

Reservoir Description: Proctor Reservoir is a 4,615-acre impoundment constructed in 1963 on the Leon River and is located 10 miles north of the City of Comanche. Proctor Reservoir is controlled by the United States Army Corps of Engineers. Primary uses include flood control, water supply, and recreation. From 2016 to 2023, the reservoir experienced large water level fluctuations. In May 2019, the reservoir caught substantial water to 10 ft. over conservation pool elevation but dropped to 3 ft. below by 2020. In June 2021, the reservoir caught water to over flood stage, but the water level declined rapidly over the summer and continued to decrease to about 10 feet below conservation pool elevation. Since the water level fluctuated over time, aquatic vegetation was limited and was not observed in the reservoir. Habitat features included flooded terrestrial vegetation, rocks, and standing timber. An artificial habitat project was completed in 2019 and 2021 by using artificial habitat structures. Ample bank fishing access was in the park areas, but multiple ramps faced closures due to recent drought conditions.

Management History: Important sport fish included White Bass, Hybrid Striped Bass, Largemouth Bass, crappie, and catfish. Sunshine Bass fry were stocked as part of a special study from 2014-2017. After fry stockings had poor recruitment, Palmetto Bass fingerlings were stocked in 2017 and 2018. Sunshine Bass fry were stocked in 2020 and fingerlings in 2021-2023. The most recent stocking of Florida Largemouth Bass was in 2019. In 2021, size and harvest limits for Blue and Channel Catfish were changed to a 14-inch minimum length limit and 15-fish daily bag limit. Other sport fishes were managed with the statewide regulations.

Fish Community

- **Prey species:** The prey base was primarily comprised of Gizzard Shad and Bluegill; however, other sunfish were present. The electrofishing catch rate of Gizzard Shad was high and most were suitable sizes to be utilized by most sport fish. Electrofishing catch of Bluegill was good and provided another prey resource, but few Bluegill were greater than 6-inches long.
- **Catfishes:** Channel Catfish, Blue Catfish, and Flathead Catfish were present in the reservoir. Blue Catfish and Channel Catfish catch rates were low. However, both populations contained fish of legal length.
- **Temperate basses:** White Bass and Hybrid Striped Bass were present in the reservoir. White Bass catch rates were good, and body conditions were excellent. Hybrid Striped Bass catch rate improved since the drought and possible escapement from the reservoir during flooding. However, few fish of legal length were available for anglers. With continued stocking, catch rates will likely improve.
- **Largemouth Bass:** Largemouth Bass were present in the reservoir in low relative abundance. There were few legal-length fish available to anglers. Nearly 25% of the Largemouth Bass sample at Proctor Reservoir were pure Florida Largemouth Bass.
- **Crappie:** White Crappie were more abundant than Black Crappie. White Crappie catch rates have been declining, but there were still harvestable length White Crappie available for anglers. Black Crappie continued to exhibit low catch rates.

Management Strategies: Continue stocking Hybrid Striped Bass fingerlings at 15 fish/acre. Stock Blue Catfish fingerlings upon a substantial rise in water level. Inform the public about the negative impacts of aquatic invasive species. Conduct general monitoring for Largemouth Bass and prey fish with electrofishing in 2026. Conduct general monitoring surveys with trap nets and gill nets surveys in 2026-2027. Access and vegetation surveys will be conducted in 2026.

Introduction

This document is a summary of fisheries data collected from Proctor Reservoir in 2016-2019. 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 2016-2019 data for comparison.

Reservoir Description

Proctor Reservoir is a 4,615-acre impoundment constructed in 1963 on the Leon River. The reservoir is located in Comanche County approximately 10 miles north of the City of Comanche, and it is owned and operated by the United States Army Corps of Engineers (USACE). Primary water uses included flood control, water supply, and recreation. From 2016 to 2023, the reservoir experienced large water level fluctuations (Figure 1). In May 2019, the reservoir caught substantial water over conservation pool elevation but dropped over 10 feet by January 2020. In June 2021, the reservoir caught water to over flood stage, but the water level declined rapidly over the summer and it continued to decrease to about 10 feet below conservation pool elevation by June 2023. Proctor Reservoir was classified as “eutrophic” with TSI *chl-a* of 66.1 (Texas Commission on Environmental Quality Habitat 2022). At time of sampling, habitat consisted of rocks, standing timber, and sparse flooded terrestrial vegetation. No aquatic plants were present. Other descriptive characteristics for Proctor Reservoir are in Table 1.

Angler Access

Proctor Reservoir had seven boat ramps controlled by USACE. Park entry fees are required to access the ramps. Copperas West Ramp and Sowell Creek Day Use Ramp were the only open ramps by May 2023. Promontory Park pier, Copperas East and West piers, and one pier at Sowell Creek were accessible to bank anglers by May 2023. All courtesy docks were out of water by May 2023. Additional boat ramp characteristics are in Table 2.

Management History

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

1. Stock Hybrid Striped Bass at 15 fingerlings/acre.

   Action: Hybrid Striped Bass were stocked annually from 2020-2023.

2. Stock Blue Catfish fingerlings 15 fish/acre at least once during 2020-2023.

   Action: Blue Catfish fingerlings were stocked in 2021 and 2022.

3. Continue BRA and USACE partnerships for fisheries habitat enhancement projects and seek additional collaborations.

   Action: A habitat enhancement project was conducted during the fall of 2021.

4. Educate the public about invasive species with media and the internet. Make a speaking point about invasive species when presenting to constituents.

   Action: Multiple popular press articles were written during the survey period, as well as several interviews were conducted with media to discuss the threats of invasive species. Multiple presentations were also given to bass clubs and other groups. Discussed the threat of invasive species with USACE team at Proctor Reservoir and signage was placed at all boat ramps.

Harvest regulation history: All sport fish except for Blue and Channel Catfish are currently managed under statewide harvest regulations (Table 3). During 2002, the minimum length limit for Largemouth Bass changed from 14 to 16 inches. However, the regulation reverted to the statewide harvest regulation in September 2012. In 2021 the statewide size and harvest limits for Blue and Channel Catfish were changed to a 14-inch minimum length limit and 15-fish daily bag limit.

Stocking history: Palmetto Bass fingerlings were originally stocked in 1978 and have been stocked nearly every year since to maintain the fishery. From 2014 through 2017 and once more in 2020, Sunshine Bass fry were stocked. Sunshine Bass fingerlings were stocked from 2021 through 2023. Florida Largemouth Bass were first stocked in 1979 and were most recently stocked in 2019. Blue Catfish were introduced in 1991 and restocked in 2019, 2021, and 2022. The complete stocking history is in Table 4.

Vegetation/habitat management history: Proctor Reservoir has no history of management for vegetation. During 2016, 2019, and 2021, TPWD partnered with BRA and USACE to create multiple areas with artificial habitat structures (see Appendix C). Creation of habitat by using different combinations of artificial structures was intended to create habitat complexity. Coordinates of enhanced areas were provided to the public.

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 Proctor Reservoir (Goldstrohm and Homer 2019). Primary components of the OBS plan are listed in Table 5. All survey sites were randomly selected unless otherwise noted and all surveys were conducted according to the Fishery Assessment Procedures (TPWD, Inland Fisheries Division, unpublished manual revised 2022).

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

Trap netting – Crappie were collected with 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).

Gill netting – Channel Catfish, Blue Catfish, White Bass, and Hybrid Striped Bass were collected by gill netting (5 net nights at 5 stations). CPUE for gill netting was recorded as the number of fish caught per net night (fish/nn). Ages for Hybrid Striped Bass were determined using otoliths from individuals that had expired during sampling.

Genetics – Genetic analysis of Largemouth Bass was conducted according to the Fishery Assessment Procedures. Micro-satellite DNA analysis was used to determine genetic composition of individual fish.

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). Hybrid Striped Bass PSD was calculated according to Dumont and Neely (2011). Index of Vulnerability (IOV) was calculated for Gizzard Shad (DiCenzo et al. 1996). Standard error (SE) was calculated for structural indices and IOV.

Habitat – Habitat coverage was evaluated by field circumnavigation and the digital shapefile method (TPWD, Inland Fisheries Division, unpublished manual revised 2022).

Water level – Source for water level data was the United States Geological Survey (USGS 2023).

Results and Discussion

Habitat: In 2022, the shoreline habitat present was primarily natural or featureless shoreline. Most of the reservoir was open water and limited areas of sparse inundated terrestrial vegetation, rocky areas, and timber were present. No aquatic vegetation was sampled in 2022.

Prey species: The prey base primarily consisted of Gizzard Shad, Threadfin Shad, Bluegill, and Longear Sunfish. Other prey species encountered during the survey period included Hybrid Sunfish and Inland Silversides. Catch rates of Gizzard Shad fluctuated from 1,184.0/h in 2018 to 279.0/h in 2020 to 1,034.0/h in 2022. IOV was similar in 2018 (95) to 2020 (96) and 2023 (99), which suggested that most of the Gizzard Shad were suitable prey sizes for most sport fishes (Figure 2). Bluegill catch rate fluctuated from 129.0/h in 2018 to 182.0/h in 2020 to 45.0/h in 2023. Sizes of Bluegill ranged from 2-8 inches, though most individuals were 4-5 inches. The PSD for Bluegill decreased from 23 in 2018 to 11 in 2020; desired sample size was not met to assess PSD in 2022 (Figure 3). Longear Sunfish total catch rates fluctuated during the survey period from 30.0/h in 2018 to 220.0/h in 2020 to 28.0/h in 2022 (Figure 4). Prey species were ample and should be available to sport fish.

Blue Catfish: Blue Catfish relative abundance has been poor since they were first introduced into the reservoir in 1991. Catch rates in the most recent gill net surveys remained low and were 1.2/nn in 2017, 3.6/nn in 2019, and 3.2/nn in 2023 (Figure 5). Stock CPUE also remained low and fluctuated from 1.1/nn in 2017 to 3.4/nn in 2019 to 1.4/nn in 2023. Sample sizes have been consistently low during monitoring surveys, and an ample sample was not achieved to reliably evaluate size structure in 2023.

Channel Catfish: Channel Catfish were present in the reservoir but have had consistently low catch rates in gill net surveys. Catch rates in recent gill net surveys were 2.7/nn in 2017, 1.0/nn in 2019, and 1.8/nn in 2023 (Figure 6). Size structure and mean relative weights were not able to be evaluated because of low sample size in 2023.

White Bass: Catch rates increased from 5.7/nn in 2017 to 10.6/nn in 2019 then declined to 5.6/nn in 2023 (Figure 7). Like the surveys conducted from 2015-2019, the 2023 sample was mostly represented by fish ≥10 inches. However, PSD and mean relative weights were not able to be evaluated because of low sample size.

