

# Pittsburg District Fisheries Newsletter

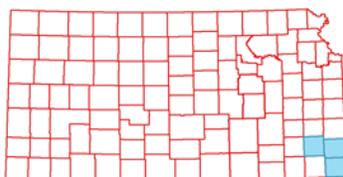
Kansas Department of Wildlife, Parks and Tourism

Summer 2021

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## 2021 Summertime Blues (Flatheads)

The Pittsburg District includes Cherokee, Crawford, and Neosho counties. Two water bodies were sampled in the Pittsburg district in early June of 2021 to monitor the bass populations: Crawford State Fishing Lake and Neosho State Fishing Lake. You will find more information about the management about Bone Creek, sampling results from the June 2021 bass sampling effort, and information about a flathead catfish research project that is being conducted in southeast Kansas on our State Fishing Lakes (SFLs).



# Bone Creek Lake

Bone Creek Lake in southeast Kansas is a 540 acre reservoir that filled in 1997 and was opened to public fishing in 1999. It is now 27 years in age if we're celebrating birthdays. Initial stocking effort was conducted by KDWPT in 1997 of largemouth bass, walleye, channel catfish, smallmouth bass, black crappie, redear sunfish, and bluegill. Since then, annual stocking efforts continue each year of largemouth bass fingerlings to help bolster the largemouth bass population and channel catfish. In the past 5 years, saugeye were apart of the stocking effort as well, although not annually.

Below are the species of fish and amount of fish stocked in Bone Creek since 2013 to 2021:

Species	Justification	Quantity	Size	Month	Stocking Year	Date
Largemouth Bass	Maintenance	13,500	FINGERLINGS	JUNE	2021	6/15/2021
Channel Catfish	Maintenance	10,800	INTERMEDIATES	OCT	2020	12/16/2019
Largemouth Bass	Experimental	218,377	FRY	APR	2019	5/3/2019
Channel Catfish	Surplus	11,000	FINGERLINGS	APR	2019	4/11/2019
Saugeye	Maintenance	1,000,000	FRY	APR	2019	1/1/2019
Channel Catfish	Maintenance	10,800	INTERMEDIATES	OCT	2019	1/1/2019
Saugeye	Maintenance	1,000,000	FRY	APR	2018	1/1/2018
Channel Catfish	Maintenance	10,800	INTERMEDIATES	OCT	2018	1/1/2018
Saugeye	Maintenance	1,000,000	FRY	APR	2017	1/1/2017
Channel Catfish	Maintenance	10,800	INTERMEDIATES	OCT	2017	1/1/2017
Channel Catfish	Maintenance	2,000	INTERMEDIATES	OCT	2016	1/1/2016
Channel Catfish	Maintenance	3,984	INTERMEDIATES	OCT	2015	1/1/2015
Channel Catfish	Maintenance	2,700	INTERMEDIATES	OCT	2015	1/1/2015
Channel Catfish	Maintenance	2,700	INTERMEDIATES	OCT	2014	1/1/2014
Saugeye	Introductory	13,500	FINGERLINGS	JUN	2013	1/1/2013
Channel Catfish	Maintenance	2,700	INTERMEDIATES	OCT	2013	1/1/2013

A total of 68,284 channel catfish, 231,877 largemouth bass, and 3,013,500 saugeye have been stocked in Bone Creek. The number of saugeye sounds like a very large number. It's important to remember that a large female walleye will average 150,000 eggs providing the total of ~3,000,000 coming from a total of 20 individual female walleye and crossed with a male sauger. Saugeye are hybrids and their population is supported by stockings. We expect a 1-2% survival from fry stockings. It's important to note that walleye were stocked in Bone Creek when the lake was filled in 1997 and fingerling stockings took place since 2011. Largemouth Bass thrived in the lake since the beginning despite a percid species being in the lake.

I've heard a number of concerns from local tournament anglers and anglers that I completely understand and take to heart. As the fisheries biologist, I do not nor do I deliberately stock a species that may negatively impact another species, especially the number one target species of anglers of largemouth bass in Bone Creek. I hope to address those concerns and always welcome any other input from our anglers of southeast Kansas. Mother Nature plays the most important role in fish management with water level fluctuations, air temperature patterns, and triggering the time of a successful spawn. As the reservoir ages, it's important to maintain the quality of fish habitat as the reservoir experiences sedimentation, warmer water temperature, and less and less productivity over time.

