LAKE FORT SMITH

ANNUAL RESERVOIR/WATERSHED REPORT 2021

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INTRODUCTION

Lake Fort Smith was originally impounded in 1933 and the impoundment created a 400 acre reservoir. The Lake was then combined with Lake Shepherd Springs in 2007 which expanded the reservoir to 1,519 acres with an average depth of 58 feet. The Fort Smith Utilities, Environmental Quality - Watershed Department conducts an annual fishery assessment on the Lake Fort Smith reservoir to assess the quality of raw water. The raw water from the reservoir is drawn into the City of Fort Smith's water treatment facilities to supply water to the surrounding areas of Fort Smith.

Changes in fish population and biological community structures can reflect shifts in water quality. Monitoring the overall fisheries of Lake Fort Smith is one (1) tool utilized by the Fort Smith Utilities to ensure quality drinking water. A combination of active and passive sampling techniques is used to evaluate reservoir's biological communities through the generation of specific indices. Indices are evaluated using an array of different analysis to follow changes in structure, abundance, and condition of target fishes. The degree of monitoring effort varies annually and is typically a function of weather and water conditions.

SITE SELECTION

Passive Sampling

Passive sampling is a type of sampling that is stationary. This type of sampling is used for fish that are swimming into a specific location for a specific period of time. The City of Fort Smith utilizes trap nets and experimental gill nets to conduct passive sampling techniques.

Due to the reservoir's physical characteristics, sample site selection for passive collection techniques is difficult at best. The long narrow valley has extremely steep slopes which limits the placement of netting sites. The areas that are deemed most suitable for passive sampling sites are those that are naturally occurring geographical features. For instance, these can be gently occurring slopes off the shoreline, channels of the lakes, and the mouths of tributaries of the lake are often used for passive sampling sites. Some sites are selected off of structure as well, this can include sunken brush piles, old road accesses, and rock and gravel bars.

Netting sites are selected for ease of deployment while being mindful of submerged debris. The presence of large quantities of submerged woody debris can limit the placement of trap nets and experimental gill nets. Gill nets are typically deployed on the North-West reservoir shoreline, where reduced surface and sub-surface debris is encountered. Historical data suggests there to be an abundance of fish movement within the old Lake Shepherd Springs channel, thus ensuring collections that reflect current fishery conditions. Trap nets are deployed north of the buoy line on the West side of the reservoir and the North-East shoreline in the lacustrine portion of the reservoir.

Due to the limited number of sites that were available for deployment of passive sampling techniques, a random sampling approach could not be used for site selection.

Active Sampling

Active sampling is a type of sampling that occurs where the gear being used is in motion for a specific period of time rather being stationary for a specific period of time. The City of Fort Smith utilizes boat electrofishing and backpack electrofishing for active sampling techniques. Active sampling is conducted over the entire length of the reservoir. To ensure independence and omit bias, the City of Fort Smith conducts its electrofishing procedures through a random sampling approach.

METHODS

Trap Nets

Standard trap nets require a relatively flat, hard substrate for pot placement and a clean bottom for leader/wing deployment. Nets are set perpendicular to the shore line. The nets are set and contents emptied every 24-hour after deployment. Nets are typically deployed on the Monday of the sampling week, with collections being made on the following days and final net retrieval on Friday. Attempts are made to sample crappie populations early in the season to minimize the effects of post spawn individuals on fish condition indices. Fish are identified to species level, measured, weighed (game fish only) and returned to the water. Some incidental mortality is typically experienced and can be expected while conducting any fishery study. Catch-per-unit-effort, relative weight (Wr) analysis and percent composition indices are calculated from the recorded data. For evaluation purposes, target fish species are grouped into 25-millimeter increments.

Standard trap net dimensions include: two (2), 3'x6', 5/16" diameter steel frames set 2.5-foot apart. Netting material consists of 2-inch square, No. 150 L knotless, and treated nylon. Four (4) 2.5' diameter steel hoops, 24-inches apart, lead to the cod end with a drawstring closure. The 50-foot long leader is constructed of the same net material and has a depth of 3.5 feet. A float line fitted with 2 inch by 1.5 inch corks and a sinker line fitted with 1.5-ounce weights keeps the leader net horizontally extended.

Experimental Gill Nets

Experimental gill nets require a relative flat or gently sloping substrate, and a clean bottom to prevent excessive damage to the mono-filament netting. Experimental gill nets are 91.4 meters in length, 2.4 meters in height and have panels of increasing mesh size (¾ to 2 inches). The nets are set perpendicular to the shore line, stretched taught by boat and anchored to the substrate. Nets are set and the contents are emptied every 24-hours after deployment. Nets are typically deployed on Monday of the sampling week, with collections being made on the following days and final net retrieval on Friday. Fish are identified to species level, measured, weighed (game fish only) and returned to the water. Catch-per-unit-effort and percent composition of dominant taxa are calculated. For evaluation purposes, target fish species are grouped into 25-millimeter increments.

Boat Electrofishing

Electro-shocking is conducted through the use of a boat mounted Smith-Root Incorporated®, 5.0 Electro-fishing System, powered by a Honda® GX340, 11.0 horsepower gasoline generator. A single standard anode boom, with a 40-inch diameter array is mounted to the front of the boat. Lighting mounted on the front of the boat, is powered by a Honda® EM650 gasoline generator and converter box combination. Sampling is typically conducted during night time conditions. When the unit is operational, fish are stunned and drawn to the electric field at the front of the boat where they are retrieved using long handled dip nets. Upon collection, the fish are placed in two (2) 30-gallon tubs, partially filled with reservoir water. At the end of each collection period, the fish are identified to species, measured (mm) and weighed (g) (game fish only). The fish are then released in an area that will not influence future sampling numbers. Catch-per-unit-effort (CPUE), relative weight analysis, Proportional Stock Density (PSD), Relative Stock Density (RSD) and percent composition of dominant taxa are calculated. For evaluation purposes, target fish species are grouped into 25-millimeter length increments. A random sampling approach has been adopted to better ensure representative fishery collections. Lake Fort Smith is divided into 40, 600-meter sampling sites. A minimum of 14 sites must be electro-shocked, for a period of 10-minutes each (pedal down time), to ensure a random sample. Prior to sampling, sites are selected from a random numbers table. Sites not conducive to sampling efforts, due to shallow or extremely deep water, are excluded from the selection and a substitute site is chosen. Due to the large number of sites and in case of equipment problems, the 14-sites can be sampled over the course of two (2) nights.

Backpack Electrofishing

Backpack Electroshocking is conducted in three streams in the Lake Fort Smith Watershed. The species of stream fish present are a good indication of water quality depending on the tolerance value assigned to certain species. A Smith-Root Backpack Electro-shocker is used to

stun the fish for collection. Two (2) 20 minute runs are done on each stream and the fish are identified to species level after each run. Fish collected are identified and released on site after identification. Data is then analyzed and an Index of Biological Integrity (IBI) trend analysis is done based on a predetermined set of values for each species. The IBI analysis will give a stream condition number that will help determine stream health.

Surber Net

Aquatic Macro-invertebrates are key indicators of stream health. The City of Fort Smith samples twice a year for macro-invertebrates in all the streams in each watershed. Three (3) samples are taken at each site at riffles with enough flow to carry the invertebrates into the surber net. The surber net is 12 inches by 12 inches and is placed in a spot determined by the sampler to have sufficient cobble and flow. The sampler then rubs each rock in the one (1) square foot area enclosed by the surber net, in order to release all clinging invertebrates. After all the rocks are rubbed sufficiently, a garden shovel is used to disturb the stream bed for any invertebrates that are buried. The net is then emptied and the macroinvertebrates are fixed for picking at a later date. The organisms are then picked and preserved and sent off to an outside entity for identification and enumeration. The data received is then compiled and four (4) different metrics are used to obtain a "Stream Condition" factor. Each of the four (4) metrics is on a scale of one (1) to five (5). Five (5) being the best score for each metric and a 20 being the best stream condition factor.