Hybrid Striped Bass: Gill netting CPUE for Hybrid Striped Bass fluctuated from 1.1/nn in 2017 to 14.8/nn in 2019 to 3.8/nn in 2023 (Figure 8). In 2017, stations were biologist-selected stations to improve an age and growth sample, yet only one fish was collected. All fish collected during the 2023 survey were <18 inches. Fish that were retained ranged from 1-6 years old (Figure 9). The sample size for Hybrid Striped Bass was inadequate to effectively evaluate size structure and relative weights.

Largemouth Bass: Historically, catches of Largemouth Bass in Proctor Reservoir have been poor and likely attributed to fluctuations of water level and poor habitat conditions. Electrofishing catch rate for Largemouth Bass fluctuated from 18.0/h in 2018 to 27.0/h in 2020 to 12.0/h in 2022 (Figure 10). Catch rates of stock-length Largemouth Bass (≥8 inches) fluctuated from 12.0/h in 2018 to 19.0/h in 2020 to 12.0 in 2022. No more than 5 legal Largemouth Bass were caught in the surveys conducted from 2018 to 2022. Size structure and relative weights could not be reliably evaluated because of poor sample sizes of Largemouth Bass In 2023, all 12 Largemouth Bass sampled were evaluated for prevalence of Florida Largemouth Bass alleles, and 3 fish were pure Florida Largemouth Bass and the remaining 9 were intergrade Largemouth Bass (Table 6).

Crappie: White and Black Crappie both exist in Proctor Reservoir, but White Crappie are the dominant of the two species. In 2023, only 7 individuals caught in the trap netting survey were Black Crappie. Catch rates for White Crappie fluctuated from 34.4/nn in 2016 to 17.1/nn in 2018 to 26.3/nn in 2023 (Figure 11). From 2018-2022, PSD of White Crappie has been consistently high and ranged from 83 to 92, indicating that there were mostly fish >quality length present. Mean relative weights for White Crappie were optimal (i.e., >100) suggesting that prey availability is not an issue for this species.

Fisheries Management Plan for Proctor Reservoir, Texas

Prepared – July 2023

ISSUE 1: Hybrid Striped Bass have been a part of the fishery at Proctor Reservoir since early 1978. Annual stocking of Hybrid Striped Bass is required to sustain the population and maintain a fishery.

MANAGEMENT STRATEGY

1. Stock Hybrid Striped Bass fingerlings annually at 15 fish/acre.

ISSUE 2: Catfishes support an anecdotally popular fishery at Proctor Reservoir. Yet, recent surveys have indicated poor recruitment for both Channel and Blue Catfish. Stockings are necessary to help boost recruitment of both species.

MANAGEMENT STRATEGY

1. Stock Blue Catfish and Channel Catfish fingerlings at 15 fish/acre following a substantial rise (i.e., >5 ft.) in water level.

ISSUE 3: Prolonged droughts and siltation has resulted in degradation and loss of vegetation and structural habitat at Proctor Reservoir. Habitat enhancements are necessary for the management of fishery.

MANAGEMENT STRATEGY

1. Continue BRA and USACE project collaborations and seek new partners for fisheries habitat enhancement projects.

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 (*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 USACE to post appropriate signage at access points around the reservoir.
2. Contact controlling authority and provide them with posters, literature, etc… so that they can in turn educate their customers.
3. Educate the public about invasive species with 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 present in Proctor Reservoir are Blue Catfish, Channel Catfish, Flathead Catfish, Hybrid Striped Bass, White Bass, Largemouth Bass, Black Crappie, and White Crappie. Important prey species include Gizzard Shad and Bluegill. For sampling schedule, see Table 10.

Low-density fisheries:

Largemouth Bass: Largemouth Bass have been managed with the statewide 14-inch MLL and 5-fish daily bag limit. Historical monitoring has suggested that Largemouth Bass are a low-density species in Proctor Reservoir. Prior surveys have produced poor catch rates of Largemouth Bass, which likely is attributed to poor recruitment in the population resulting from poor habitat availability and quality. Largemouth Bass will be monitored with prey species, but no specific objectives will be set.

Flathead Catfish: Flathead Catfish are present in the reservoir and have been managed with the statewide 18-inch minimum length limit (MLL) and 5-fish daily bag limit. Historic catch rates have been low in monitoring surveys. Gill netting catch rate in 1992 was 0.2/nn and 0.2/nn in 2003. A baseline low-frequency electrofishing survey for Flathead Catfish was conducted in summer 2014. The catch rate was 2.5/h. Additional monitoring for Flathead Catfish will not be conducted during the 2023-2027 survey period. Presence/absence for Flathead Catfish will be conducted during sampling efforts for other species.

Survey objectives, fisheries metrics, and sampling objectives:

Prey Species: Gizzard Shad, Threadfin Shad, Bluegill, and Longear Sunfish are the primary prey species in Proctor Reservoir. The next electrofishing survey will be conducted in fall 2026 for 1.0 h at 12, 5-minute random stations. Total catch-per-unit-effort (CPUE) will be determined for prey species with no target level of precision. A sample of ≥50 Gizzard Shad will be collected for monitoring trends of size structure (length frequency) and to calculate Index of Vulnerability for assessing prey availability/size suitability for sport fishes. Size structure (i.e., PSD) will be determined for Bluegill by collecting ≥50 stock- length fish. Catch rates for other sunfishes and prey fishes will be determined with practical effort and no target levels of precision. If sample sizes and desired precision for relative abundance estimates of Gizzard Shad are not achieved, no additional electrofishing will be conducted.

Hybrid Striped Bass (i.e., Palmetto Bass and Sunshine Bass): Hybrid Striped Bass have been managed with the statewide 18-inch MLL and 5-fish daily bag limit. Since 1978, frequent stockings have been necessary to provide and maintain the fishery. Stocking efforts for Palmetto Bass have been successful and were once relatively abundant in the reservoir. Though, from 2014-2017, Sunshine Bass fry were stocked, and only six fish from these stockings were caught in monitoring surveys. Severe flooding at Proctor Reservoir in 2016 with water level approximately 32 feet over conservation pool likely resulted in loss of fish down river. Stockings of Sunshine Bass were conducted from 2020-2023. Traditional monitoring of Hybrid Striped Bass has been achieved with spring gill net surveys with effort of 5 to 10 net nights (nn). Typically, surveys with 5 net nights have not produced adequate samples for evaluating size structure and relative weights. Continuation of monitoring by gill nets is necessary to determine the status of the fishery, to ascertain additional stocking needs, and to better inform constituents about the fishery. If the reservoir is above 50% capacity, gill nets will be deployed during spring 2027 at 10 random stations at depths ≤30 feet to collect relative abundance data. A target precision of RSE≤30 will be attempted for CPUE-Total. A target of ≥50 stock- length Hybrid Striped Bass will be collected to monitor trends in size structure, and five fish per inch group ≥stock-length will be measured and weighed to assess body conditions. If the water level is below 50% capacity, gill netting will only be conducted at 5 stations to monitor presence/absence and to collect specimens for age and growth for a Category I sample. All fish collected will be retained to assess growth of individuals in the population. Fin clips may also be retained and used for genetic analysis to assess hybrid type.

White Bass: White Bass are present in the reservoir and have been managed with the 10-inch MLL and 25-fish daily bag limit. White Bass support the morone fishery. Continued gill netting is needed to maintain trend data. This will allow for determination of any large-scale changes in the White Bass population that may warrant further investigation as well as allow for better communication about the fishery to our constituents. White Bass will be monitored during spring gill netting in 2027. No target levels of precision will be attempted for estimates of CPUE-Total or CPUE-Stock. A target of ≥50 stock- length fish will be collected to assess size structure, five fish per inch group ≥stock- length will be measured for length and weight to assess body conditions.

Blue and Channel Catfish: Blue Catfish are present in the reservoir and were managed with the 12-inch MLL and 25-fish (in combination with Channel Catfish) daily bag limit, but in September 2021, a special regulation was enacted requiring a 14-inch MLL and 15 fish/daily bag limit. Anecdotal information suggests that interest in fishing for Blue Catfish has increased in popularity (personal communication, USACE - Proctor Reservoir). Blue Catfish have had poor relative abundance in monitoring surveys since they were introduced into the reservoir in 1991. Based on previous sampling, it is likely that neither 1 hour of low-frequency electrofishing effort nor 10 gill nets will result in ≥50 stock- length fish or data precision of RSE≤25. Thus, monitoring for Blue Catfish relative abundance will be conducted in conjunction with gill net sampling for Hybrid Striped Bass and White Bass. No other specific sampling objectives will be set for Blue Catfish using gill nets. If ≥50 stock- length fish are sampled, then PSD will be calculated. If possible, five fish per inch group ≥stock- length will be measured and weighed to assess body conditions. No additional gill net sampling effort will be conducted to improve data precision or sample size. Desired low frequency electrofishing surveys were not conducted during the 2019-2023 monitoring cycle. Therefore, the survey will be attempted during the 2023-2027 cycle for a period of 1.0 h at 20 randomly selected 3-minute stations. If low-frequency electrofishing is conducted no target precision will be attempted for CPUE-Total and Stock CPUE. Proportional Size Distribution will be evaluated during low-frequency electrofishing if the sample size target is met. If possible, 5 fish per inch group ≥stock-length will be measured and weighed to assess body conditions.

Channel Catfish are present in the reservoir and have been managed with the 12-inch MLL and 25-fish (in combination with Blue Catfish) daily bag limit. Anecdotal information suggests that interest in fishing for catfish has increased in popularity (personal communication, USACE - Proctor Reservoir). Channel Catfish have traditionally had poor relative abundance in gill netting surveys. Gill nets will be deployed during spring 2023 at 5 random stations at depths ≤30 feet. Monitoring of Channel Catfish relative abundance (CPUE-Total) will be conducted in conjunction with gill net sampling for Hybrid Striped Bass and White Bass. No other specific sampling goals will be set for Channel Catfish. In late spring/ early summer 2026, tandem hoop netting will be conducted as an exploratory survey. No target levels of precision or sample size will be attempted, and a total of 10 tandem series will be set.

Crappie: White Crappie and Black Crappie are present and have been managed under the statewide 10-inch MLL and 25-fish daily bag limit. Anecdotal information suggests that interest in fishing for crappie has remained popular (personal communication, USACE - Proctor Reservoir). White Crappie have been substantially more dominant than Black Crappie, and both will be monitored in combination during the 2023-2027 monitoring cycle. Continuation of biennial trap netting to maintain trend data will allow for determination of any large-scale changes in the crappie population that may warrant further investigation as well as allow for better communication about the fishery to our constituents. Trap nets will be deployed at 10 random stations in fall 2026 to obtain estimates of CPUE-Total and CPUE-Stock at a target precision of RSE≤25; CPUE-10 will also be determined without a target level of precision. A target of ≥50 stock-length crappie will be collected to monitor trends in size structure, and five fish per inch group ≥stock- length will be measured and weighed to assess body conditions. A Category II age sample of White Crappie (13 fish, 9.0-10.9 inches) will be conducted to assess age at legal length. Five additional random stations may be added if data objectives are not met and if extra sampling is deemed feasible.