## ***Why were saugeye stocked?***

- 1.) Increase predation on an abundant panfish population (i.e., bluegill, redear sunfish, black crappie)**
- 2.) Increase size structure of crappie to enhance angler yield**
- 3.) Create a saugeye/walleye fishery for anglers of southeast Kansas**

# Bone Creek Lake

## Benefits of Saugeye in Bone Creek:

Largemouth Bass prey upon forage fish species of bluegill, redear sunfish, and gizzard shad. To maintain the quality of forage in the lake, it's important to keep the prey fish numbers in check to maintain quality of forage in a lake, especially in a newly created reservoir that will undergo many changes as it ages past 20 years old. Saugeye were stocked to enhance predation upon bluegill, redear sunfish, and crappie. The main benefit was to increase the quality of forage fish of bluegill and redear sunfish for the 15-21" largemouth bass that were supporting the angler catch and tournament bags in recent years. That was highly successful.

### Bluegill:

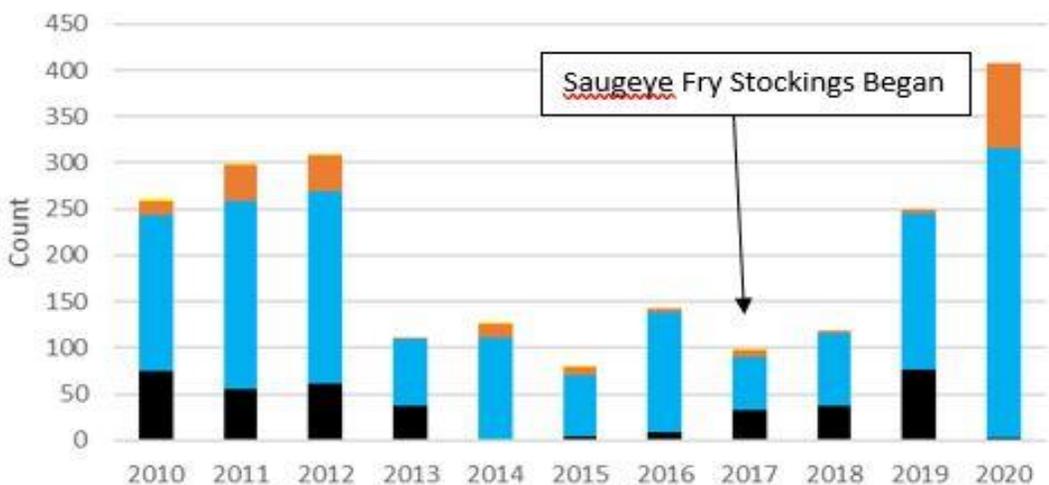
#### Bluegill

**Table 5. Catch per unit effort (CPUE), proportional stock distribution (PSD), relative weight (W and relative standard error (RSE) estimates for Bluegill sampled during September, October a November by trapnets.**

	2016	2017	2018	2019	2020
Total Catch	143	98	119	250	407
Stock Catch	117	55	50	168	405
Units of Effort	7	8	8	8	8
Sub-Stock CPUE (RSE)	3.7 (42)	5.4 (52)	8.6 (39)	10.3 (44)	0.3 (100)
Stock CPUE (RSE)	16.7 (43)	6.9 (65)	6.3 (46)	21.0 (27)	50.6 (43)
Quality/Density CPUE (RSE)	1.1 (40)	1.8 (68)	1.0 (68)	2.4 (36)	25.0 (44)
Preferred CPUE (RSE)	0.0 (.)	0.5 (76)	0.0 (.)	0.0 (.)	0.5 (76)
Memorable/Lunker CPUE (RSE)	0.0 (.)	0.0 (.)	0.0 (.)	0.0 (.)	0.0 (.)
Total CPUE (RSE)	20.4 (42)	12.3 (41)	14.9 (42)	31.3 (12)	50.9 (43)
PSD S-Q	93.16	74.55	84	88.69	50.62
PSD Q-P	6.84	18.18	16	11.31	48.4
PSD P-M	.	7.27	.	.	0.99
PSD M-T	.	.	.	.	.
PSD	6.84	25.45	16	11.31	49.38
Mean WR S-Q (RSE)	73 (4)	89 (3)	84 (3)	86 (3)	84 (2)
Mean WR Q-P (RSE)	75 (2)	86 (5)	77 (4)	88 (3)	88 (1)
Mean WR P-M (RSE)	(.)	84 (3)	(.)	(.)	97 (5)
Mean WR M-T (RSE)	(.)	(.)	(.)	(.)	(.)
Mean WR T+ (RSE)	(.)	(.)	(.)	(.)	(.)

