

FALL 2022

# CHENEY DISTRICT FISHERIES

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## FISHING PROGRAMS

### Master Angler Award Program

Are you a Master Angler? Prove it! Kansas Department of Wildlife and Parks has a program called the Master Angler Award Program. If you catch a fish in Kansas large enough to qualify, you will receive a Master Angler Award certificate! Sizes of each species as well as a certificate application form can be found here:

<https://ksoutdoors.com/Fishing/Special-Fishing-Programs-for-You/Master-Angler-Award-Program>

### Trout Program

Trout season runs from November 1<sup>st</sup> through April 15<sup>th</sup>. KDWP will stock certain urban waters with adult sized trout ready to be caught. For more information on the Trout program including stocking locations and stocking dates click here:

<https://ksoutdoors.com/Fishing/Special-Fishing-Programs-for-You/Trout-Fishing-Program>

Remember that KDOT East, Vic's Lake, and Slough Creek are Type 1 trout waters and all anglers fishing those waters November 1st - April 15th must have a trout permit.



### Urban Fishing Program

KDWP has created the Urban Stocking Program to provide local fishing opportunities. Adult sized Channel Catfish (3/4lb-3lbs) are stocked in many public waters in Reno and Sedgwick counties. These fish are harvestable size and ready to catch. For more information on stocking locations and dates click here:

<https://ksoutdoors.com/Fishing/Special-Fishing-Programs-for-You/Urban-Fishing-Program>

## SAMPLING OVERVIEW: Largemouth Bass

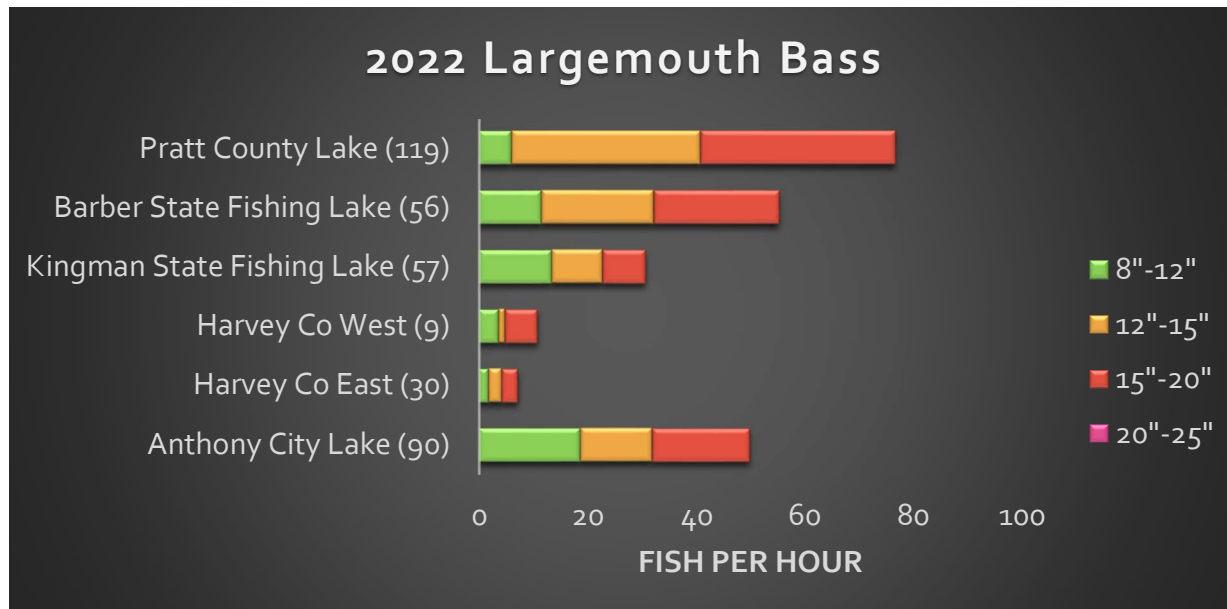


Figure 1. Largemouth Bass electrofishing fish per hour catch rates broken down by size class. Numbers in parenthesis represent the number of fish sampled at each lake.