Creel: A creel survey will not be conducted during the next monitoring cycle. A creel has not been done at Proctor Reservoir, and if feasible, an access creel may be attempted during the monitoring period.

Literature Cited

Anderson, R. O., and R. M. Neumann. 1996. Length, weight, and associated structural indices. Pages 447-482 in B. R. Murphy and D. W. Willis, editors. Fisheries techniques, 2nd 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.

Dumont, S. C., and B. C. Neely. 2011. A proposed change to Palmetto Bass proportional size distribution length categories. North American Journal of Fisheries Management 31: 722-725.

Goldstrohm, N., and M. Homer. 2019. Statewide freshwater fisheries monitoring and management program survey report for Proctor Reservoir, 2018. Texas Parks and Wildlife Department, Federal Aid Report F-221-M-3, Austin.

Guy, C. S., R. M. Neumann, 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.

Texas Commission on Environmental Quality. 2022. Trophic Classification of Texas Reservoirs. 2022 Texas Water Quality Inventory and 303 (d) List, Austin. 17 pp.

United States Geological Society (USGS). 2023. National water information system: Web interface. Available: http://waterdata.usgs.gov/tx/nwis (May 2023).

Tables and Figures

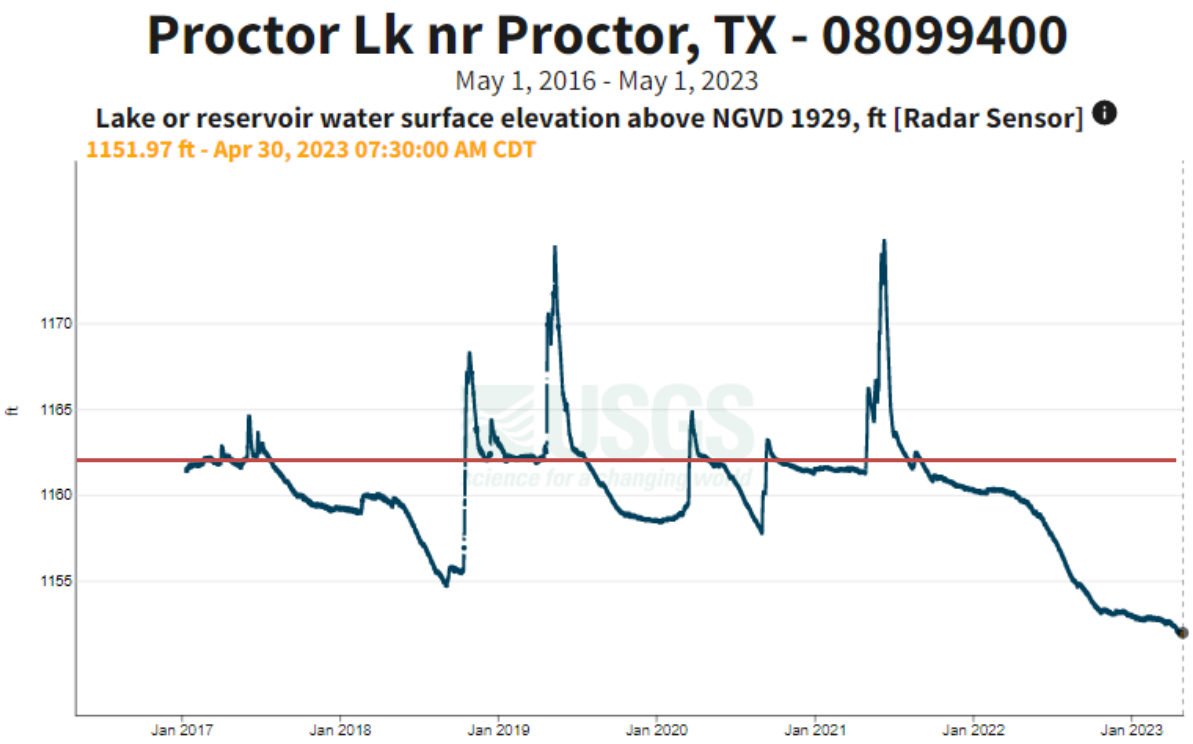


Figure 1. Mean daily water level elevations in feet above mean sea level (MSL) recorded for Proctor Reservoir, Texas, 2017-2023. Conservation pool is 1,162 feet above mean sea level, shown in red. Maximum depth is approximately 1,128 feet above mean sea level.

Table 1. Characteristics of Proctor Reservoir, Texas.

Characteristic	Description
Year constructed	1963
Conservation pool elevation	1,162 feet above mean sea level
Controlling authority	U.S. Army Corps of Engineers
County	Comanche
Reservoir type	Tributary
River basin	Brazos River Basin
Carlson's Trophic Index classification	66.1
USGS 8-Digit HUC watershed	12070201 (Leon)
Conductivity	302-663 µS/cm

Table 2. Boat ramp characteristics for Proctor Reservoir, Texas, May 2023. Water level at time of survey was 1,152 feet above mean sea level.

Boat ramp	Latitude Longitude (dd)	Public	Parking capacity (N)	Boat ramp closure elevation (ft)	Condition
Copperas East	31.97003 -98.49956	Y	20	1,150.5	Temporarily closed by controlling authority
Copperas West	31.97375 -98.50571	Y	20	1,152.0	Accessible
Sowell Creek North	31.99155 -98.46024	Y	20	1,152.0	Temporarily closed by controlling authority
Sowell Creek South	31.97241 -98.46847	Y	30	1,150.0	Accessible
Spillway	31.96916 -98.48876	Y	15	1,155.0	Temporarily closed by controlling authority
Promontory East	31.98787 -98.48265	Y	20	1,152.0	Temporarily closed by controlling authority
Promontory West	31.97825 -98.49659	Y	15	1,154.0	Temporarily closed by controlling authority
Foley's Landing*	32.0081 -98.4825	Y	10	Unknown	Closed from drought
Buffalo Springs*	31.99003 -98.49764	Y	5	Unknown	Closed from drought

* Boat ramp is not on USACE property, is not managed by USACE, and does not have the USACE entry fee.

Table 3. Harvest regulations for Proctor Reservoir, Texas.

Species	Bag limit	Length limit
Catfish: Channel and Blue Catfish, their hybrids and subspecies	15 (in any combination)	14-inch minimum
Catfish, Flathead	5	18-inch minimum
Bass, White	25	10-inch minimum
Bass, Hybrid Striped Bass	5	18-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 Proctor Reservoir, Texas. FGL = fingerling; FRY = fry; ADL = adults; UNK = unknown.

Species	Year	Number	
Shad, Threadfin	1984	1,000	ADL
Catfish, Blue	1991	46,417	FGL
	2019	161,811	FGL
	2021	199,941	FGL
	2022	169,879	FGL
	2023	28,145	FGL
	Total	606,193	
Bass, Palmetto (female	1978-1983	117,063	UNK
Striped Bass x male White	1984-1989	516,296	FGL
Bass)	1991-1999	685,659	FGL
	2000	34,980	FGL
	2002	34,630	FGL
	2004	67,985	FGL
	2005	67,524	FGL
	2006	66,925	FGL
	2007	62,776	FGL
	2008	67,447	FGL
	2009	66,247	FGL
	2010	67,305	FGL
	2011	32,630	FGL
	2013	67,142	FGL
	2017	151,821	FRY
	2018	71,460	FGL
	Total	2,177,890	
Bass, Sunshine (female White	2014	293,267	FRY
Bass x male Striped Bass)	2015	253,175	FRY
	2016	279,050	FRY
	2017	323,000	FRY
	2020	195,020	FRY
	2021	64,661	FGL
	2022	102,675	FGL
	2023	8,092	FGL
	Total	1,518,940	
Bass, Largemouth	1970	100,000	UNK

Table 4 (continued)

Bass, Florida Largemouth	1979	100,215	FGL
	1993	230,621	FGL
	1994	232,436	FGL
	2001	232,002	FGL
	2014	224,664	FGL
	2015	79,396	FGL
	2017	52,030	FGL
	2018	59,179	FGL
	2019	90,669	FGL
	Total	1,301,212	
Green x Redear Sunfish	1971	5,000	UNK

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

Gear/target species	Survey objective	Metrics	Sampling objective
Electrofishing			
Largemouth Bass	Relative Abundance	CPUE–Total, CPUE–Stock	Practical Effort
	Size Structure	PSD, Length Frequency	Practical Effort
	Body Conditions	W_r	Practical Effort
	Genetics	% FLMB	N=30 fish
Bluegill [a]	Relative Abundance	CPUE–Total	RSE≤25
	Size Structure	PSD, Length Frequency	N ≥50 stock
Gizzard Shad [a]	Relative Abundance	CPUE–Total	RSE≤25
	Size Structure	Length Frequency	N≥50
	Prey Availability	IOV	N≥50
Gill netting			
Hybrid Striped Bass	Relative Abundance	CPUE–Total, CPUE–Stock	RSE≤25 for CPUE-Total only
	Size structure	PSD, length frequency	N≥50 stock-length
	Body Conditions	W_r	≥5 fish/inch group
	Age and Growth	Age Structure	All expired hybrids during sampling
White Bass	Abundance	CPUE–Total, CPUE–Stock	Practical Effort
	Size structure	PSD, Length Frequency	Practical Effort
	Body Conditions	W_r	Practical Effort
Blue Catfish	Relative Abundance	CPUE–Total and CPUE–Stock	Practical Effort
	Size Structure	PSD, Length Frequency	Practical Effort
	Body Conditions	W_r	Practical Effort

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

Gear/target species	Survey objective	Metrics	Sampling objective
Gill netting			
Channel Catfish	Relative Abundance	CPUE–Total and CPUE–Stock	Practical Effort
	Size Structure	PSD, Length Frequency	Practical Effort
Trap netting			
Crappie	Relative Abundance	CPUE–Total, CPUE–Stock	RSE≤25
	Size Structure	PSD, Length Frequency	N≥50 stock
	Body Conditions	W_r	N≥5 fish/inch group
Low-frequency electrofishing			
Blue Catfish	Relative Abundance	CPUE–Total, CPUE–Stock	RSE≤25
	Size Structure	PSD, Length Frequency	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 conditions can provide information on forage abundance, vulnerability, or both relative to predator density.