### Bluegill Frame Net

■ <3" ■ 3-6" ■ 6-8" ■ >8"



# Bone Creek Lake

## Benefits of Saugeye in Bone Creek continued:

### Bluegill:

So, why do we care about bluegill? Weren't the bluegill in good shape before we stocked saugeye? Won't the lack of bluegill eaten by saugeye negatively impact the largemouth bass population? The "proof in the pudding" is grounded in the science and data. There's always been a large number of bluegill in Bone Creek, but once largemouth bass get over 15", they need a larger size of fish to be able to eat and prey upon to maintain rapid growth that we experience in southeast Kansas in a warmer climate and longer growing season. Saugeye stockings have not only increased the number of bluegill in Bone Creek, but they have greatly enhanced the size structure of bluegill in Bone Creek.

For example, in 2016, 143 bluegill were caught in 8 trap nets as apart of our standard sampling that we conduct each year. There's a lot of statistics in previous "Table", but the one to focus on is Total CPUE (total number of bluegill captured divided by the number of trap nets set) and Quality CPUE (total number of 6" and greater bluegill captured divided by the number of trap nets set). The Total CPUE went from 20.4 in 2016 to 50.9 in 2020. The number of bluegill sampled *doubled*. The Quality CPUE went from 1.1 in 2016 to 25.0 in 2020. That number increased 22x from what it was in 2016. Condition of bluegill increased from a mean Wr (Relative Weight Condition, how health of a fish species is evaluated) in 2016 of 74, which is very poor, to a mean Wr of 90 realized in 2020. The reference year of 2016 is important in this context, due to when saugeye fry stockings began in 2017. Fingerling stockings of saugeye were not successful prior to 2017.

### Redear Sunfish:

Same questions for Redear Sunfish that you may be asking yourself is why does it matter? In managing a relatively small reservoir of 540 acres, maintaining the quality of forage for largemouth bass management is critical to maintain a quality bass population.

	2016	2017	2018	2019	2020
Total Catch	162	277	680	246	155
Stock Catch	147	143	188	123	140
Units of Effort	7	8	8	8	8
Sub-Stock CPUE (RSE)	2.1 ( 72)	16.8 ( 45)	61.5 ( 22)	15.4 ( 69)	1.9 ( 61)
Stock CPUE (RSE)	21.0 ( 50)	17.9 ( 29)	23.5 ( 38)	15.4 ( 47)	17.5 ( 44)
Quality/Density CPUE (RSE)	4.3 ( 42)	6.4 ( 50)	3.4 ( 44)	1.4 ( 33)	7.5 ( 40)
Preferred CPUE (RSE)	0.6 ( 52)	2.1 ( 56)	0.1 (100)	0.0 ( .)	0.5 ( 65)
Memorable/Lunker CPUE (RSE)	0.0 ( .)	0.3 ( 65)	0.0 ( .)	0.0 ( .)	0.0 ( .)
Total CPUE (RSE)	23.1 ( 51)	34.6 ( 27)	85.0 ( 25)	30.8 ( 45)	19.4 ( 40)
PSD S-Q	79.59	64.34	85.64	91.06	57.14
PSD Q-P	17.69	23.78	13.83	8.94	40
PSD P-M	2.72	10.49	0.53	.	2.86
PSD M-T	.	1.4	.	.	.
PSD	20.41	35.66	14.36	8.94	42.86
Mean WR S-Q (RSE)	81 ( 2)	87 ( 2)	81 ( 2)	85 ( 1)	97 ( 1)
Mean WR Q-P (RSE)	86 ( 2)	88 ( 2)	86 ( 1)	87 ( 1)	93 ( 1)
Mean WR P-M (RSE)	93 ( 3)	93 ( 2)	83 ( .)	. ( .)	102 ( 3)
Mean WR M-T (RSE)	. ( .)	93 ( 0)	. ( .)	. ( .)	. ( .)
Mean WRT+ (RSE)	. ( .)	. ( .)	. ( .)	. ( .)	. ( .)