Algal Enumeration

Algae enumeration is done weekly on both reservoirs. A secchi disk is lowered into the water and used to determine the visible photic zone. This number is then divided by two (2) to obtain the ¼ zone depth. Samples are collected in a Wildco Inc. 2.2L PVC Beta Plus water bottle that is lowered to a depth determined by the secchi disk. One (1) sample is collected on Lake Fort Smith at the LFS 01 site. Another sample is taken below the Lake Fort Smith dam at a raw water outlet. The samples are then taken to the lab and 100 mL of the sample is measured out and concentrated down to 20 mL where a one (1) mL sample is then taken and placed into a SR™ counting chamber. After the algae are counted the data is entered into a database to obtain phytoplankton units per liter and MIB & Geosmin (Taste and Odor) levels. This helps to better track trends and predict blooms.

Water Quality

Phosphorous, Nitrogen, and Chlorophyll-α are three (3) water quality indicators tested by the City of Fort Smith. Phosphorous samples are obtained by a surface grab at pre-determined sites that extend the length of the reservoir. Nitrogen sampling is done on a monthly basis at two (2)

sites on both reservoirs. One sample is taken at the site nearest the intake structure while the other sample is taken at the site that is at the uppermost part of the reservoir. One (1) Chlorophyll-α samples are taken at the site nearest the intake structure. One (1) sample is determined by the secchi disk depth obtained for the algae sample. Phosphorous and nitrogen samples are an indicator of nutrient loading from the reservoir's watersheds and elevated levels can lead to uncontrollable algae blooms. Chlorophyll-α is used to determine algae levels and can give you an insight into the reservoirs trophic status.

Fish and Water Quality Data

A total of 22 fish species were collected during the 2021 sample period within the Lake Fort Smith reservoir. The following data is a compilation of all of the City's sampling techniques utilized out on the reservoir of Lake Fort Smith. By combining all of the data that we have obtained, we gain an overall structure of the fisheries within the lake. Lake Fort Smith has rough, game, and forage fish that are present in the reservoir. Out of the 22 species that were captured, 9 of these were considered game fish species. This is comprised of three (3) species of the genus *Micropterus* (Black Basses), two (2) species of the genus *Pomoxis* (Crappie), two (2) species of the genus *Ictaluridae* (Catfishes), one (1) species of the genus *Stizostedion* (Pikeperches) and one (1) species of the genus *Morone* (Striped basses). A complete species list is shown in Appendix B. The forage base also represented 7 out of the 22 species in composition and included five (5) species of the genus *Lepomis* (Panfishes), one (1) of the genus *Dorosoma* (Gizzard shads), one (1) *Labidesthes* (Brook silversides). Rough fish has the least amount of species in comparison to the game and forage fish. Rough fish made up 6 of the 22 species in the total composition. The species present on the rough fish is one (1) species of the genus *Hypentelium* (Hog suckers), three (3) *Moxostoma* (Redhorse suckers), one (1) *Cyprinus* (True carps), and one (1) *Lepiosteus* (Gar). Figure 1 shows the average percentages for the representative species in the rough (8%), game (68%), and forage fish (24%) categories for the years of 2018-2021. Figure 2 shows the average percent fish totals from years 2018-2021 in the game, rough, and forage fish categories. Of all 4 years, game fish has been higher than both the rough and forage fish, while the rough and forage fish continue to fluctuate between each other.

Figure 1: Four Year Species % Of Abundance

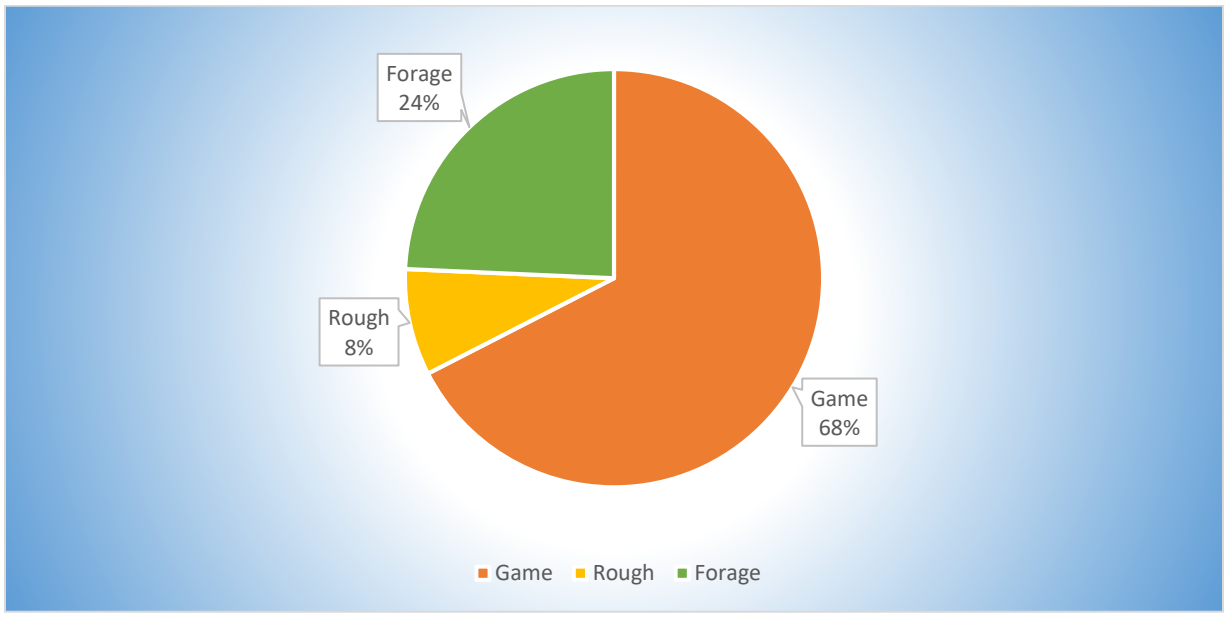
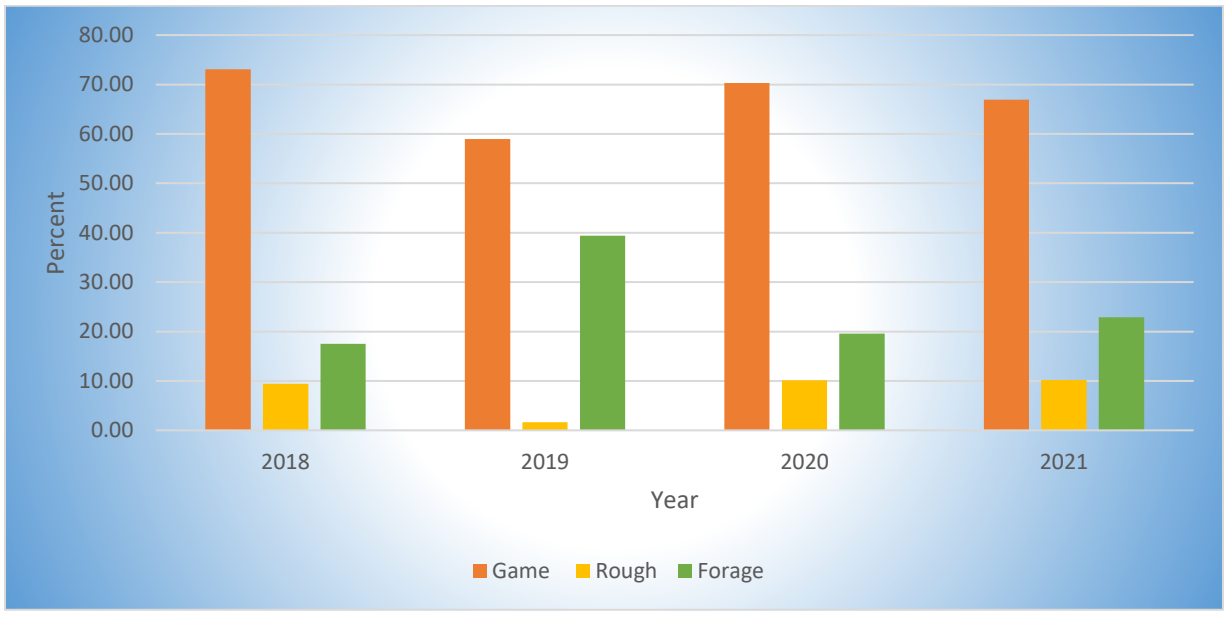