Gizzard Shad

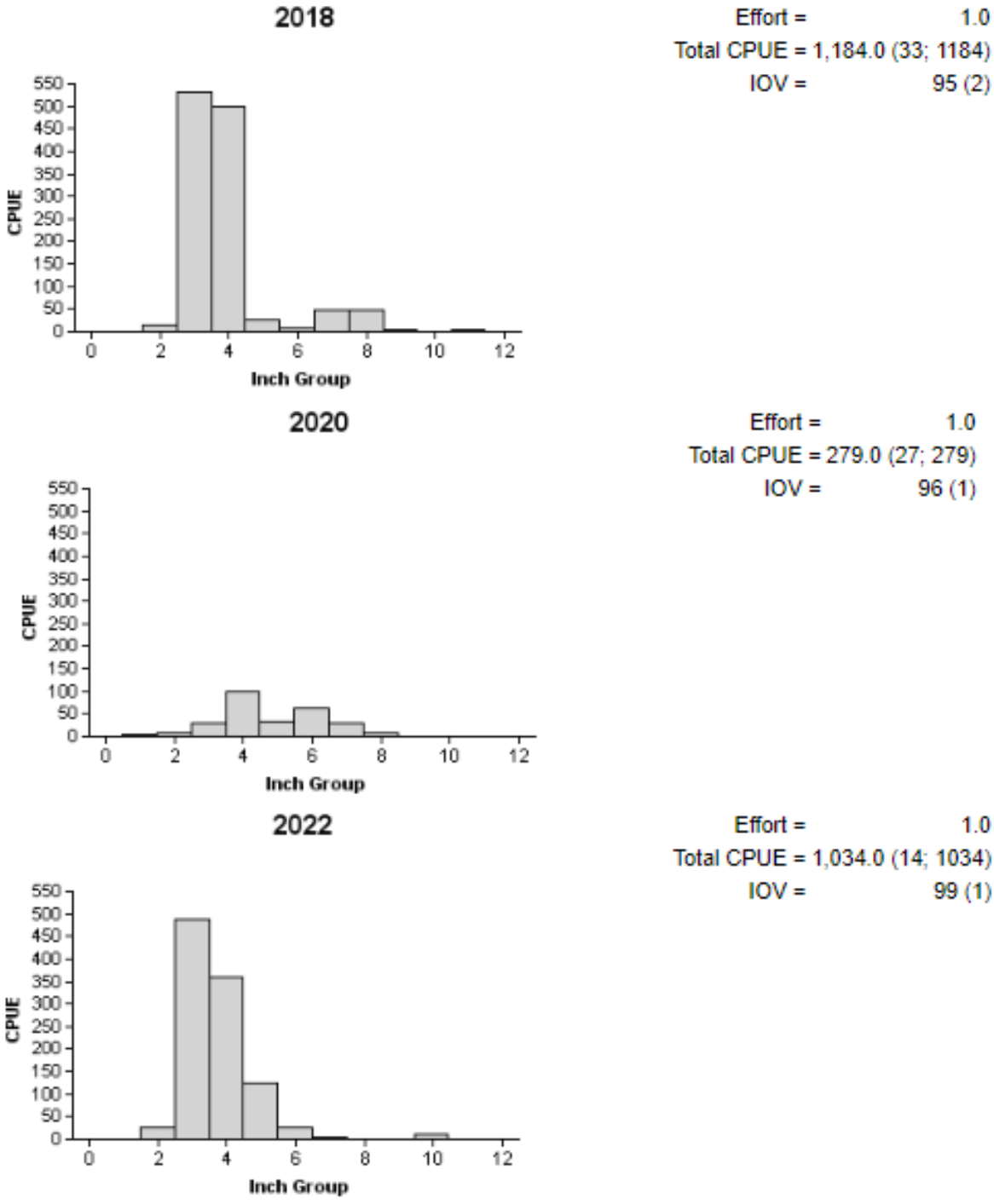


Figure 2. Number of Gizzard Shad caught per hour (CPUE) and population indices (RSE and N for CPUE and SE for IOV are in parentheses) for fall electrofishing surveys, Proctor Reservoir, Texas, 2018, 2020, and 2022.

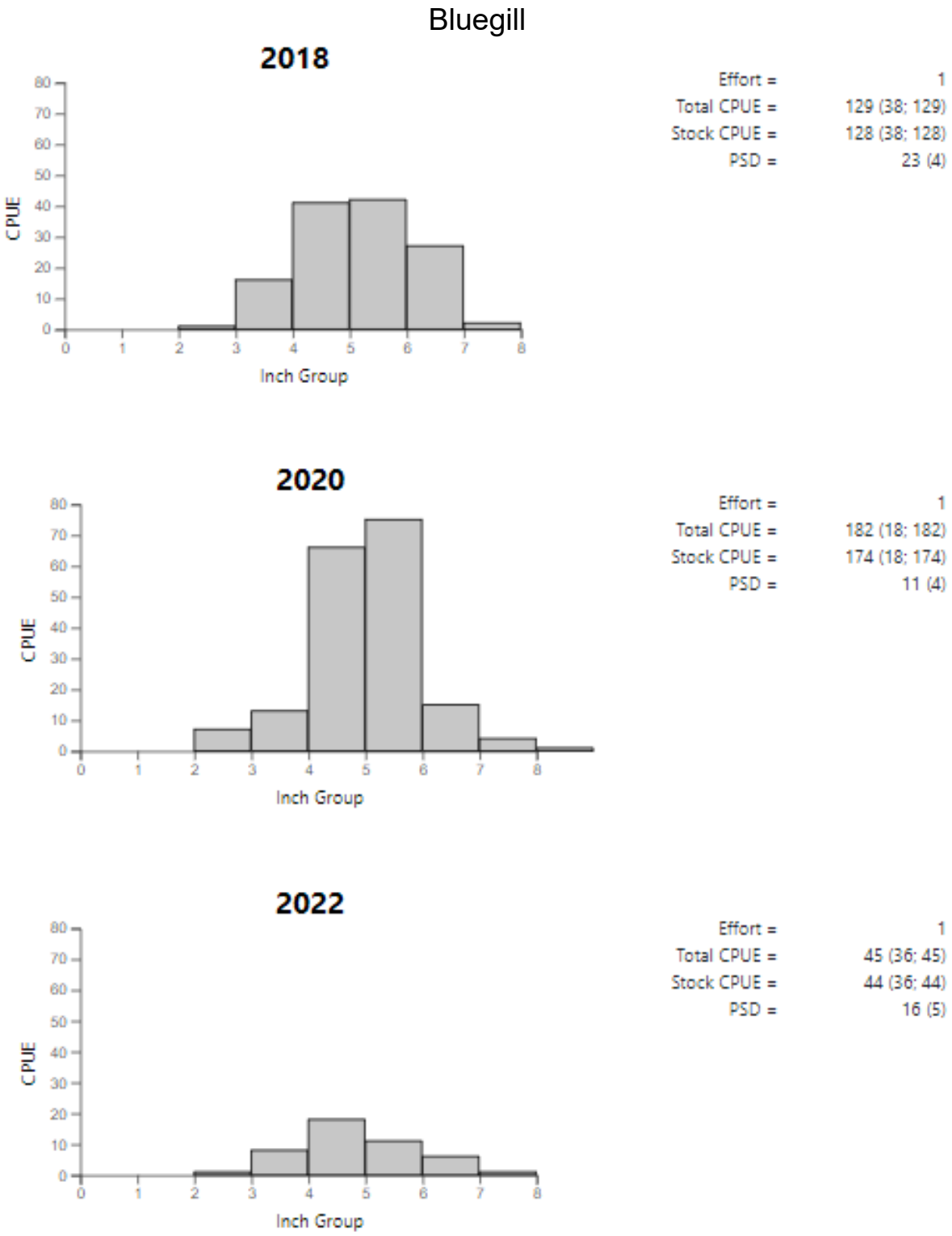


Figure 3. Number of Bluegill caught per hour (CPUE) and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for fall electrofishing surveys, Proctor Reservoir, Texas, 2018, 2020, and 2022.

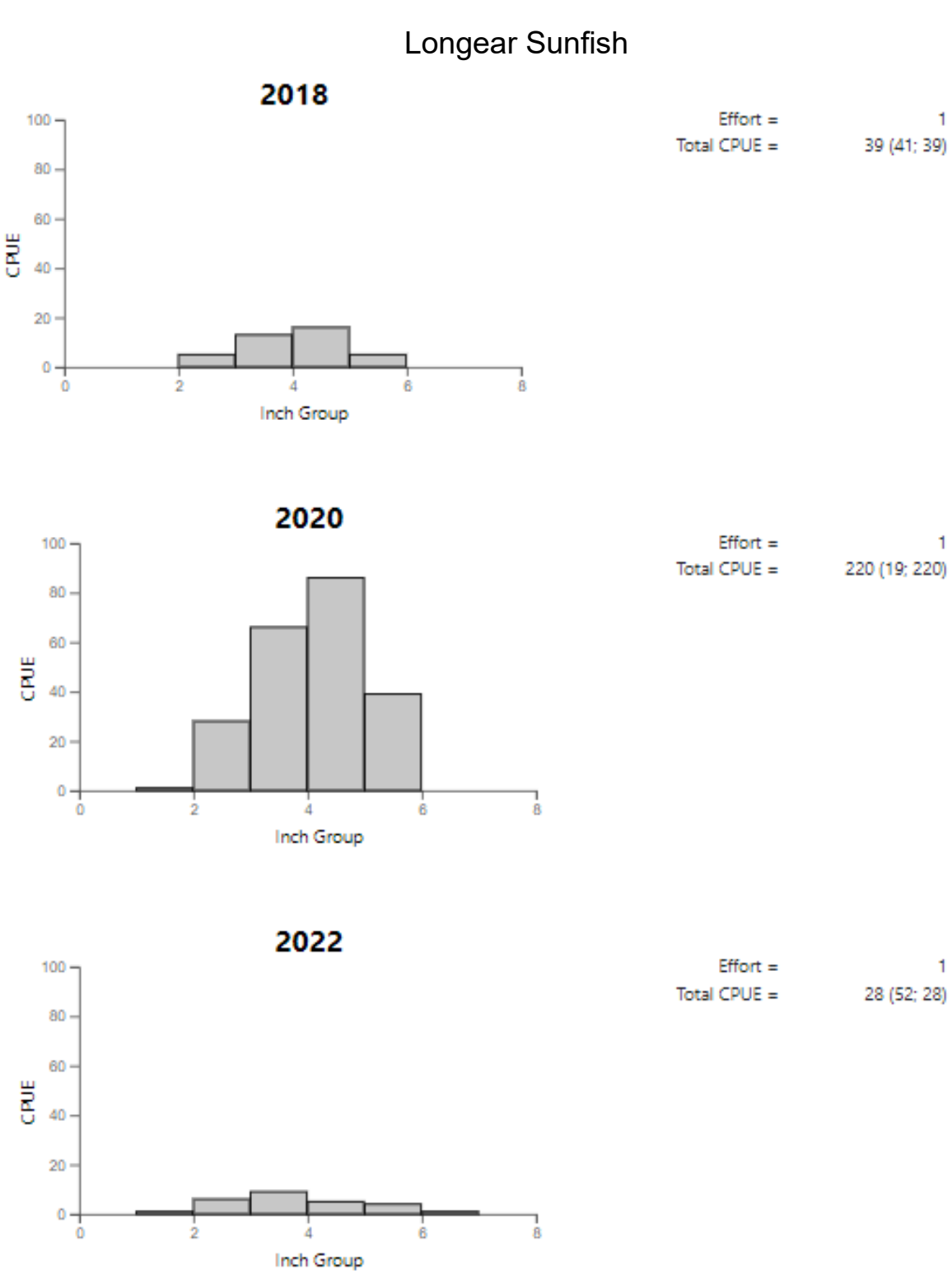


Figure 4. Number of Longear Sunfish caught per hour (CPUE) and population indices (RSE and N for CPUE are in parentheses) for fall electrofishing surveys, Proctor Reservoir, Texas, 2018, 2020, and 2022.