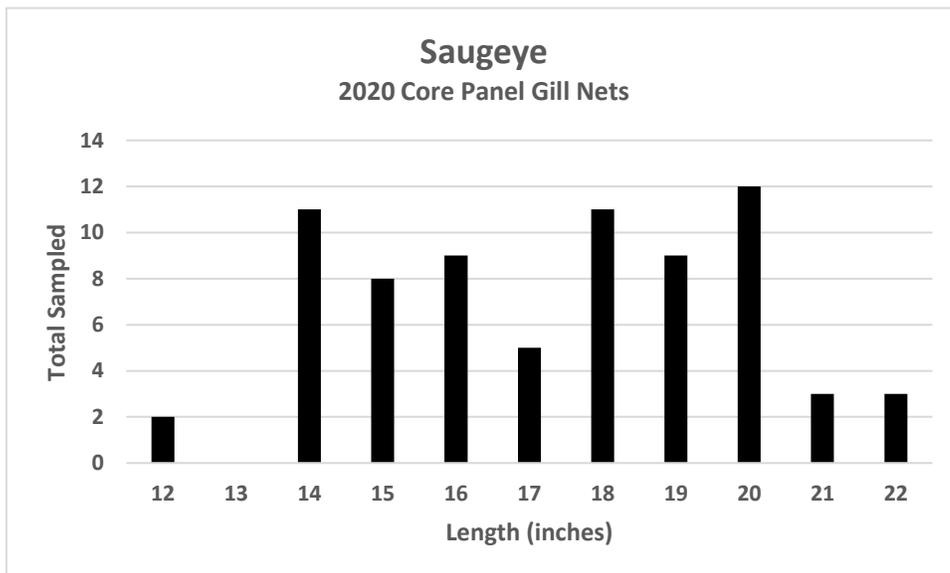
Similar to the bluegill patterns in the statistics, the redear sunfish experienced the same benefits of enhanced predation from the saugeye population, although not as drastic of a change. However, the important statistic to highlight in the table is the PSD (Proportional Size Distribution, number of redear sunfish over quality length sampled) was 20.41 in 2016 and in 2020 was 42.86. That's nearly half over 6" that were sampled in 2020 in comparison to only 20% of the sample in 2016.

# Bone Creek Lake

## Saugeye:

Saugeye stockings first took place in 2013 with fingerling stockings. Fry stockings were requested in 2017, 2018, and 2019 respectively and were successful in establishing the population. They have been managed under a conservative regulation of 18" minimum length limit and a daily creel limit of 2 per day. I have proposed to increase the daily creel limit to 5 per day and maintain the minimum length limit of 18". I have also proposed to cut stockings back to 500,000 fry stockings every other year. However, I will maintain focus and keep an eye on the largemouth bass population with a close eye and also hear concerns and hear anglers' voices to continue the saugeye stockings. If the anglers don't like to catch a saugeye in the southeast part of Kansas and if the benefits to the abundant panfish populations don't continue, I will not force a square peg through a round hole.

The one argument that I hear is that the saugeye are "eating all of the bass". In the next page, you will find the sampling results and data on the largemouth bass population. The one thing that I will mention is that a saugeye is not going to eat a 12", 15", 18" largemouth bass. In 73 saugeye diets, I observed redear sunfish and bluegill in 100% of the diets. You'd also find that largemouth bass were in lower body condition if there was competition and a lack of food source. They are not to blame for the decrease in catch rates of largemouth bass in tournaments, or the overall decrease in the population.



Saugeye are excellent to eat and for table fare, as well as a fun fish to target while angling. Please promote the population with your friends and other anglers to increase catch and harvest of the saugeye population at Bone Creek with the increase in daily creel limit of 5 that will occur on January 1, 2022.

How do I know that the saugeye are from the fry stockings? I aged saugeye from the 2018 sample and found that saugeye reach 15" in 2 years meaning the fry stockings were successful in establishing the saugeye population in 2017. It's hard to see, but you can make out the first ring (annuli) and the outside edge would be considered the second year, since the saugeye was sampled in the fall of 2018.