Figure 2: Four Year Abundance Percentage Trend



Trap Net

Trap net sampling was conducted during the months of April through May with a total of 37 net nights sampled throughout the year of 2021. During the last four years, a total of 1344 *Pomoxis* (crappie) species were collected, of that number *Pomoxis nigromaculatus* (black crappie) comprised 51.9% of the population and *Pomoxis annularis* (white crappie) were the remaining

48.1%. PSD (proportional stock density) is based on the quality length class (≥203mm) relative to stock length (127mm). PSD-P (proportional stock density- preferred) is based on the preferred length class (≥254mm) relative to stock length. Fluctuations of these values are attributed to the number of fish caught in total as well as those caught below the 127mm threshold and the proportion of those fish that are at or larger than the 254mm preferred length class, respectively. Catch-per-unit-effort (CPUE) can be defined as "the number or weight of fish captured within a defined unit of sampling or fishing effort", is summarized in Table's 1 and 2 for white and black crappie respectively. The 2021 sampling experienced the greatest CPUE's for white crappie with a value of 0.36 fish per hour while the highest CPUE for black crappie was 0.39 during 2018. The lowest CPUE for white crappie was during the 2018 sampling season with a value of 0.06 fish per hour. The lowest CPUE for black crappie was during the 2019 sampling season with a value of 0.09 fish per hour. The average weight for white crappie over the past four years is 122g with an average length of 215 mm. Black crappie were slightly larger in the reservoir with an average weight for the past four years of 148g and an average length of 220mm. The Wr seems to have stayed consistent over the past four years for both crappie species in the reservoir.

TABLE 1. White Crappie Trap Net Summary Of Statistics

Year	Net Nights	Sample Size (n)	Mean Length (mm)	Mean weight (gm)	CPUE	PSD	PSD-P
2018	32	45	206	106	0.06	58	13
2019	37	211	208	113	0.24	54	6
2020	27	70	227	141	0.11	90	15
2021	37	321	219	130	0.36	83	11

TABLE 2. Black Crappie Trap Net Summary Of Statistics

Year	Net Nights	Sample Size (n)	Mean Length (mm)	Mean weight (gm)	CPUE	PSD	PSD-P
2018	32	296	223	166	0.39	65	18
2019	37	80	218	141	0.09	63	19
2020	27	67	221	138	0.10	87	4
2021	37	254	219	147	0.29	75	10

Figure 3: White Crappie Four Year WR Trend

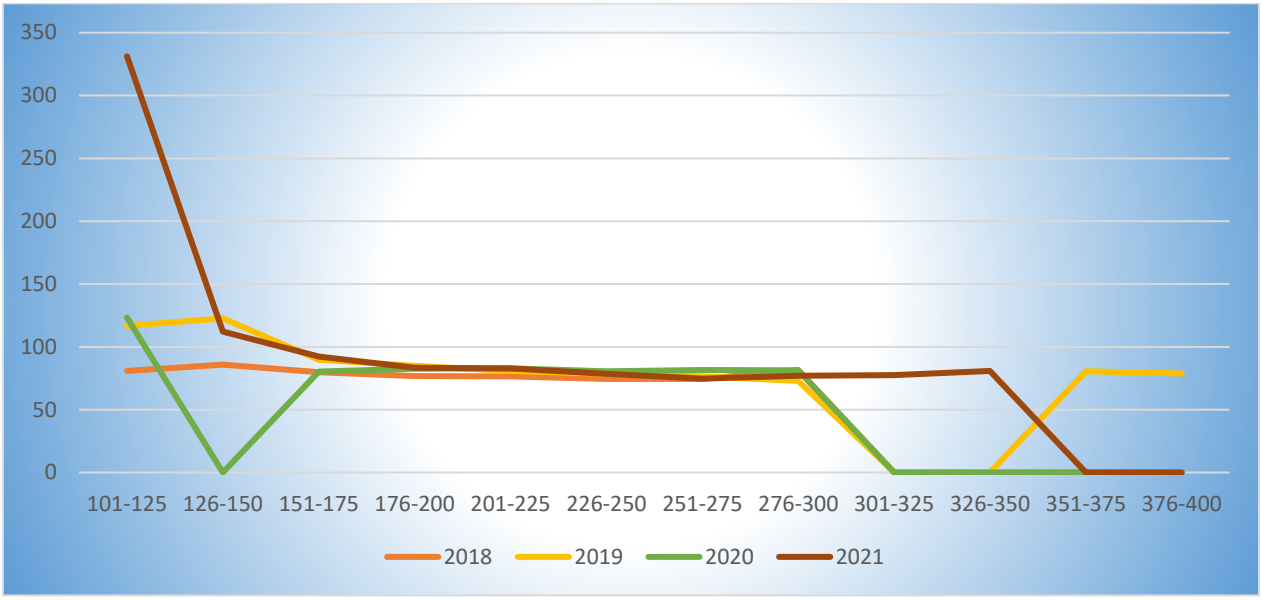
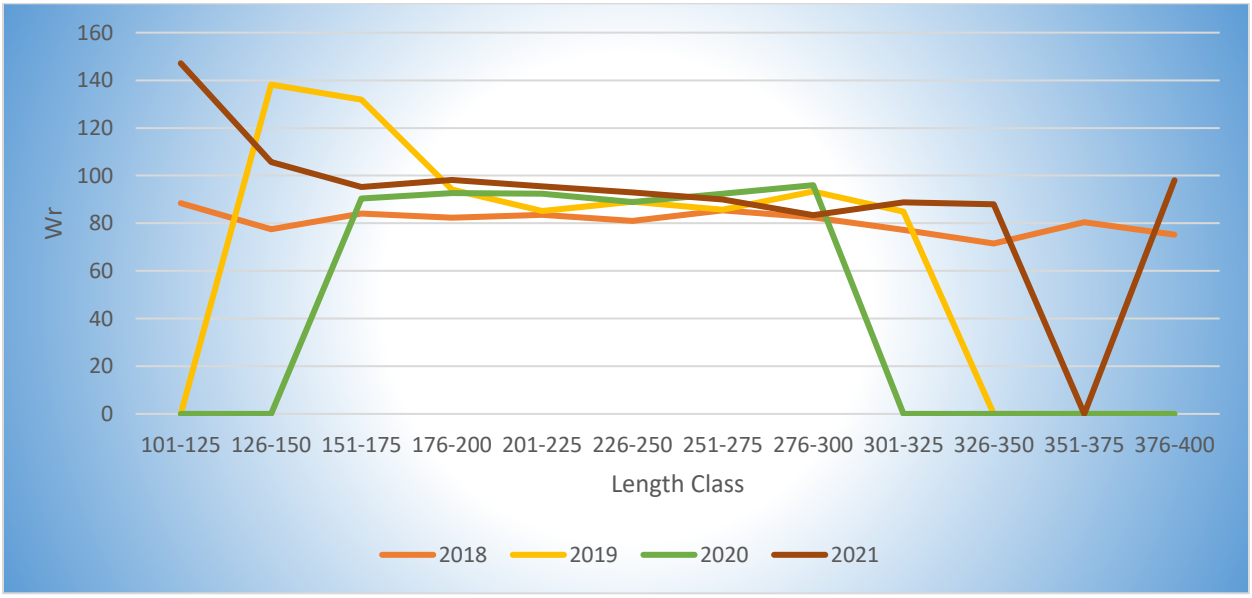