Blue Catfish

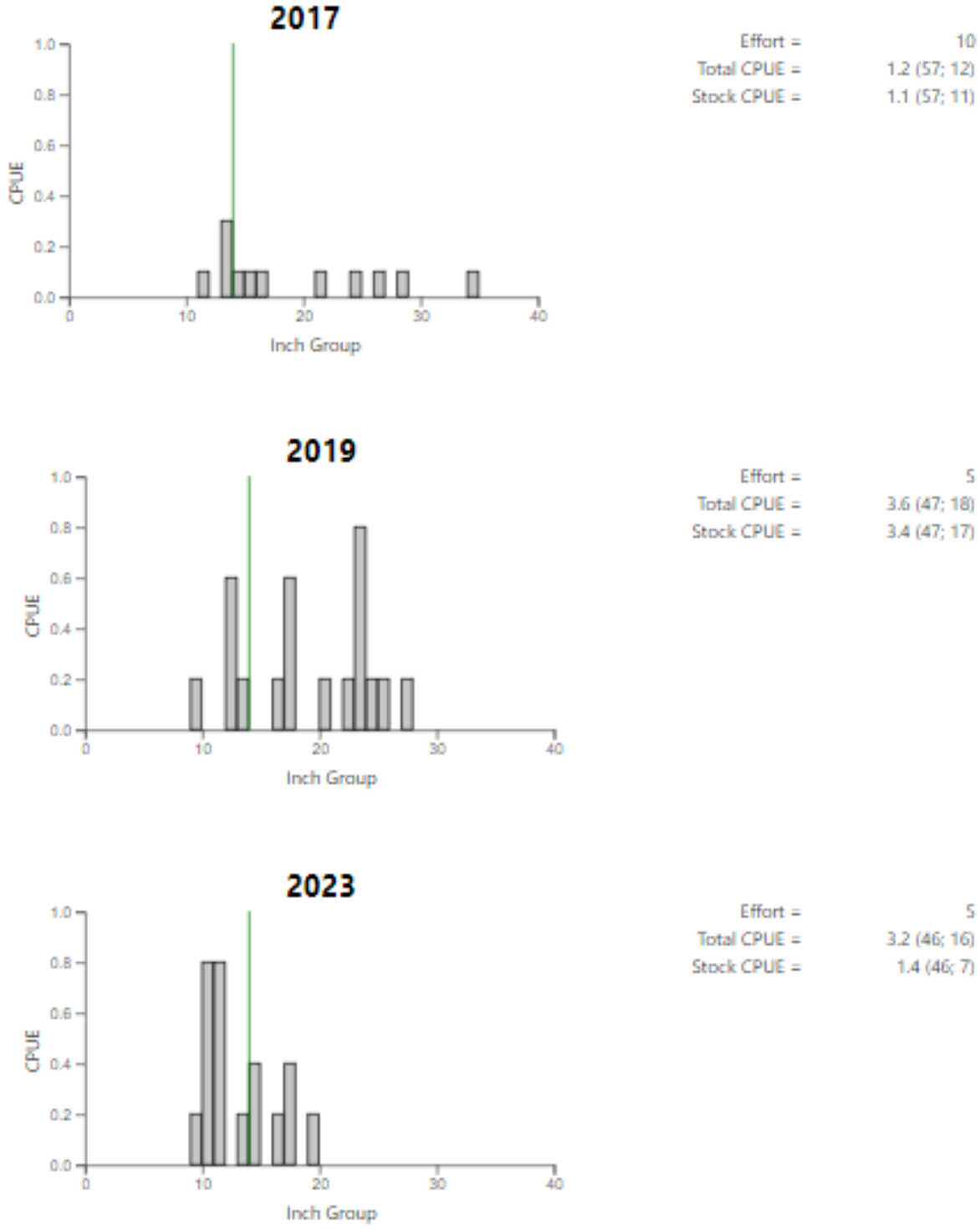


Figure 5. Number of Blue Catfish caught per net night (CPUE) and population indices (RSE and N for CPUE) for spring gill net surveys, Proctor Reservoir, Texas, 2017, 2019, and 2023. Vertical line denotes 14-inch minimum length limit.

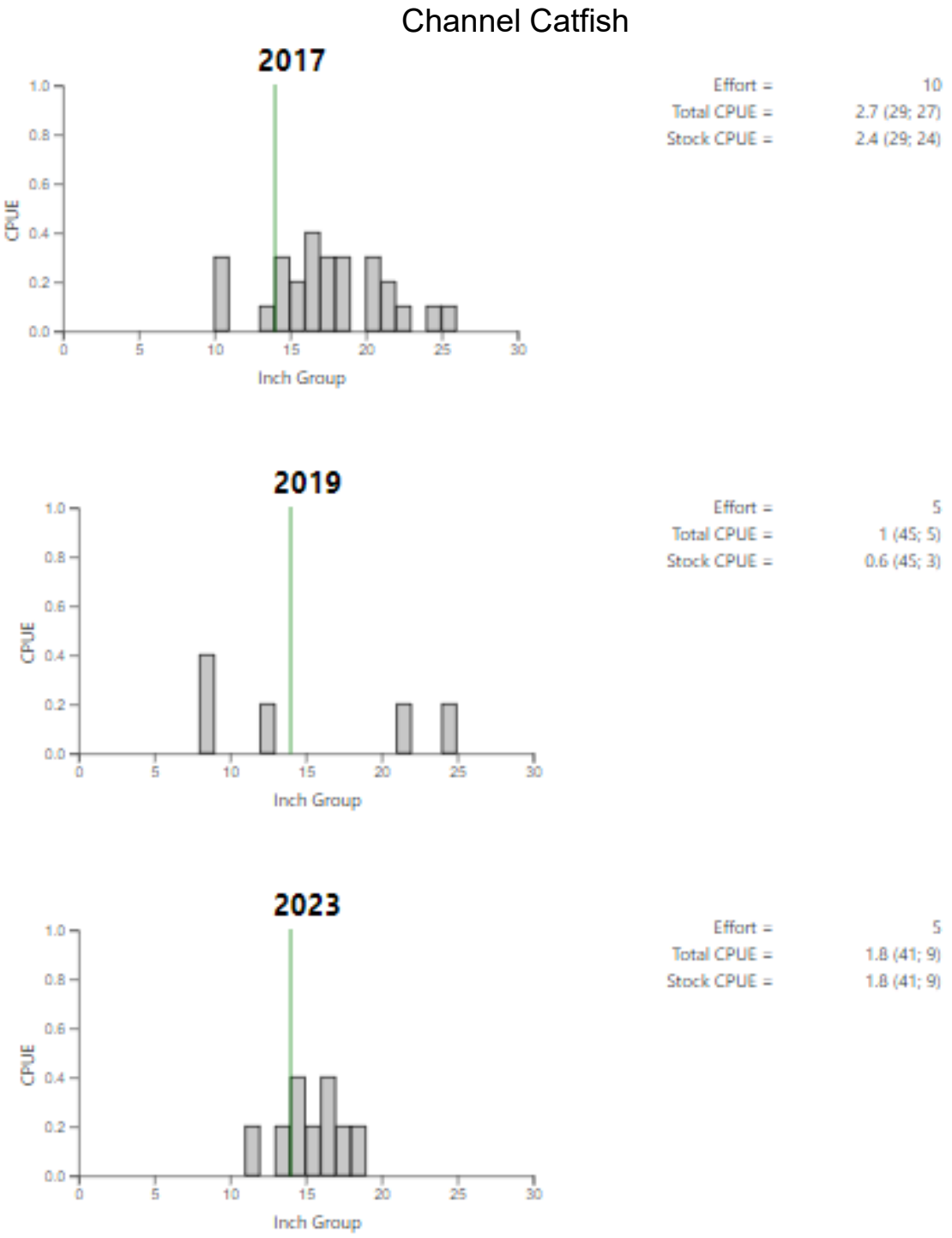


Figure 6. Number of Channel Catfish caught per net night (CPUE), and population indices (RSE and N for CPUE are in parentheses) for spring gill net surveys, Proctor Reservoir, Texas, 2017, 2019, and 2023. The vertical line denotes the 14-inch minimum length limit.