# Bone Creek Lake

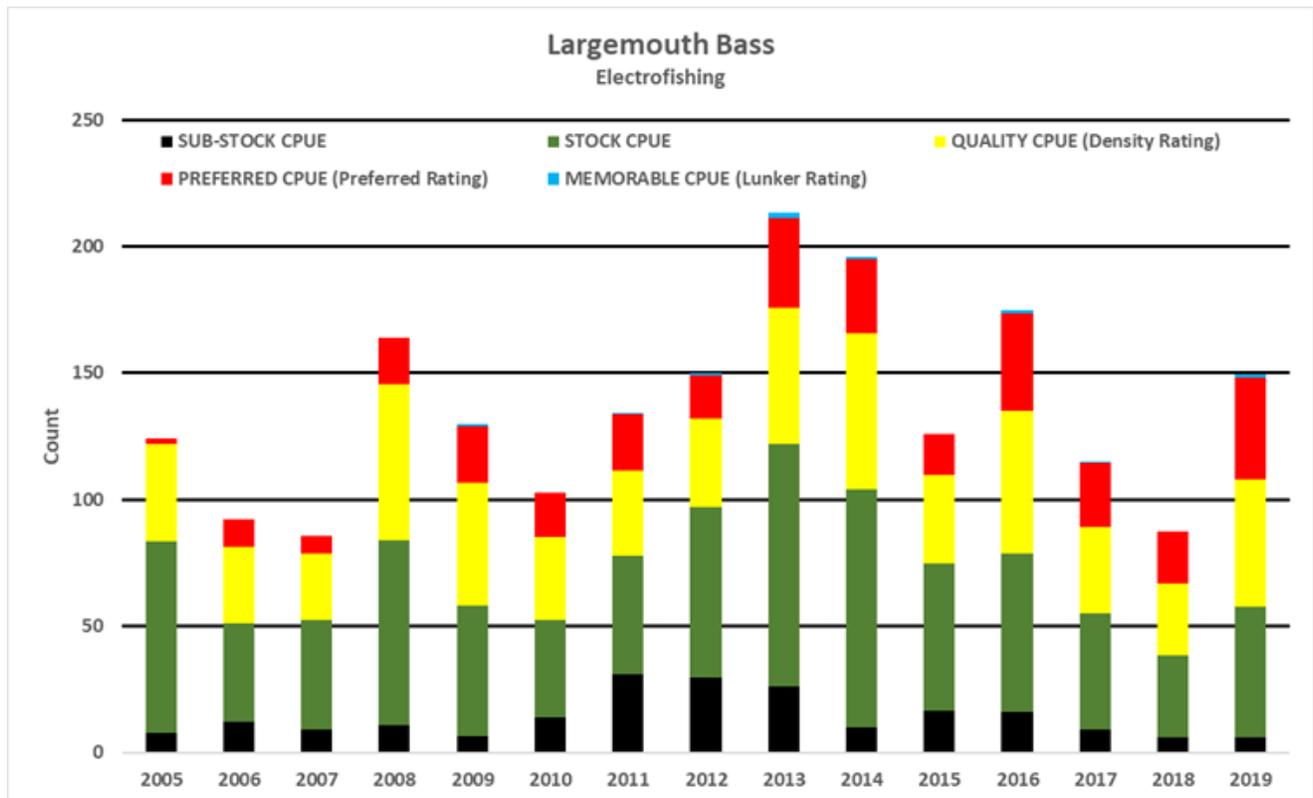
## Largemouth Bass:

Largemouth Bass are the number one target for anglers heading to Bone Creek. Numerous tournaments are held each year, as well as weekly weigh-in tournaments (19" and over) from a local club from March through October. We do manage our fisheries for the diverse group of anglers that visit our lake, but I do make every management decision at Bone Creek with the intention of improving the largemouth bass population, or to improve another sportfish opportunity that will not negatively impact the largemouth bass population.