### Largemouth Bass Electrofishing

Largemouth Bass were sampled via electrofishing during the Spring of 2022. Figure 1 shows the number of fish sampled per hour of electrofishing broken down into size classes. Keep in mind, this graph does not represent the abundance of Largemouth in each lake. You may notice that no fish over 20" were sampled in 2022. This is odd but not necessarily cause for concern. Just because we did not sample a Bass over 20" does not mean there are not any that size in the lake. Most populations were relatively balanced with the exception of the Harvey Co lakes (too few to tell) and Pratt Co Lake. Pratt has more fish over 12" because it was recently renovated and restocked, and the fish are exhibiting fast growth. The population should balance out once it becomes more established. This graph and following sections should give anglers a guide to help them determine where they might want to target Bass within the district.

## SAMPLING RESULTS: Largemouth Bass



### Kingman State Fishing Lake

Catch rates of Largemouth Bass at Kingman State Fishing Lake in 2022 were similar to 2021 for all size classes except for Bass in the Preferred class (15-20"). There were slightly fewer Preferred size Bass sampled in 2022 compared to 2021. The population was fairly balanced in 2022, though only a few fish were legal sized. Relative weights suggested the Bass were in good condition and therefore growth should not be stunted. The first five years following the renovation in 2015, the Largemouth population had good growth. However, not many fish grew over 18". To get a better understanding of age and growth, otoliths were taken from a sub-sample of fish. Figure 2 shows predicted and observed length at age. Growth between males and females was similar until age 5 then females showed slightly faster growth. On average, females reach the 18" minimum length limit at age 8. The model did not have males reaching 18" at all (one male was observed at 18"). This is slightly concerning because almost all legal-size fish are female. However, since they are not reaching 18" until age 8, they will have had a few years to reproduce before being susceptible to harvest. Mortality estimates were between 15% to 20% each year. This means that an estimated 15-20% of the population die each year from harvest and natural causes combined. This estimate may not be entirely accurate since recruitment has been variable. The largest year class came from 2019 and the second was from 2013 when the lake was restocked.

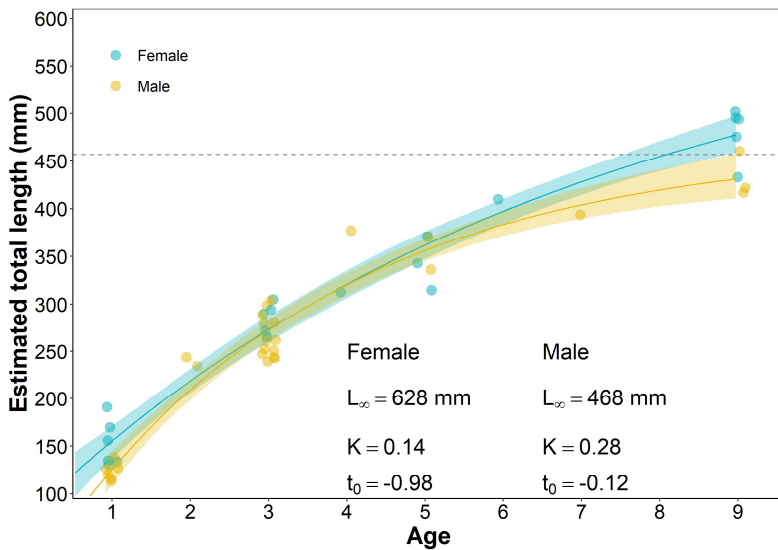


Figure 2. Growth curve showing predicted length at age and observed length at age for male and female Largemouth Bass collected at Kingman State Fishing Lake via electrofishing in the Spring of 2022. The solid line represents the predicted length at age. Shaded area represents a 95% confidence interval. Dots represent individual fish. The dotted line represents the 18" (457mm) minimum length limit.

## SAMPLING RESULTS: Largemouth Bass



### Barber State Fishing Lake

There was a decline in catch rates for most size classes (except Preferred size 15-20") of Largemouth in 2022 at Barber SFL. This decline may be due to a change in equipment and sampling procedures when the lake changed biologists. The Bass continue to grow, and the size structure continues to show larger fish each year. There were more fish over 15" sampled in 2022 than in the previous five years. We would like to see more recruitment (evident by the presence of smaller fish) in order to keep the population balanced. Relative weights were fair suggesting the population is not stunted. Age and growth information was taken from a sub-sample of fish. Figure 3 shows predicted and observed length at age for both males and females. Because there were not any age 3 and 4 females sampled, the model predicted that male growth was faster through the first 4 years. This is likely not the case. Instead, we can presume that fish in this population reach the 15" length limit somewhere between ages 4 and 5. Females are then likely to grow faster and become larger than males after age 5. Total annual mortality estimates were from 16-22%. The population has seen inconsistent recruitment over the years. The strongest year class was from 2015 and the next most abundant was from 2020. The two consistent year classes from 2020 and 2021 should help fill the gap from the limited recruitment seen from 2016-2019.