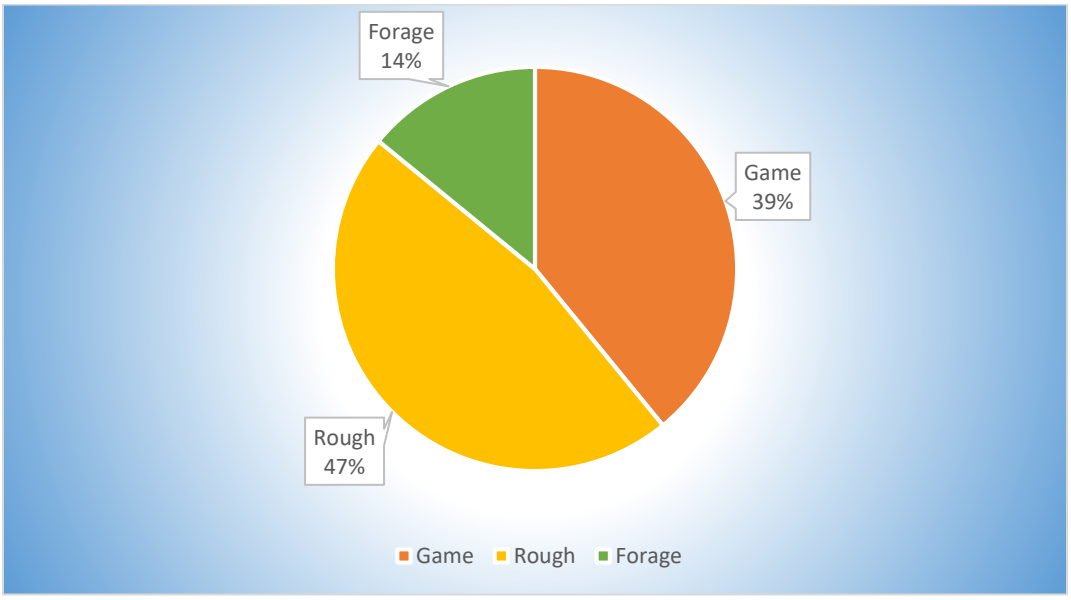
Figure 4: Black Crappie WR Four Year Trend



Gill Netting

Gill netting is to capture fish at various size. This year's gill net survey captured rough, game, and forage fish. The gill nets produced more rough fish than game and forage combined. Rough fish consisted of 47% of the abundance in the gill net while game fish consisted of 39% and the forage fish consisted of 14%.

Figure 5: Gill Net Abundance Distribution 2021



Boat Electrofishing

In the spring of 2015 Lake Fort Smith was reassigned to the northwest Arkansas district of the Arkansas Game and Fish Commission. At that time we started to conduct our electrofishing activities during the fall season to avoid the temperature extremes and the high turbidities associated with the spring sampling season. The following two charts detail the total number of largemouth and smallmouth bass acquired in each length class and the relative weight trend, respectively. For largemouth in the reservoir, the dominant length class was between 326mm - 350mm, the Wr for largemouth bass ranged from 53.6 to 84.3. For spotted bass, the length class 176mm-200mm seemed to be more present than the others. The Wr for spotted bass ranged from 76.9 to 109.4.

Figure 6: 2021 Largemouth Bass Wr and Size Distribution

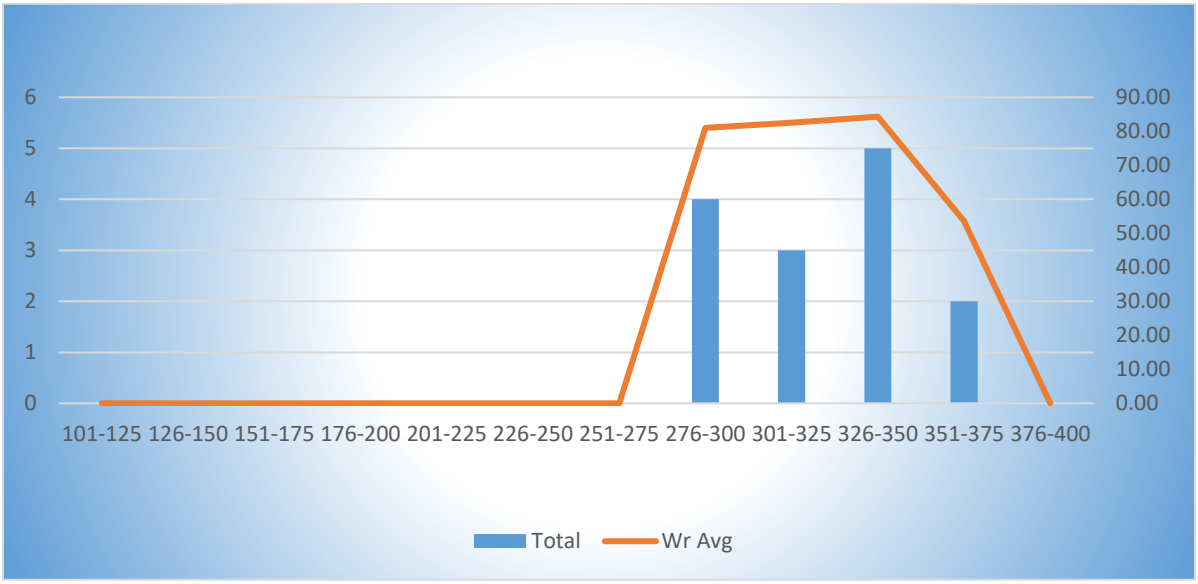
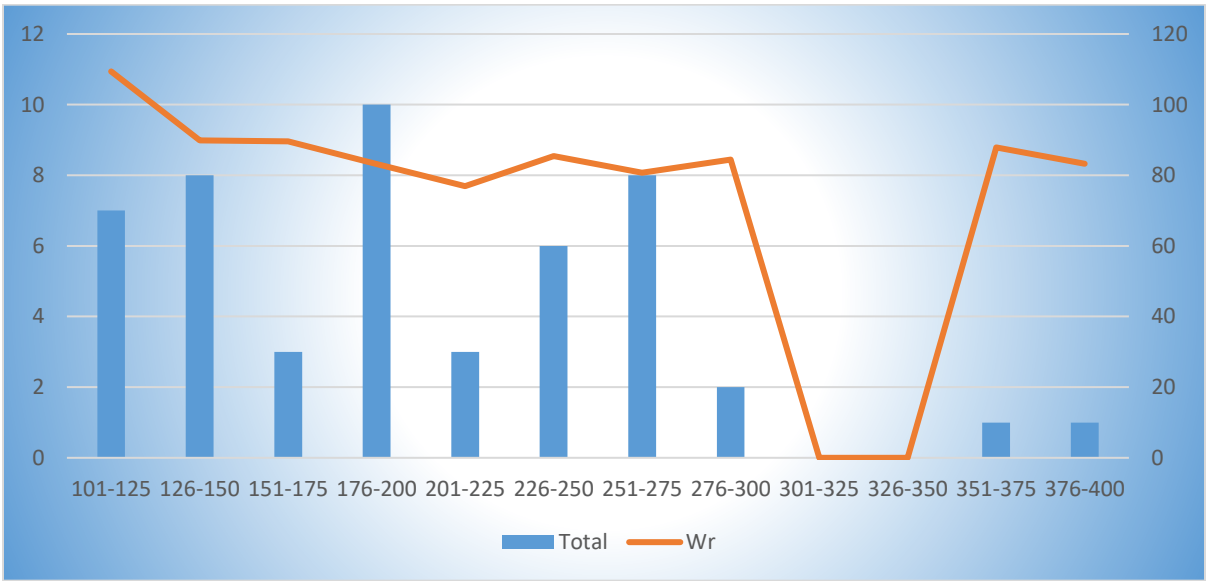