A total of 13,500 advanced fingerlings were stocked on June 15, 2021 at Bone Creek. Surplus fry were available in 2019 where I requested those and a total of 218,377 fry were stocked. I plan to continue to request and stock 13,500 advanced fingerlings, if not more, for the next five years. I will evaluate these stockings each year in May with my electrofishing sample with taking fin clips for genetic analysis to see how many of the bass that I am stocking are surviving and contributing to the population. I have proposed to increase the daily creel limit of saugeye to 5 per day to alleviate the concerns from bass anglers catching saugeye on bass gear, as well as increasing harvest for anglers specifically targeting saugeye.

Mother nature plays the most important role when managing for bass populations. Water levels, air temperature fluctuations, and timing for a successful spawn is important to keep in mind. The age of Bone Creek being 27 years does play a negative role in the bass population. LMBV (Largemouth Bass Virus) is a virus that negatively impacts a bass population and Bone Creek does test positive for this virus. No fish kill has been observed. It can negatively impact recruitment of bass, which is why the fingerling stockings will take place to combat the decline in recruitment of the bass population at Bone Creek. Another important role that anglers can help the bass population is to follow proper tournament handling procedures as outlined by KAR 115-79 and to follow the Black Bass Pass. I strongly encourage tournament organizers to hold weigh-in tournaments in water temperatures less than 75° and hold paper tournaments when temperatures exceed that temperature.

Back to the fun part and that's the data!