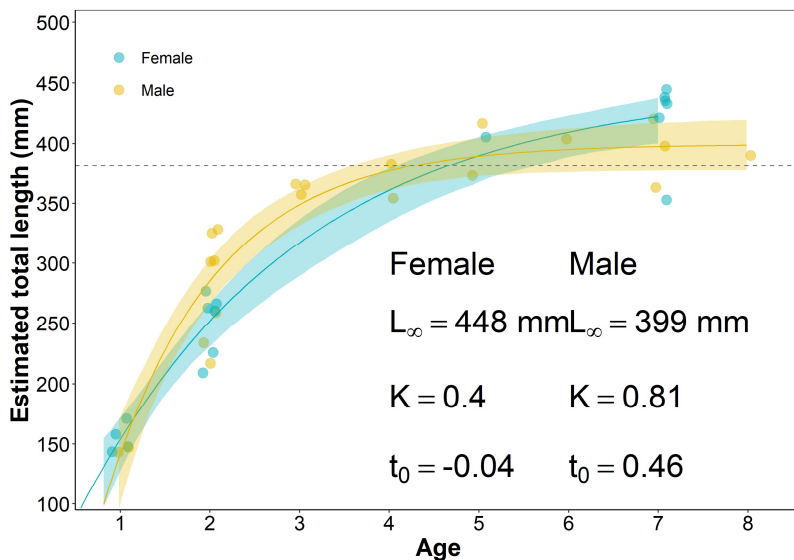


Figure 3. Growth curve showing predicted length at age and observed length at age for male and female Largemouth Bass collected at Barber State Fishing Lake via electrofishing in the Spring of 2022. The solid line represents the predicted length at age. Shaded area represents a 95% confidence interval. Dots represent individual fish. The dotted line represents the 15"(381mm) minimum length limit.

## SAMPLING RESULTS: Largemouth Bass

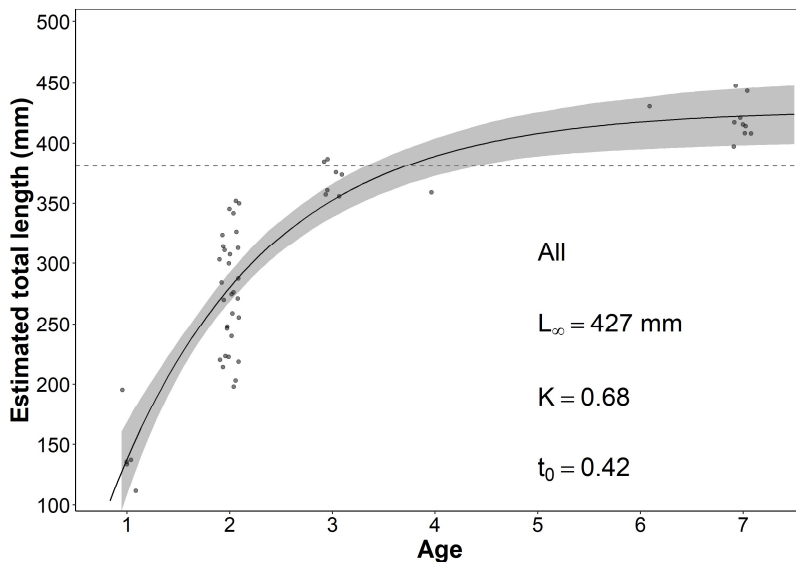


Figure 4. Growth curve showing predicted length at age and observed length at age for Largemouth Bass collected at Anthony City Lake via electrofishing in the Spring of 2022. The solid line represents the predicted length at age. Shaded area represents a 95% confidence interval. Dots represent individual fish. The dotted line represents the 15" (381mm) minimum length limit.