White Bass

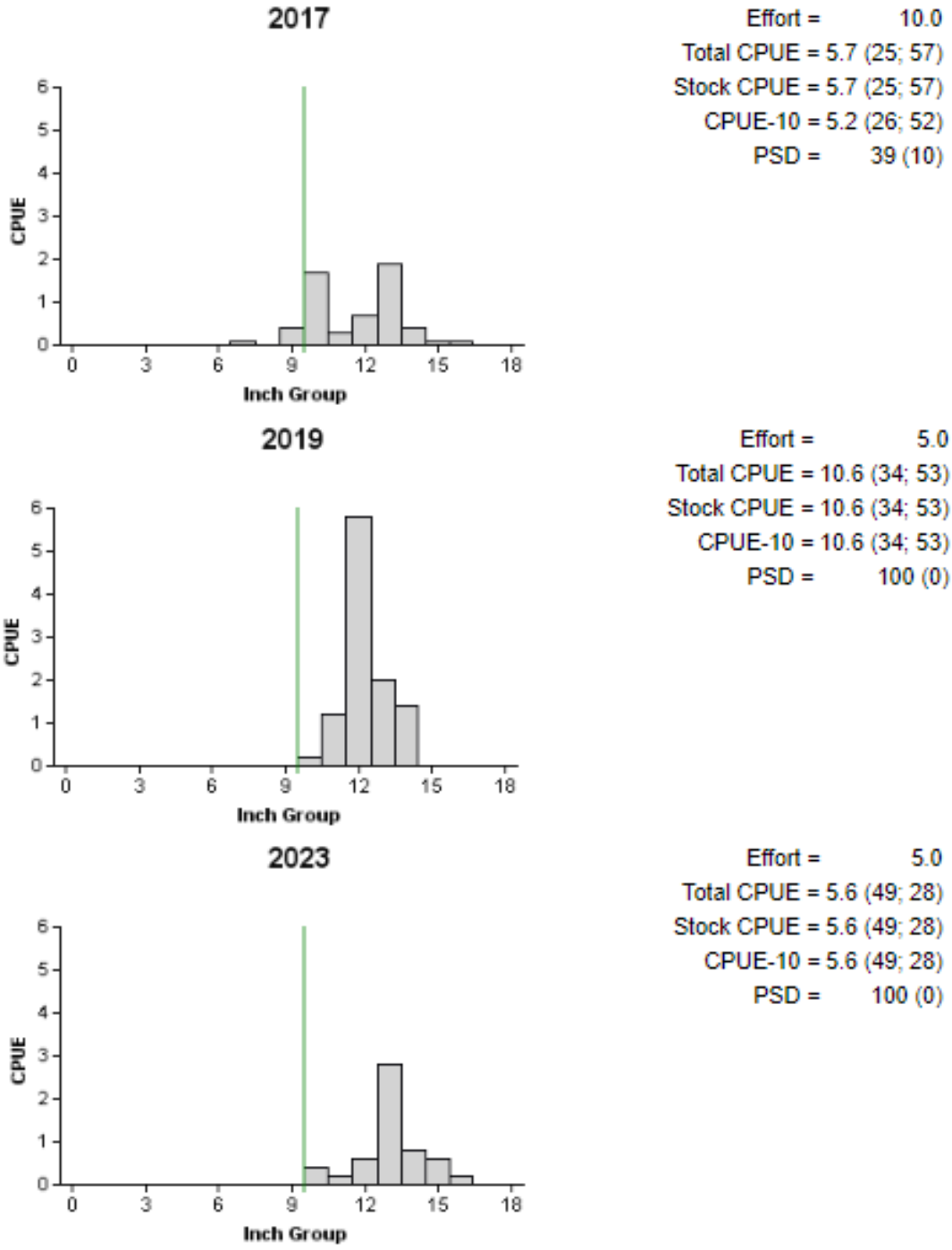


Figure 7. Number of White Bass caught per net night (CPUE, bars), and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for spring gill net surveys, Proctor Reservoir, Texas, 2017, 2019, and 2023. Vertical line denotes 10-inch minimum length limit.

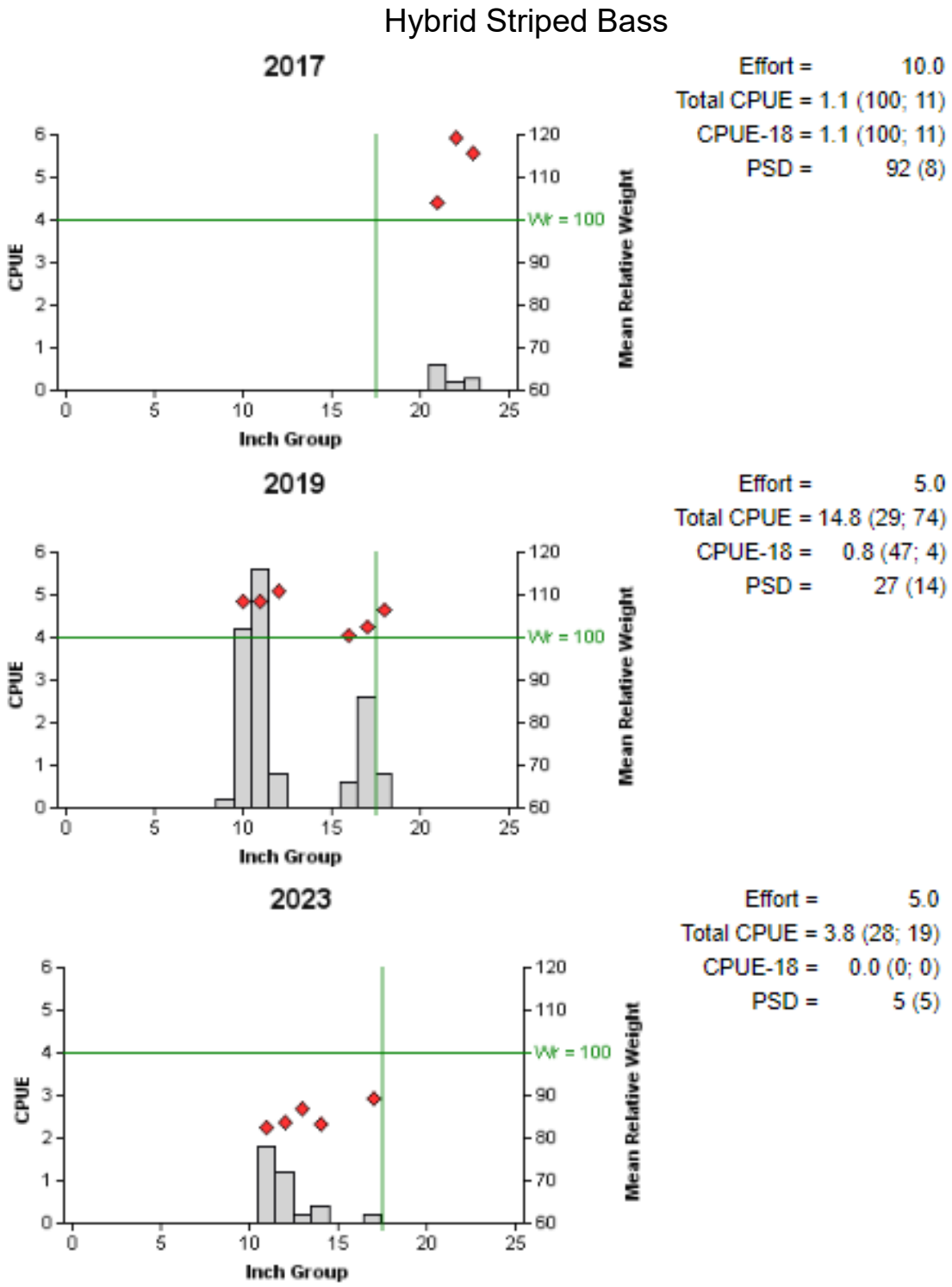


Figure 8. Number of Hybrid Striped Bass caught per net night (CPUE, bars), mean relative weight (diamonds) and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for spring gill net surveys, Proctor Reservoir, Texas, 2017, 2019, and 2023. The vertical line denotes 18-inch minimum length limit. Horizontal line denotes relative weight at 100.

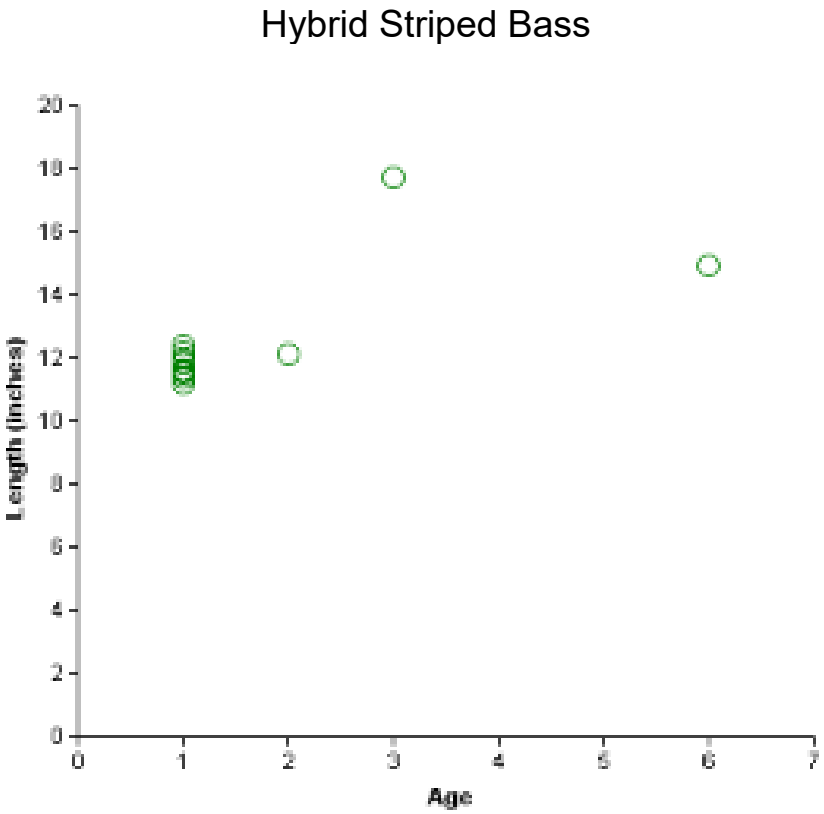


Figure 9. Lengths-at-age for Hybrid Striped Bass for spring gill net survey, Proctor Reservoir, Texas, 2023.