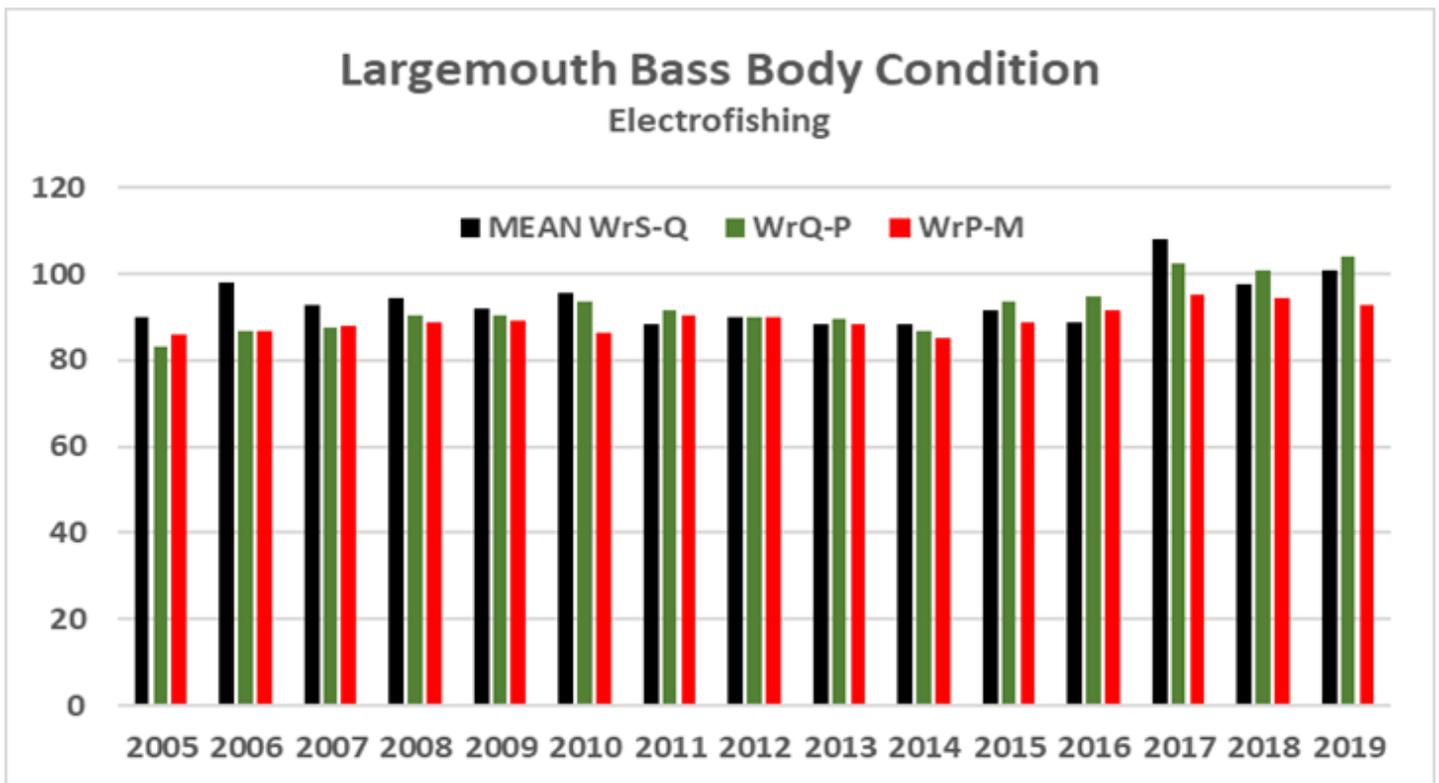


# Bone Creek Lake

## Largemouth Bass continued:

The graph above is data compiled from 2005-2019 electrofishing. This is our “standard” on evaluating densities and size structure of the largemouth bass populations across the state. CPUE stands for catch-per-unit-of-effort. For electrofishing, that stands for how many largemouth bass were sampled per hour of electrofishing. We can evaluate different sizes of bass per hour and that is a snapshot of the population within that size category. The different colors are broken out into five categories: “Sub-Stock CPUE” in **black** (less than 8”), stock CPUE in **green** (8-11.9”), quality CPUE in **yellow** (12-14.9”), preferred CPUE in **red** (15-19.9”), and memorable in **blue** (20” and above).

The “glory years” were from 2012-2016. However, since 2016, we have seen a decline in **sub-stock** that is the concern. We are seeing a lower number of fish successfully spawned and surviving to the following year. This is important, because the 19” largemouth you may have caught in 2016 is not being replaced very quickly in terms of a successful spawn. Therefore, my management recommendation is that I will request and stock fingerlings in the next five years.



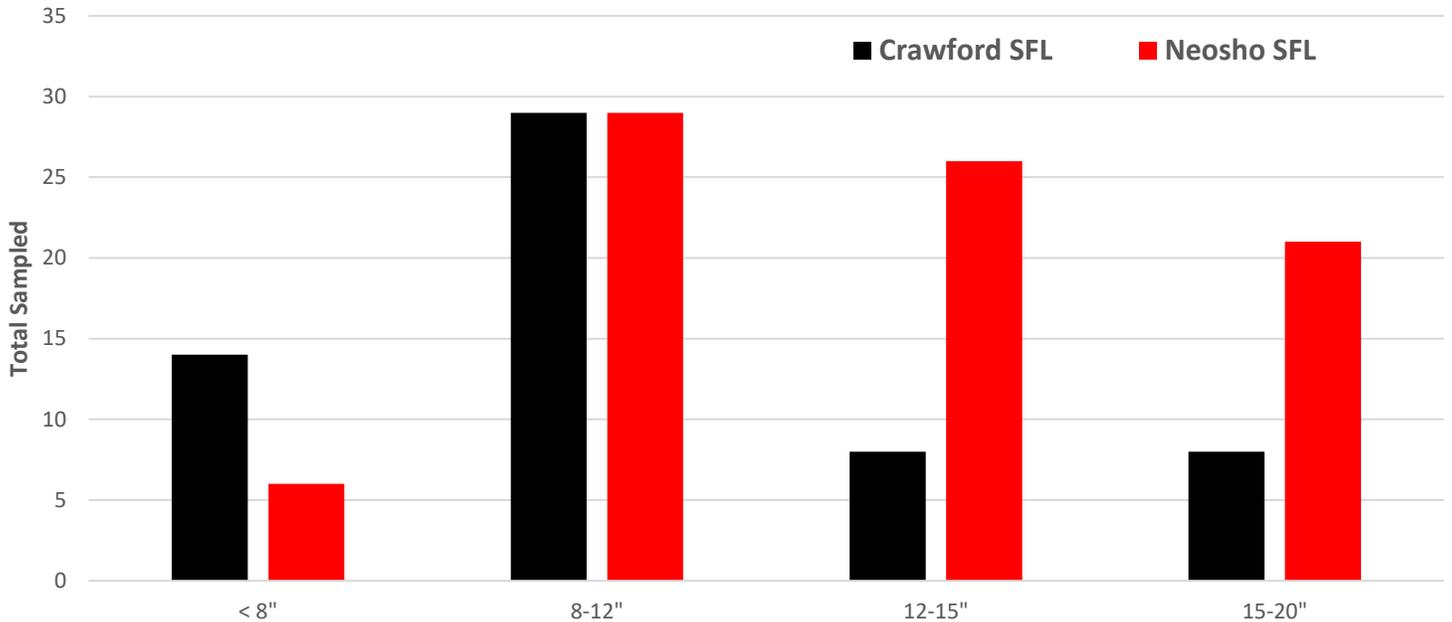
Largemouth bass condition has improved since the saugeye stockings began. From 2017 to 2019, body condition of bass has improved to a mean Wr of over 100. If saugeye were negatively impacted bass through eating all of the food in Bone Creek, bass condition would be low. Instead, body condition of bass has improved with a greatly enhanced size structure and number of bluegill and redear sunfish.