### Anthony City Lake

The relative abundance of Largemouth at Anthony in 2022 was pretty similar to 2021. Some of the Sub-stock (<8") fish from 2021 grew to Stock (8-12") size in 2022. Other than that, the size structure has not changed much over the past five years and remains relatively balanced. Relative weights were very high in 2022 which is consistent with previous years. This is a sign that the fish are in good health and should be exhibiting good growth. Yet, the size structure has not changed the way one might expect with fast growth. To look at growth rates, otoliths were taken from a sub-sample of fish. Figure 4 shows predicted and observed lengths at age. There was no difference in growth between males and females. As expected, growth rates were faster than the other two populations we looked at this year (KMSL & BSFL). Bass in Anthony reach the 15" length limit between ages 3 and 4. However, we do not see a lot of growth after age 5 despite the population having higher than normal relative weights. Annual mortality estimates were much lower (3-12%) than the other two populations. This difference could be from reduced harvest or reduced natural mortalities. Like the other populations, recruitment has not been consistent. The most abundant years class is from 2020 with the second being from 2015. Similar to Barber SFL, there was limited recruitment from 2016-2018. As long as the strong year class from 2020 continues to grow, there should be plenty of 15"+ size Bass in the lake. Hopefully, over time, the 2015 year-class will reach 20".

## SAMPLING RESULTS: Largemouth Bass



### Pratt County Lake

There was a significant decline in catch rates of Largemouth in Pratt Co from 2021 to 2022. However, this is not a major concern as much of the difference may come from differences in sampling methods between biologists. Also, the day we sampled in 2022 was much colder than normal and likely negatively affected catch rates. That being said, the population is doing very well after the renovation. Many fish are above 15” and some have even reached 18” (Figure 5). Relative weights were very high indicating that growth should continue to be good. Hopefully, we will see more fish over 18” in the near future as this Largemouth population looks to become the best in the district.

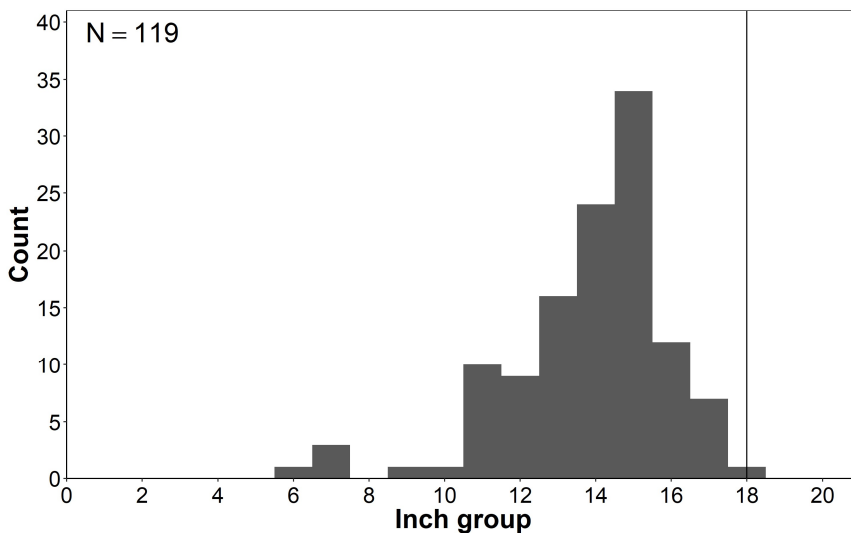


Figure 5. Length Frequency histogram of Largemouth Bass collected at Pratt County Lake via electrofishing in the Spring of 2022. The solid vertical line represents the 18” minimum length limit.