Figure 7: 2021 Spotted Bass Wr and Size Distribution



Walleye

Walleye *(Stizostedion vitreum*) were first stocked in Lake Fort Smith in June of 2013. 9600 fingerlings were stocked the first year with 9600 stocked again in 2014 and 2015. 2800 fingerlings were stocked during 2016 and 2017. A total of 15,500 were stocked in 2018. A total

of 9000 were stocked in 2019. In 2020, 10,404 fingerling walleye were stocked into the reservoir. An abundance survey is conducted on Lake Fort Smith every third year, while it is conducted annually by the City of Fort Smith. During this year's survey 17 walleye were collected. They ranged in length from 368mm to 571mm. The average Wr was 87.9. Table 3 details the total Walleye caught starting in 2018 to current day. Only 30 Walleye have been caught during this time frame. This figure is intended to track not only the relative weight of these fish but also the dates these fish were acquired to better understand the growing population within the reservoir.

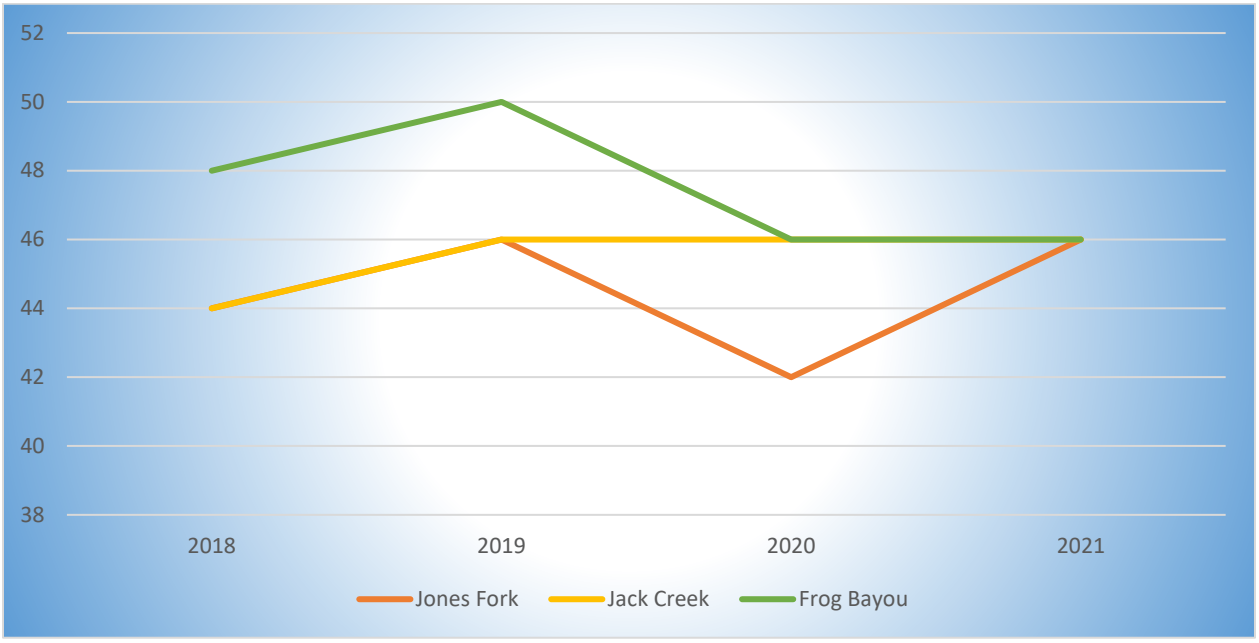
Table 3: Walleye Wr

Year	N	Mean Length (mm)	Mean Weight (g)	Mean Wr
2018	5	496	1249	93.9
2019	4	439	849	83.2
2020	4	279	186	81.5
2021	17	459	968	87.9

Backpack Electrofishing

The stream fish Index of Biotic Integrity is a multi-metric assessment used to predict the health of an aquatic ecosystem. Values from this assessment can also be used to diagnose sources of disturbance in the aquatic environment. IBI values over the four year period (2018-2021) ranged from a low of 42 on Jones Fork Creek 2020 to a high of 50 on Frog Bayou in 2019 (Figure 8). All three streams had an IBI value of 46 during 2021. This is a slight increase for Jones fork Creek while the value is the same as last years for Frog Bayou and Jack Creek. These scores indicate fair to good stream conditions. A complete list of the fish species collected is shown in Appendix A.

Figure 8: Lake Fort Smith Watershed Stream Fish IBI Trend



Surber Net

The stream macroinvertebrate Index of Biotic Integrity (IBI) is a Multi-metric biological assessment based on identifying and predicting the effects of humans on an ecosystem. IBI values are used to give us an indication of the biological condition of a stream. The IBI values for the four year period (2018-2021) have ranged from a low of 14 on Jones Fork in 2018 and 2019 to a high of 20 (max IBI score) for Jack Creek in 2018 and 2019, and Frog Bayou in 2019 (Table 4). Over the four year period, IBI values indicate good to excellent stream conditions. During 2021 all three streams had a IBI value of 16. The lack of values for any given creek is due to no samples being collected during that time frame.

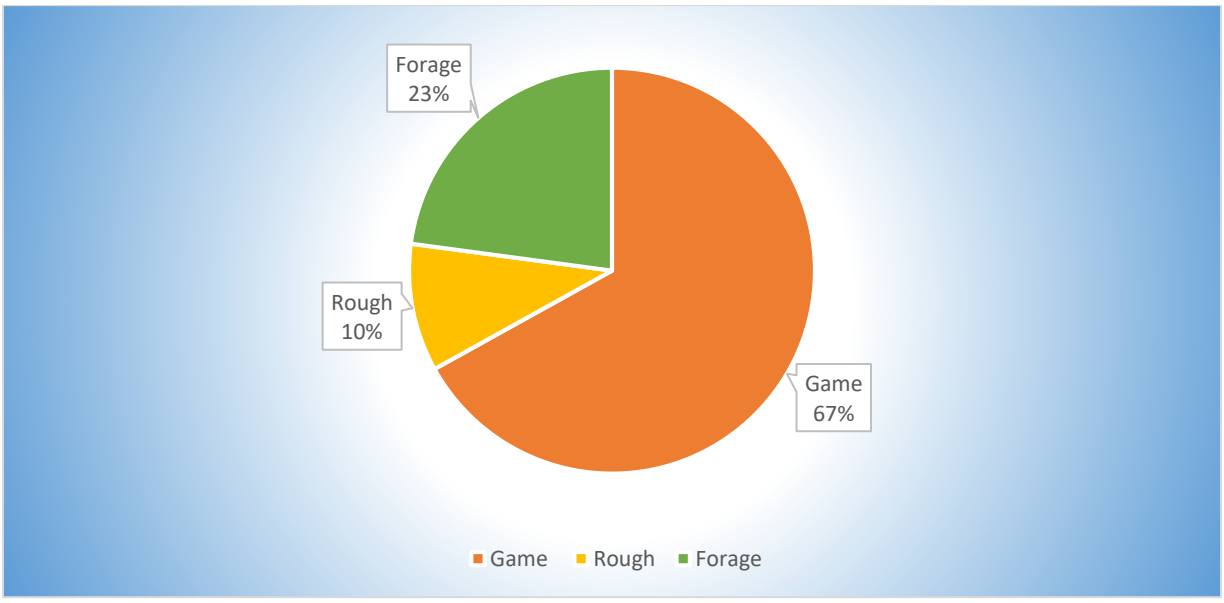
Table 4: Lake Fort Smith Basin IBI Scoring

Stream	2018	2019	2020	2021
Jack Creek – 1st Quarter	20	20	N/A	16
Jack Creek – 2nd Quarter	20	16	N/A	N/A
Frog Bayou – 1st Quarter	16	20	N/A	16
Frog Bayou – 2nd Quarter	18	16	N/A	N/A
Jones Fork – 1st Quarter	14	18	N/A	16
Jones Fork – 2nd Quarter	20	14	N/A	N/A

Reservoir's Fish Distribution

The total fish distribution is broken down into three primary groups of fish. Each with a different function within the ecosystem. The forage fish, which are insectivores and herbivores, are those that are primarily used as a source of food by the predators. The predators, which consume the forage fish, are referred to as the game fish. The last group, rough fish, are primarily made up of the suckers, carp, drum, gar and buffalo fish. Rough fish are typically not sought after by anglers and are typically not stocked. The forage fish made up 23% of the total population of the fish collected in 2021, while the predators comprised 67% of the population. The rough fish made up the remaining 10% of the total population (Figure 9).