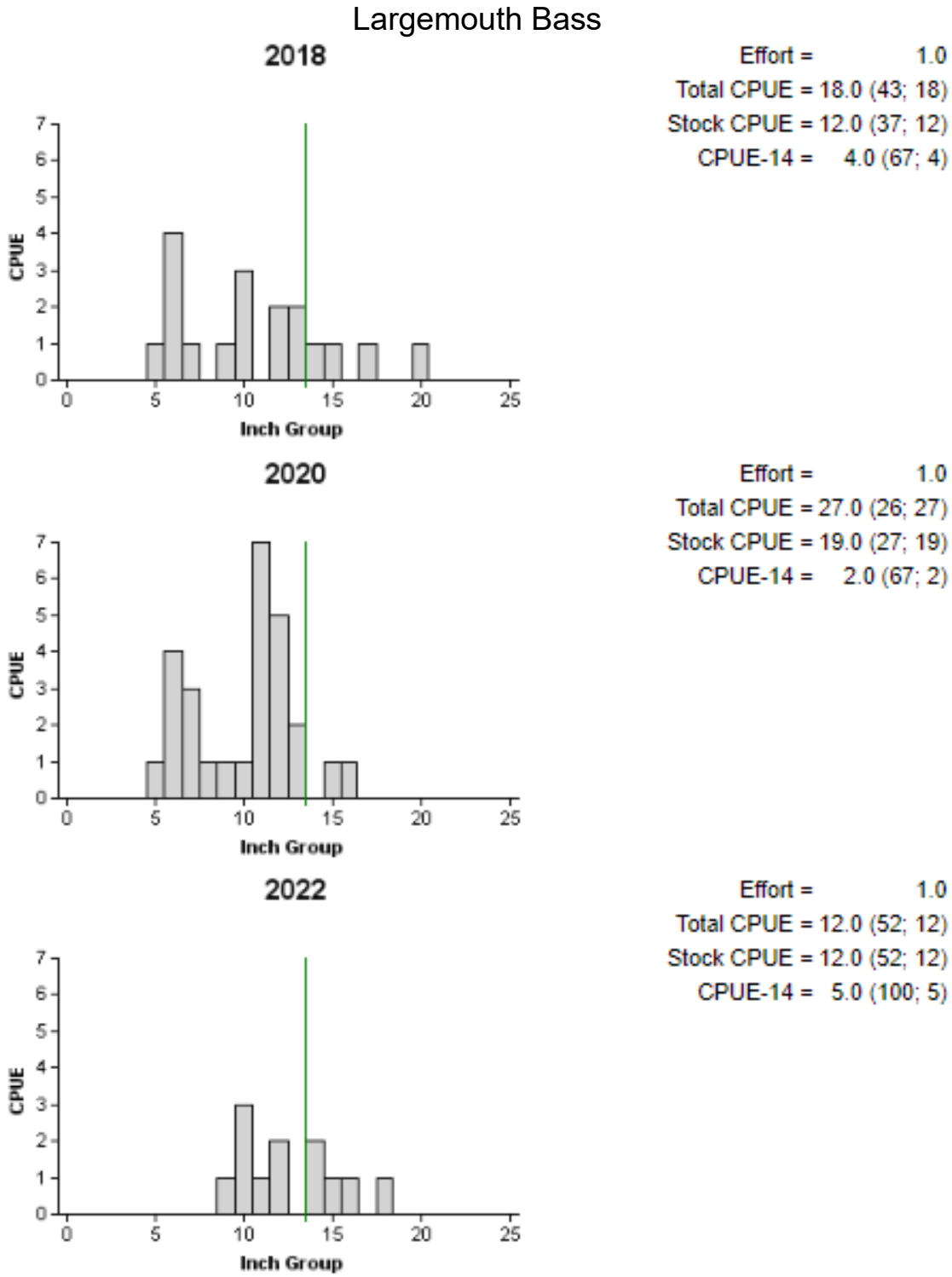


Figure 10. Number of Largemouth Bass caught per hour (CPUE, bars) and population indices (RSE and N for CPUE) for fall electrofishing surveys, Proctor Reservoir, Texas, 2018, 2020, and 2022. Vertical line denotes the 14-inch minimum length limit.

Table 6. Results of genetic analysis of Largemouth Bass collected by fall electrofishing, Proctor Reservoir, Texas. FLMB = Florida Largemouth Bass, NLMB = Northern Largemouth Bass, F1 = first generation hybrid between a FLMB and a NLMB, Fx = second or higher generation hybrid between a FLMB and a NLMB. Genetic composition was determined with micro-satellite DNA analysis.

Year	Sample size	Number of fish				% FLMB alleles	% pure FLMB
		FLMB	F1	Fx	NLMB		
2010	47	3	7	37	0	56.0	6.4
2018	17	8	0	9	0	80.4	47.1
2022	12	3	0	9	0	75.0	25.0

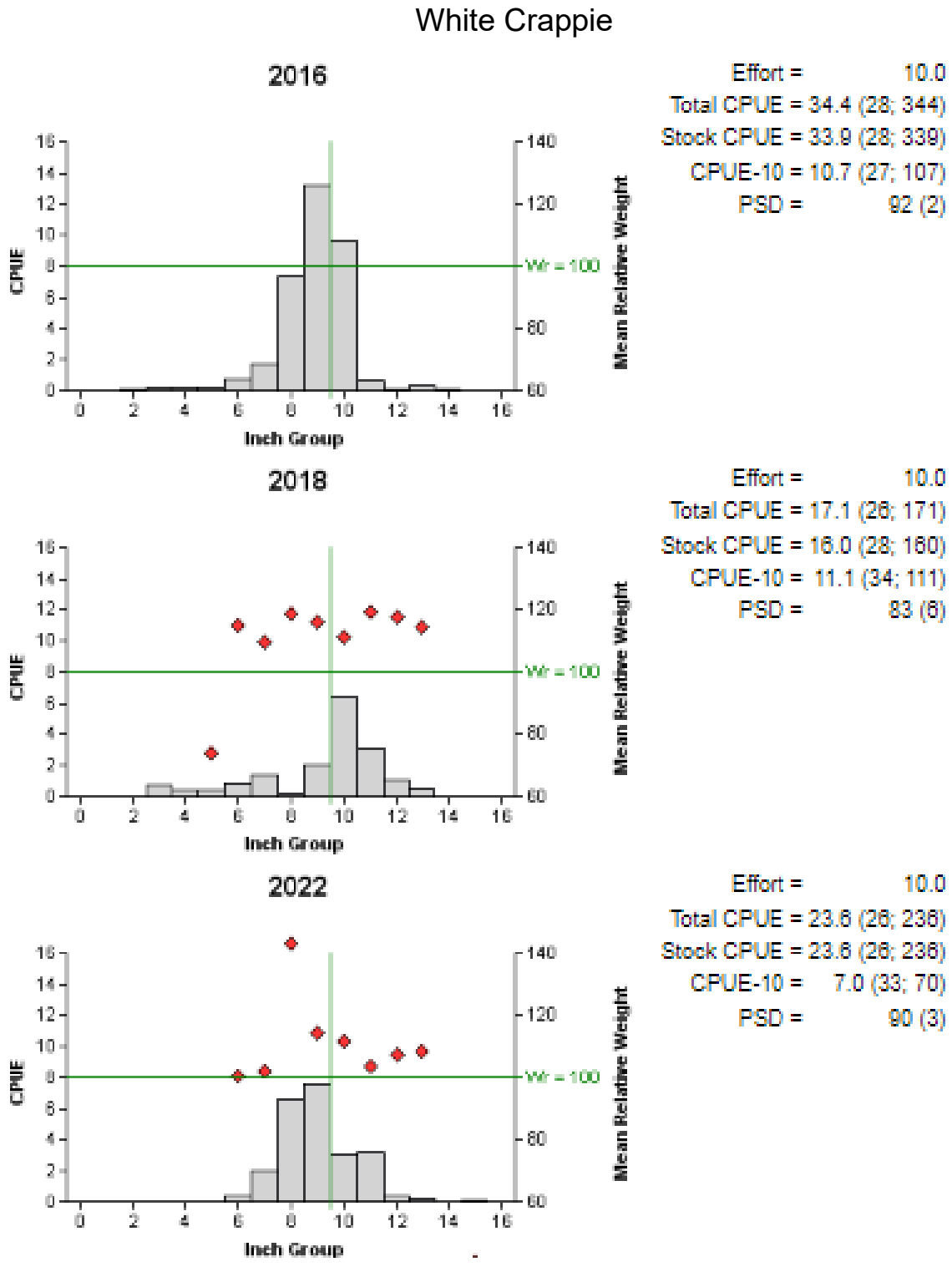


Figure 11. Number of White Crappie caught per net night (CPUE, bars), mean relative weight (diamonds), and population indices (RSE and N for CPUE and SE for size structure are in parentheses) for fall trap netting surveys, Proctor Reservoir, Texas, 2016, 2018, and 2022. The vertical line indicates the 10-inch minimum length limit. Horizontal line denotes relative weight at 100.

Proposed Sampling Schedule

Table 7. Proposed sampling schedule for Proctor Reservoir, Texas. The survey period is June through May. Gill netting surveys are conducted in the spring, while electrofishing and trap netting surveys are conducted in the fall. Scheduled survey denoted by X.

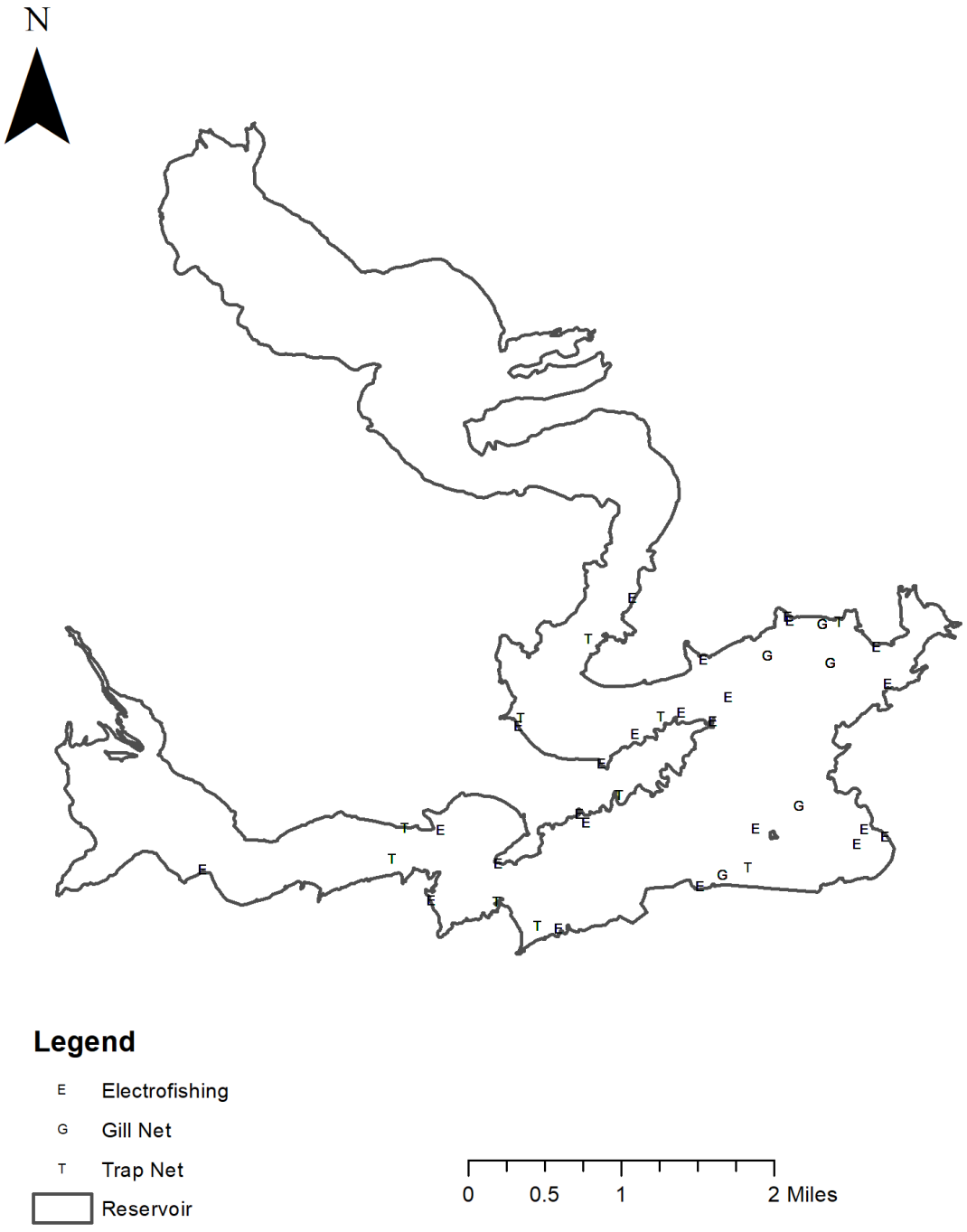
	Survey year			
	2023-2024	2024-2025	2025-2026	2026-2027
Angler access				X
Vegetation				X
Electrofishing – Fall				X
Electrofishing – Low frequency				X
Tandem hoop netting				X
Trap netting				X
Gill netting				X
Report				X