## SAMPLING RESULTS: Largemouth Bass

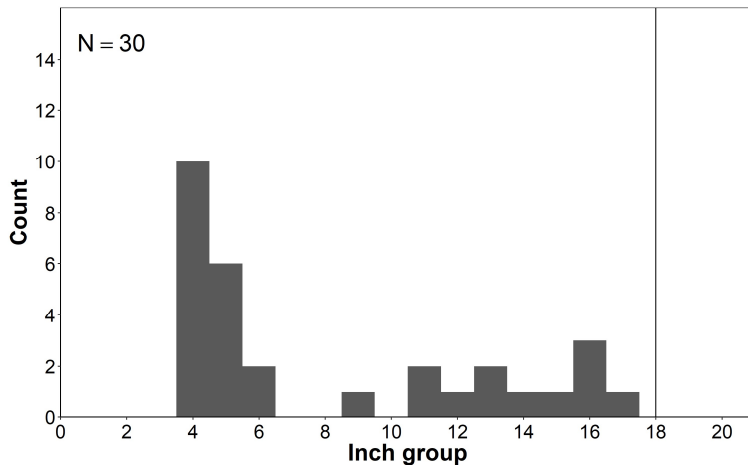
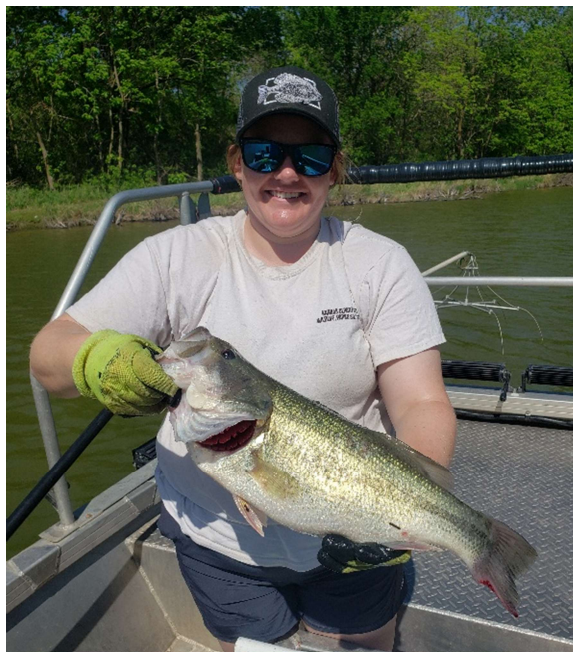


Figure 6. Length Frequency histogram of Largemouth Bass collected at Harvey County East Lake via electrofishing in the Spring of 2022. The solid vertical line represents the 18” minimum length limit.

### Harvey County East Lake

Since 2019, catch rates at Harvey East have been very low. That was the case in 2022 with the exception of an increase of Sub-stock (<8”) size fish. This is the first sign of a big year class, whether natural or from a stocking, since 2019. Relative weights were high for most size classes thus fish growth should be good. The removal of the slot limit and implementation of an 18” minimum length limit will allow these fish to grow and hopefully help the population to return to more desired numbers.



### Harvey County West Lake

Relative abundance of Largemouth Bass at Harvey West Lake has been declining the past few years. While one bass was 19” (pictured left), only 9 fish were sampled in 2022. The fish were in good condition which is common for low density populations. Frequent flooding and a lack of spawning habitat may be contributing to the decline of Bass in the West Lake. Continued stocking efforts and habitat work may help the population maintain better numbers.

## SAMPLING OVERVIEW: Sunfish

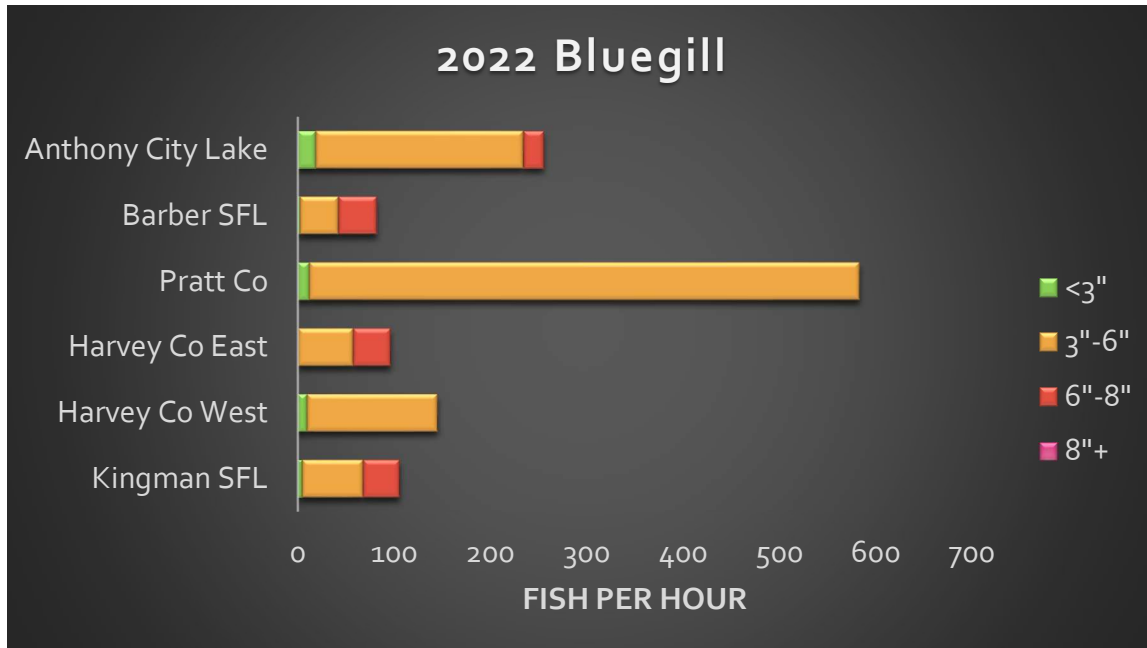


Figure 7. Bluegill electrofishing fish per hour catch rates broken down by size class.