Figure 9: Lake Fort Smith Total Percent Of Fish

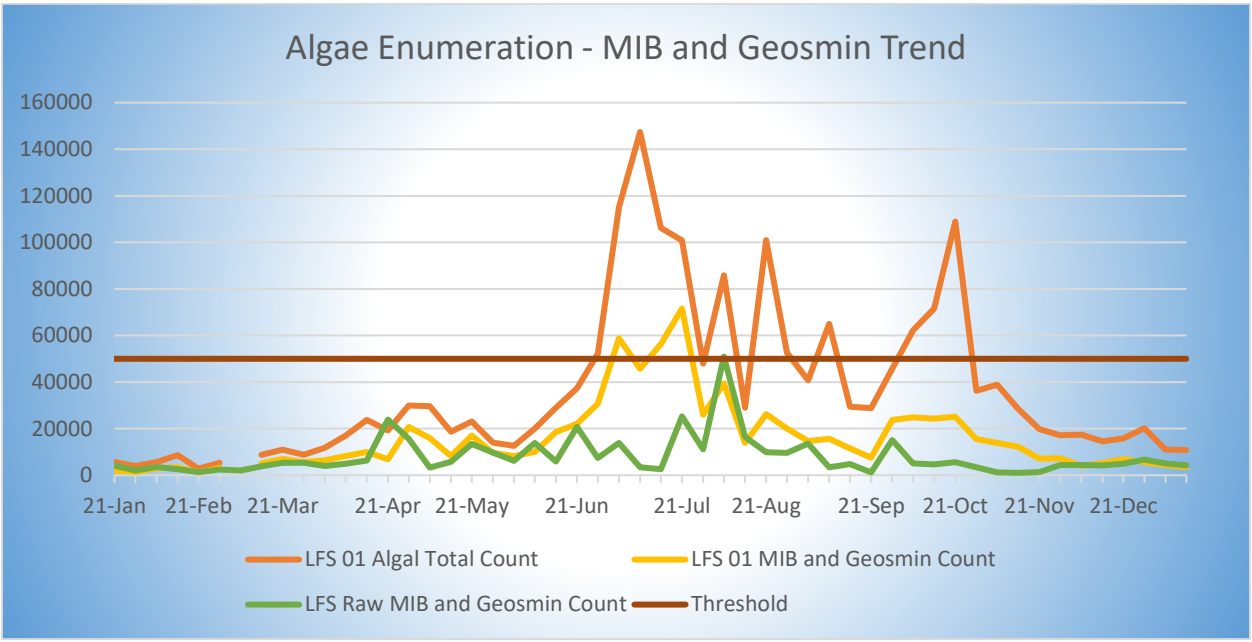


Algae Enumeration

Algae populations are dependent upon the amount of sunlight they receive and amount of nutrients that are available to them for photosynthesis. Different types of algae have different requirements in order for them to be at their most productive and will fill niches the dying algae leave vacant. With that in mind, the algae populations in Lake Fort Smith vary in varieties and population numbers with the seasonal changes as well as the amount of nutrients that are available. The nutrient levels (nitrogen and phosphorous) are dependent upon the size and intensity of storm events that occur within the watershed. The percentage of the algae population that are responsible for MIB and Geosmin also varies with seasonal changes and storm events. The exception to this is the re-suspension of nutrients due to turn over events that occur within the lake. This occurs during November through January when the lake

experiences rapid turnover events and re-suspends sediments and nutrients that were brought into the system during the spring storm events.

Figure 10: Algae Enumeration – MIB and Geosmin Trend



Water Quality

The phosphorous levels in Lake Fort Smith (Figure 11) mirror the size and intensity of storm events that occurred within the watershed. Of course there is a lag time between the peak of the storm event and a peak in phosphorous levels recorded in the lake. This lag time is due to the amount of time it takes for the storm water to be completely dispersed across the entire body of water. This set of circumstances also occurs with the nitrogen concentrations that enter the lake (Figure 13). The nitrogen concentrations will be slightly elevated over the stream concentrations due to atmospheric deposition that occurs naturally.