I have proposed to go to an 18” minimum length limit and 5 daily creel for largemouth bass for 2022. This will protect 18” and less largemouth bass, as well as protect the fish recruiting in the smaller size classes. It will also protect the fingerlings that will be stocked.

# 2021 Fish Sampling Results

## Largemouth Bass

Electrofishing 2021



Largemouth bass were sampled in 2021 at Neosho State Fishing Lake "Lake McKinley" and Crawford State Fishing Lake "Farlington Lake". Positive trends in the populations were the highlight at both lakes.

At Crawford SFL, it's very encouraging to see the large number of less than 8" and 8-12" largemouth bass, as we haven't seen this high of numbers of small largemouth bass since the early 2000s at Crawford SFL. Fin clips were taken from the largemouth bass at Crawford SFL to analyze genetics. I have stocked bass fingerlings the past two years and am excited to see if they are contributing to the population. In 3-4 years, we should be seeing some very nice fish.

At Neosho SFL, it's even more encouraging in the "here and now" for largemouth bass. After winter drawdowns in 2018 and 2019 and fish habitat additions, we are seeing an increase in size of the bass population up to 20". The fish are in very healthy condition.

More lakes are scheduled to be sampled in the fall with electrofishing, due to finally having an operational electrofishing boat. More lakes weren't sampled this summer, due to water temperatures increasing in the 80s and not getting a reliable sample of the bass population.

# Flathead Catfish Project!

Many anglers catch the occasional flathead catfish in our SFLs (State Fishing Lakes) across the state and we often times see them while we're sampling. However, we haven't evaluated the flathead catfish populations across the state in a rigorous application. In 2021, Seth Lundgren (Independence district fisheries biologist) and I will be sampling 3 times each month from June through August for flathead catfish at Crawford State Fishing Lake, Montgomery State Fishing Lake, Neosho State Fishing Lake, and Wilson State Fishing Lake.

From this research project, we plan to get a population estimate to see how many flatheads are in each study lake, age and growth of all sizes, mortality rates, fecundity, age and size at maturity, and more information to be able to manage and "keep an eye" on flathead catfish in future years.



*Myself holding a 60 lb flathead catfish from a recent sampling effort in June.*



*Myself holding a 28 lb flathead catfish from a recent sampling effort in June at Crawford SFL!*

# 2021 Fish Photos



*Largemouth bass sampled at Neosho SFL. Thanks to Travis Ratliff and Caleb for the help that day! Always enjoy getting others in the agency on the boat!*



*Myself holding a Largemouth bass sampled at Neosho SFL.*



*Myself having a fishing clinic with a local girl scouts group. After COVID, it was nice to see the smiles of a first fish again!*



*Bluegill sampled from the Mined Land Wildlife Area. The Mined Land Wildlife Area is one of the premiere bluegill fisheries in the state!*

## One Last Cast!



*The “panfish trifecta” caught out of a public strip pit on the Mined Land Wildlife Area: from left to right, a bluegill, warmouth, and redear sunfish. Sadie, my yellow lab, and I are sure enjoying fishing the strip pits on the Mined Land Wildlife Area and southeast Kansas public waters in southeast Kansas.*

**If you know of someone who would like to subscribe to the newsletter, they can do so [here](#). If you do not wish to receive the newsletter and unsubscribe, you can [CONTACT US](#) with “unsubscribe to Pittsburg District Newsletter” and we will get you taken off the list. If you would like to see anything different in upcoming editions of the newsletter or any questions, please don’t hesitate to contact me.**

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