### Sunfish Summary

Traditionally, we have sampled Sunfish in the Fall using trap nets. More recently, we have been sampling for Sunfish while electrofishing for Largemouth Bass. Ideally, data from electrofishing will provide us with more information on our Sunfish populations than with traditional trap nets. Figure 7 shows the number of Bluegill sampled per hour of electrofishing broken down into size classes. Keep in mind, this graph does not represent the abundance of fish in each lake. You may notice that no fish over 8" were sampled in 2022. This is common for Bluegill populations within the district. Barber SFL, Harvey Co East, and Kingman SFL have the best population for anglers looking to catch Bluegill. Anthony and Pratt Co have the best populations for providing forage for Largemouth Bass. It is probably not a coincidence that Pratt Co and Anthony have the best Largemouth populations in the district.

## Cheney Reservoir



### Blue Catfish

There was a slight decline in catch rates of Blue Catfish in Cheney reservoir from 2021 to 2022. Most of the decline was from fewer fish under 15” sampled in 2022. However, catch rates of larger fish have been slightly increasing each year as the main adult cohort continues to grow. Figure 8 shows the size structure of Blues cats sampled in 2022. Looking at the graph, you can see three major cohorts. Last year we collected age information on some of the smaller fish to determine what year class they were from. The first year-class you can see has fish from 8-11” which are from a successful stocking in 2021. The next has fish from 13-16” and is from 2019 (the only natural year class). The third is the cohort of adults (30-40”). We do not know the age or how many year classes are represented in these larger fish. The successful recruitment of the 2021 stocking provides hope that we can sustain the population through stockings. However, the size of the 2019 year-class shows us how slowly these fish are growing. You will also notice that about half of the adult cohort is over the 35” length limit. Ideally, we would want to protect these larger fish so that they may grow to trophy size. Therefore, we are looking at different regulation options that would allow the harvest of smaller fish while also protecting the larger fish.

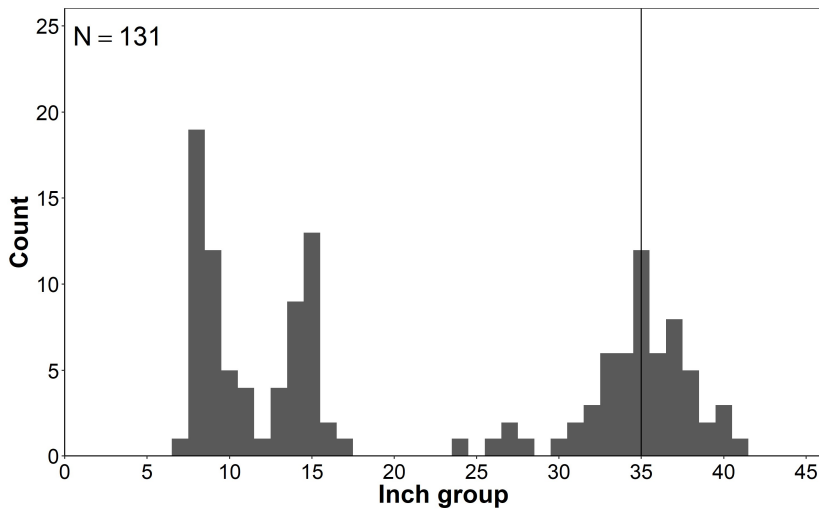


Figure 8. Length frequency histogram of Blue Catfish sampled at Cheney reservoir via electrofishing in 2022.