Appendix A

Number (N) and catch rate (CPUE; RSE in parentheses) of all target species collected from all gear types from Proctor Reservoir, Texas, 2022-2023. Sampling effort was 5 net nights for gill netting, 10 net nights for trap netting, and 1 hour for electrofishing.

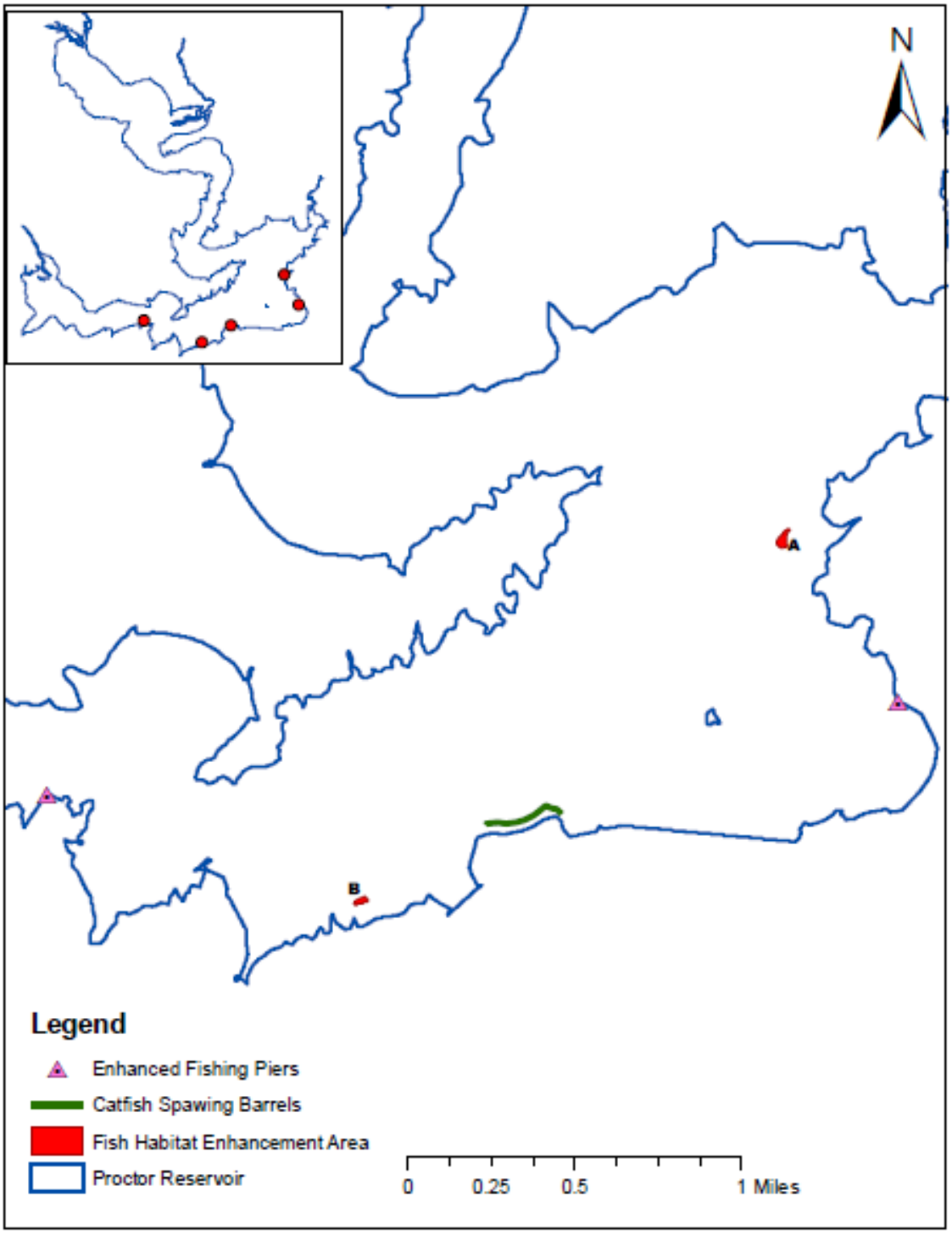
Species	Gill Netting		Trap Netting		Electrofishing	
	N	CPUE	N	CPUE	N	CPUE
Gizzard Shad					1,034	1,034.0 (14)
Threadfin Shad					132	132.0 (42)
Inland Silverside					6	6.0 (72)
Blue Catfish	16	3.2 (46)				
Channel Catfish	9	1.8 (41)				
Hybrid Striped Bass	19	3.8 (28)				
White Bass	28	5.6 (49)				
Hybrid Sunfish					1	1.0 (100)
Bluegill					45	45.0 (36)
Longear Sunfish					28	28.0 (50)
Largemouth Bass					12	12.0 (52)
White Crappie			236	23.6 (26)		
Black Crappie			7	0.7 (60)		

Appendix B



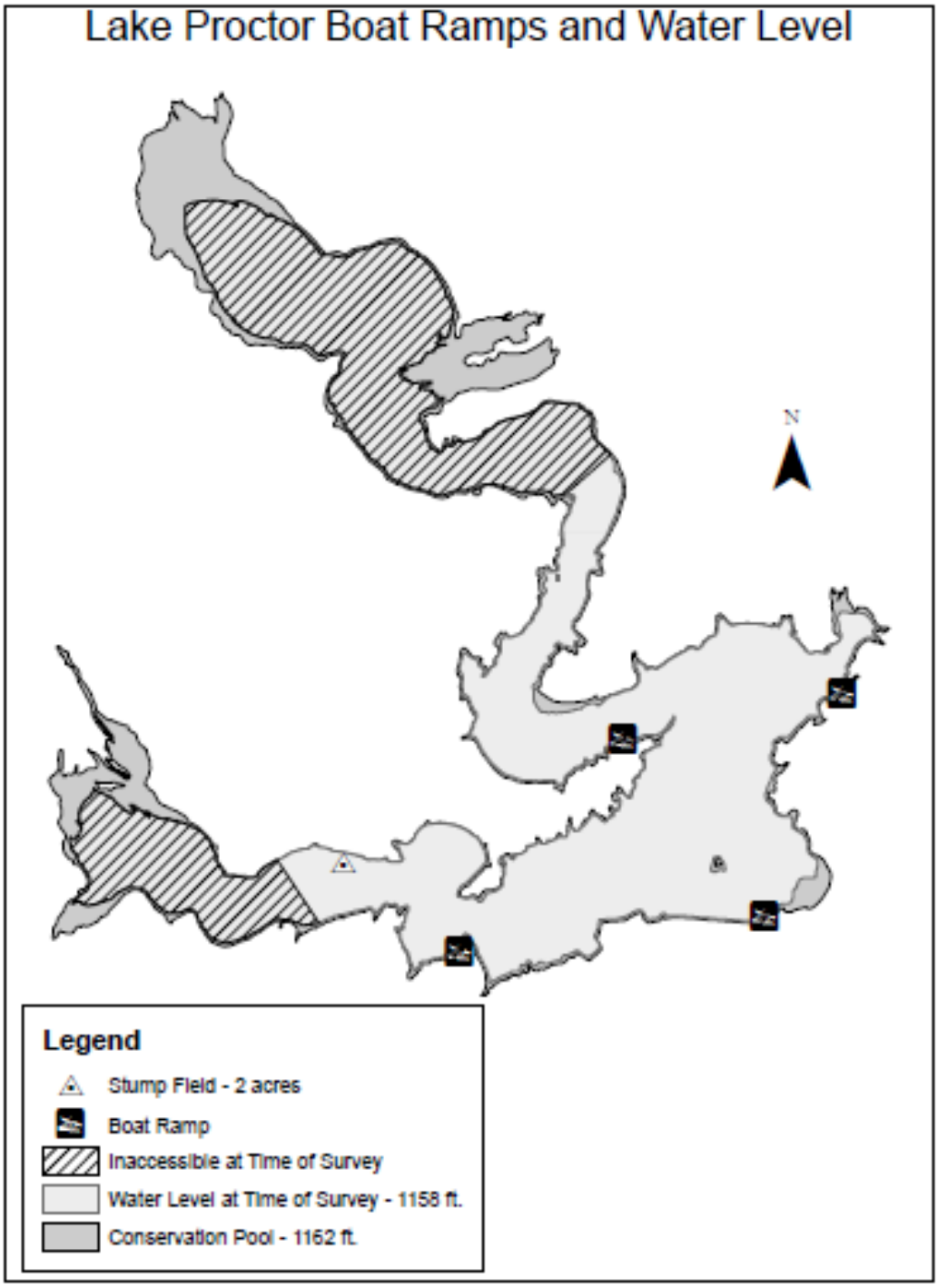
Location of gill netting (G), electrofishing (E), and trap netting (T) stations, Proctor Reservoir, Texas, 2022-2023. The water level was 7-10 feet below conservation pool elevation for these surveys.

Appendix C



Map of fish habitat enhancement locations, Proctor Reservoir, Texas, 2019 and 2021. Locations A and B were enhanced in 2019 and 2021. Catfish spawning barrel deployments and fishing pier enhancements were conducted in 2021.

Appendix D



Map of vegetation survey and boat ramp areas, Proctor Reservoir, Texas, 2023. Please note, multiple boat ramps are found at some of the locations depicted on the map.

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