Figure 11: Lake Fort Smith Phosphorus Four Year Trend

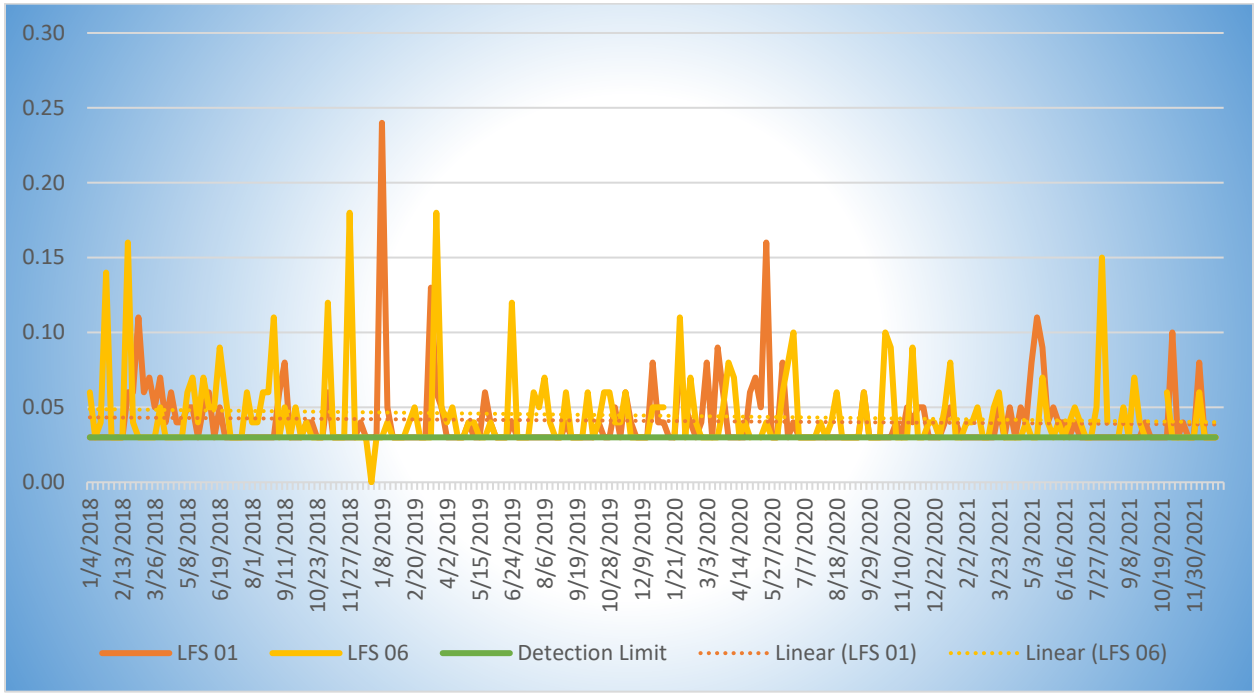


Figure 12: Lake Fort Smith Monthly Phosphorus Values

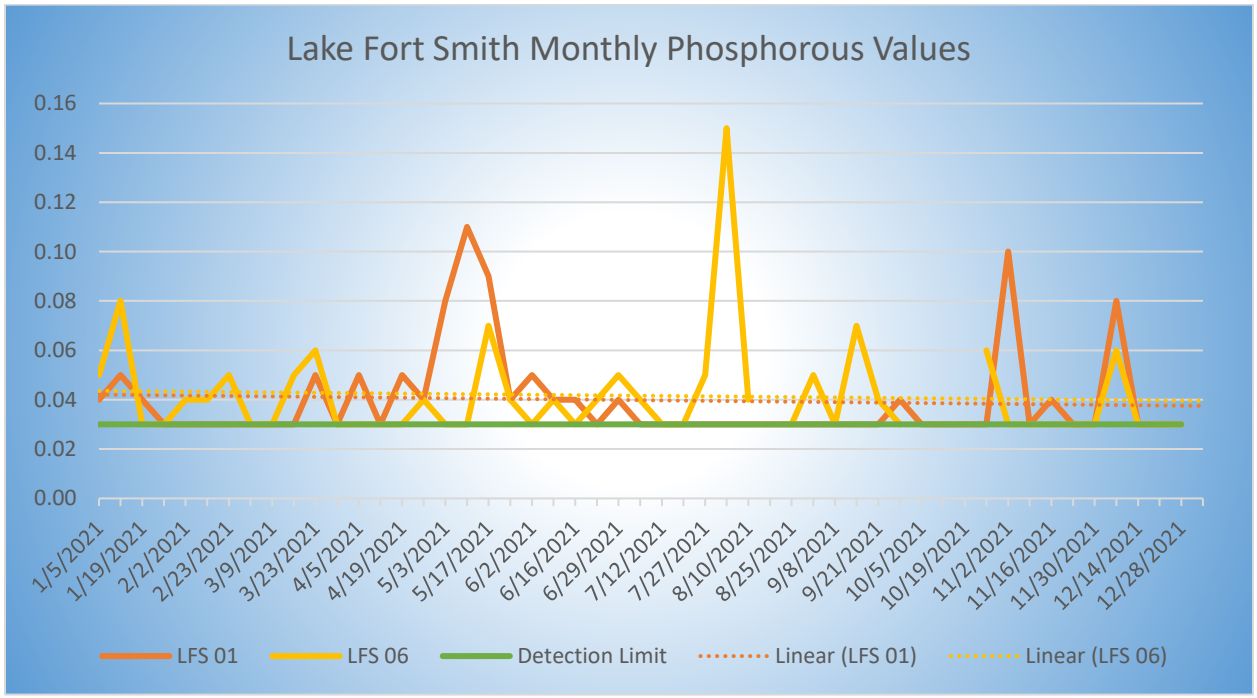


Figure 13: Lake Fort Smith Total Nitrogen Four Year Trend

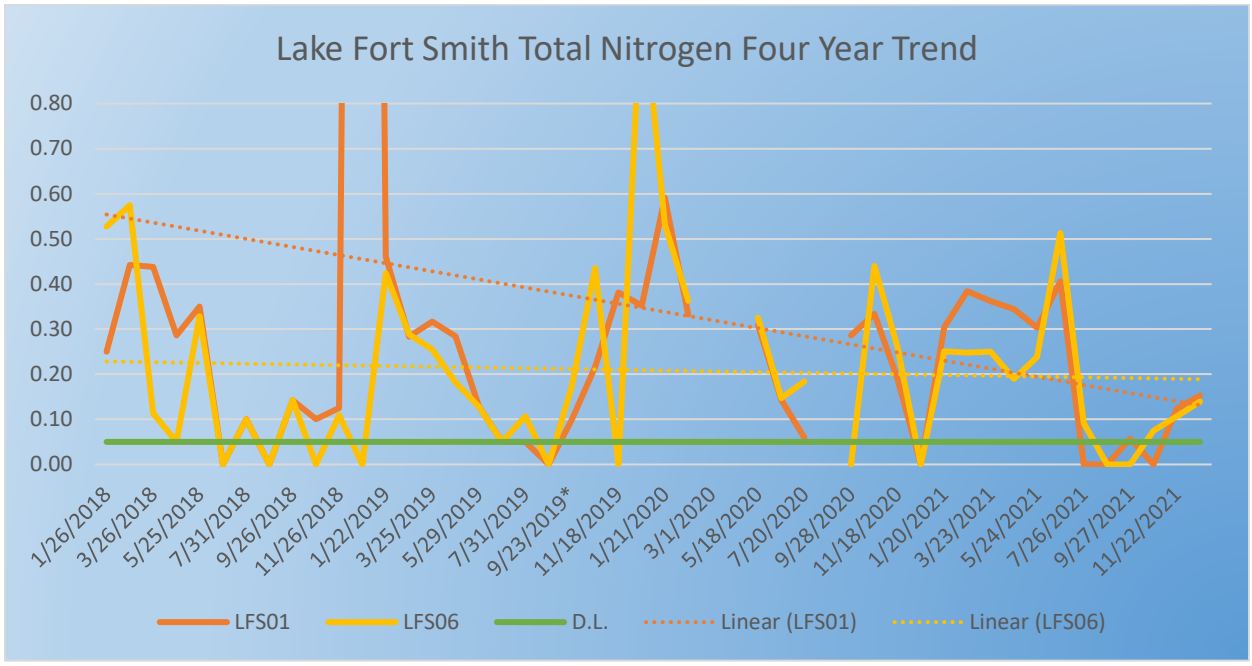
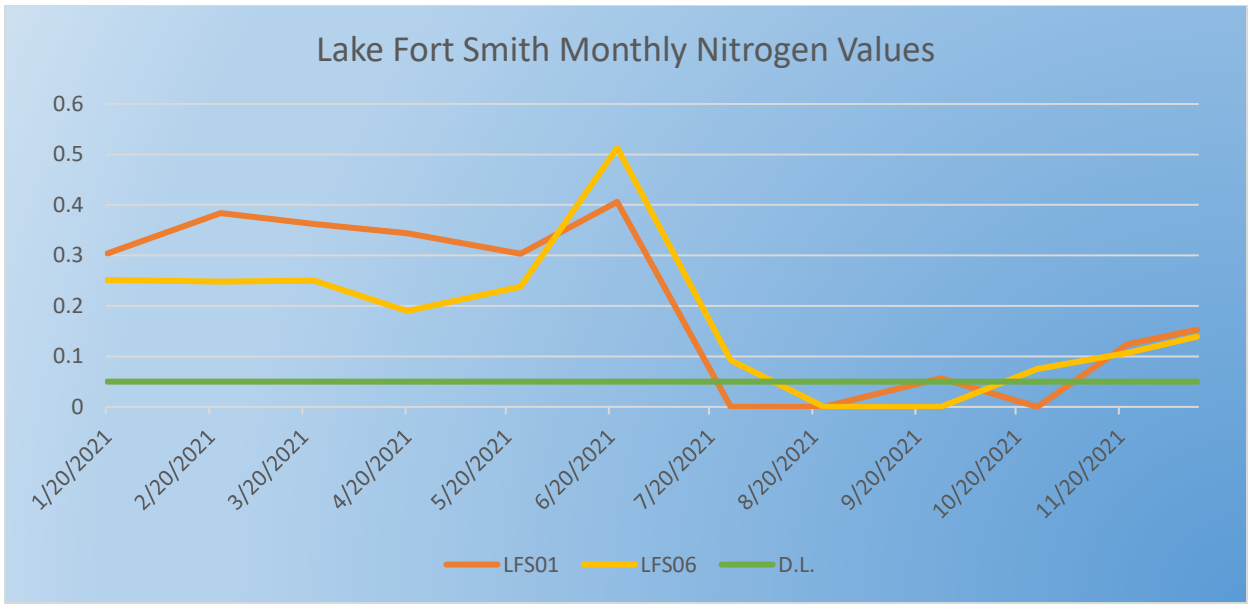


FIGURE 13. – This figure demonstrates the four year nitrogen trend (2018-2021) for the Lake Fort Smith reservoir. Those labelled at "0" values are for those that are below the detection limits.