## Cheney Reservoir



### Flathead Catfish

As a side project, we decided to look into the Flathead Catfish population at Cheney reservoir. We had heard of some large Flatheads in the lake, and we wanted to see if we could adequately sample the population in order to learn more about it. Flatheads have traditionally been difficult to sample. Therefore, we experimented with a few different techniques and ended up sampling a decent number of fish over several days throughout the summer. Figure 9 shows the size structure of Flatheads that were sampled. You can see that we saw fish of all sizes from 5” to almost 50” in length. This tells us that the population is well balanced. We removed spines on most fish to get an idea of age, growth, and mortality. We likely will not know these results until next year. We did not find Flatheads at very many locations, but we did see more than we initially thought we would. Experimenting with different sampling methods helped us become more efficient at sampling Flatheads at Cheney. This will allow us to obtain more information about the population in the future as we continue to re-evaluate how we manage Flathead populations in Kansas.

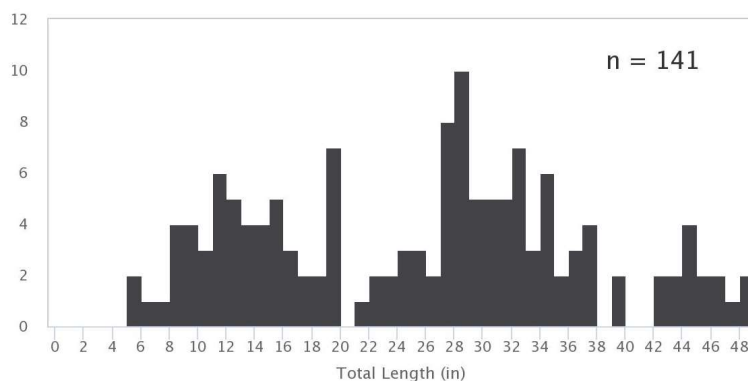


Figure 9. Length frequency histogram of Flathead Catfish sampled at Cheney reservoir via electrofishing in 2022.

## Bonus Fish!



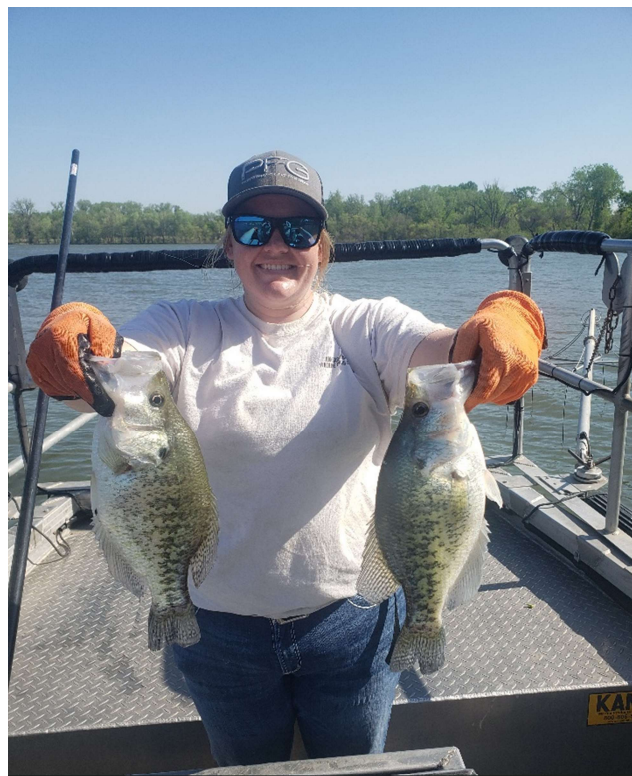
Walleye (>22") sampled at Cheney Reservoir while electrofishing for Shad.



60lb Flathead Catfish sampled at Cheney Reservoir using electrofishing.



41lb Blue Catfish sampled at Cheney reservoir using electrofishing.



Crappie (>14") sampled at Kingman State Fishing Lake while electrofishing for Largemouth Bass.

## Acknowledgements

I would like to thank my interns Lexi Sanborn and Alexis Martin for their help with sampling as well as everything behind the scenes that made sampling possible. I would also like to thank David Breth, James Goff, Travis Riley, Kyle Abrahamson, and Mark Waters for their help with sampling this spring and summer.

## Spread the word!

If you know someone who would be interested in receiving this newsletter, they can do so by clicking here: <https://ksoutdoors.com/KDWP-Info/News/Newsletter-Request-Forms> and then selecting Cheney Fishing District. If you would no longer like to receive this newsletter, you can do so here: <https://ksoutdoors.com/KDWP-Info/Contact-us> and put “unsubscribe Cheney District Fisheries Newsletter”. If you would like to see something different in future newsletters, please feel free to contact me.

Go rip some lip!

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... and FISH KANSAS!