Discussion

Overall, the reservoir fisheries abundance seems to be in good/fair condition. The game fish base makes up the majority of the fisheries, with the white and black crappie making up the largest portion of species caught. Due to inaccurate identification of bass species on the first night of sampling, a portion of the boat electroshocking data was deleted; this would have made the reservoir abundance distribution more precise.

It is to note that there were a small number of white crappie caught below 150 mm in length or above 300 mm in length. The same scenario is similar for black crappie in the Lake Fort Smith reservoir. Only five (5) black crappie were caught below 150 mm and above 300 mm. Both white and black crappie share most of their length distribution between the 200mm-300mm length.

Lake Fort Smith had an exciting development with sexually mature male and female walleye being collected in the past four (4) years (2018, 2019, 2020, and 2021). Walleye are very temperamental, deep water fish that are highly desirable to anglers and reflect positively on the overall health of the reservoir. If allowed by clear, debris free water, larval walleye sampling next spring would be preferable to ensure there is actual reproduction taking place. With the addition of the Walleye Wr tracking chart it becomes hopeful that the population will become self-sustaining within the next few years.

The stream fish IBI on all three (3) tributaries is within the fair to good water quality. The stream macroinvertebrate IBI on all three (3) tributaries is good to excellent. Overall water quality of Lake Fort Smith can be classified as mesotrophic. The mesotrophic classification takes into account the nitrogen, phosphorous, and chlorophyll α levels encountered during the entire year. This designation takes into account the seasonal variables and storm events that can impact water quality within the reservoir.

Appendix A

Frog Bayou Stream Fish

Family	Genus	Species	Common Name	2018	2019	2020	2021
Atherinidae	Labidesthes	sicculus	Brook Silverside		✓	✓	✓
Catostomidae	Moxostoma	duquesnei	Black Redhorse	✓	✓		
Catostomidae	Moxostoma	erythrurum	Golden Redhorse	✓		✓	✓
Catostomidae	Hypentelium	nigricans	Northern Hog Sucker	✓	✓	✓	✓
Centrarchidae	Lepomis	megalotis	Longear Sunfish	✓	✓	✓	✓
Centrarchidae	Lepomis	cyanellus	Green Sunfish	✓	✓	✓	✓
Centrarchidae	Lepomis	macrochirus	Bluegill	✓	✓	✓	✓
Centrarchidae	Micropterus	dolomieu	Smallmouth Bass	✓	✓	✓	✓
Centrarchidae	Micropterus	punctulatus	Spotted bass	✓	✓	✓	✓
Centrarchidae	Lepomis	gulosus	Warmouth				✓
Cyprinidae	Cyprinus	carpio	Common Carp				
Cyprinidae	Notropis	greenei	Wedgespot		✓		
Cyprinidae	Campostoma	spadiceum	Highland Stoneroller	✓	✓	✓	✓
Cyprinidae	Luxilus	cardinalis	Cardinal Shiner				✓
Cyprinidae	Pimephales	notatus	Bluntnose Minnow	✓	✓	✓	✓
Cyprinidae	Pimephales	vigilax	Bullhead Minnow	✓			✓
Cyprinidae	Notropis	atherinoides	Emerald Shiner	✓			
Cyprinidae	Notropis	boops	Bigeye Shiner		✓	✓	✓
Cyprinidae	Notemigonus	crysoleucas	Golden Shiner				
Cyprinidae	Semotilus	atromaculatus	Creek Chub	✓	✓	✓	✓
Cyprinidae	Notropis	nubilus	Ozark Minnow	✓	✓	✓	✓
Fundulidae	Fundulus	notatus	Blackspotted Topminnow	✓	✓	✓	✓
Ictaluridae	Noturus	exilis	Slender Madtom	✓	✓	✓	✓
Ictaluridae	Ameiurus	natalis	Yellow Bullhead	✓	✓	✓	✓
Percidae	Etheostoma	blennioides	Greenside Darter	✓	✓	✓	✓
Percidae	Etheostoma	flabellare	Fantail Darter	✓	✓	✓	✓
Percidae	Etheostoma	spectabile	Orangethroat Darter	✓	✓	✓	✓
Percidae	Etheostoma	punctulatum	Stippled/Sunburst Darter	✓	✓	✓	✓
Percidae	Etheostoma	whipplei	Redfin Darter	✓	✓	✓	✓
Percidae	Etheostoma	zonale	Banded Darter		✓	✓	✓
Percidae	Percina	caprodes	Logperch	✓	✓	✓	✓
Poeciliidae	Gambusia	affinis	Mosquito fish	✓			
Percidae	Percina	copelandi	Channel Darter		✓	✓	

Appendix B

Lake Fort Smith Fisheries

Family	Genus	Species	Common Name	2018	2019	2020	2021
Atherinidae	Labidesthes	sicculus	Brook Silverside	✓		✓	✓
Catostomidae	Hypentelium	nigricans	Northern Hogsucker	✓	✓	✓	✓
Catostomidae	Minytrema	melanops	Spotted Sucker				
Catostomidae	Moxostoma	erythrurum	Golden Redhorse	✓	✓	✓	✓
Catostomidae	Moxostoma	carinatum	River Redhorse		✓	✓	✓
Catostomidae	Moxostoma	duquesnei	Black Redhorse	✓	✓	✓	✓
Centrarchidae	Micropterus	dolomieu	Smallmouth Bass			✓	✓
Centrarchidae	Micropterus	salmoides	Largemouth Bass	✓	✓	✓	✓
Centrarchidae	Micropterus	punctulatus	Spotted Bass	✓		✓	✓
Centrarchidae	Lepomis	macrochirus	Bluegill	✓	✓	✓	✓
Centrarchidae	Lepomis	microlophus	Redear Sunfish	✓	✓	✓	✓
Centrarchidae	Lepomis	cyanellus	Green Sunfish	✓	✓	✓	✓
Centrarchidae	Lepomis	gulosus	Warmouth	✓	✓	✓	✓
Centrarchidae	Lepomis	megalotis	Longear Sunfish	✓	✓	✓	✓
Centrarchidae	Pomoxis	annularis	White Crappie	✓	✓	✓	✓
Centrarchidae	Pomoxis	nigromaculatus	Black Crappie	✓	✓	✓	✓
Clupeidae	Dorosoma	cepedianum	Gizzard Shad	✓	✓	✓	✓
Cyprinidae	Cyprinus	carpio	Common Carp	✓		✓	✓
Cyprinidae	Campostoma	spadiceum	Highland Stoneroller	✓			✓
Fundulidae	Fundulus	olivaceus	Blackspotted Topminnow			✓	✓
Ictaluridae	Ameiurus	natalis	Yellow Bullhead	✓			✓
Ictaluridae	Ictalurus	punctatus	Channel Catfish	✓	✓	✓	✓
Ictaluridae	Ictalurus	furcatus	Blue Catfish				
Ictaluridae	Pylodictis	olivaris	Flathead Catfish	✓	✓	✓	✓
Lepisosteidae	Lepisosteus	osseus	Longnose Gar	✓	✓		✓
Moronidae	Morone	chrysops	White Bass	✓	✓	✓	✓
Percidae	Percina	caprodes	Logperch				✓
Percidae	Stizostedion	vitreus	Walleye	✓	✓	✓	✓