STATE: Kentucky

GRANT NO.: F-40-47

GRANT TYPE: Research and Survey

GRANT TITLE: Statewide Fisheries Investigations

SUBSECTION II TITLE: Stream Fisheries Investigations

PERIOD COVERED: 1 April 2024 - 31 March 2025

Research and Survey Section

Subsection II

Project II: Evaluation of new recreational and commercial regulations on catfish in the Ohio River

Project Objectives:

1. Determine abundance (CPUE), size structure, and condition of blue catfish, channel catfish, and flathead catfish in the Ohio River, and evaluate the effects of new regulations on blue, channel, and flathead catfish in the Ohio River, particularly trophy-size catfish.
2. Quantify age, growth, and mortality of the three species in each reach, and compare to previous data to determine if any changes have occurred over time.

A. ACTIVITY

The conflict between commercial fishermen and recreational catfish anglers on the Ohio River has been apparent for nearly a decade, with the main issue being a perceived switch from a harvest market predominantly for flesh to a market for sale of largely trophy fish to pay lakes. In 2013, KDFWR standardized its catfish data collection methods and began expanding the effort river-wide to more accurately estimate population dynamics of blue catfish, channel catfish, and flathead catfish. On December 1, 2014 the following regulation became law:

> Recreational anglers on the main-stem Ohio River are allowed one blue catfish ≥35.0 in, one flathead catfish ≥35.0 in, and one channel catfish ≥28.0 in per day. Harvest of fish below their respective length limits is not regulated.
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> The majority of commercial fishers fishing in the legal waters of the Ohio River and its tributaries are allowed one blue catfish ≥35.0 in, one flathead catfish ≥35.0 in, and one channel catfish ≥28.0 in per day. However, up to 50 commercial fishers (this number was reduced to 15 commercial fishers in 2019) that harvested over 10,000 lbs of catfish in at least 2 of the last 3 years along with an additional six commercial fishers, who are chosen by a lottery drawing, are allowed a daily harvest of four (in aggregate) blue catfish and flathead catfish ≥40.0 in and channel catfish ≥30.0 inches in Kentucky's portion of the Ohio River and its tributaries open to commercial fishing below Cannelton Lock and Dam. Harvest of fish below their respective length limits is not regulated.

Accusations by recreational anglers that overharvest was still occurring on the Ohio River surfaced again in 2018. Multiple meetings were held with KDFWR staff, recreational anglers, commercial fishers, and paylake owners to work towards another compromise. Several regulations were proposed and submitted for review. At the time of this report the following regulations have been made law:

> The number of commercial fishers awarded trophy permits was reduced to 15 (previously 50).

There will be no more than two licensed commercial fishers per boat. If more are present, they may only keep two limits of trophy catfish.

A possession limit (twice the daily limit) was placed on trophy catfish for commercial fishers. This applies when on the water and when trailering fish.

Regulations talk resurfaced once again, and KDFWR suggested the following regulations which were passed unanimously by the Commission and went into effect in summer 2024:

All commercial fishers are allowed one blue catfish ≥35.0 in, one flathead catfish ≥35.0 in, and one channel catfish ≥28.0 in per day on commercially fishable waters statewide. Trophy permit harvest is now only allowed on the Ohio River from Cannelton Dam downriver to the Ohio River's confluence with the Mississippi River. As a result, tributaries such as Green River, Cumberland River, and Tennessee Rivers no longer are open to trophy permit harvest laws. Additionally, Lake Barkley and Kentucky Lake now have protective regulations.

Commercial fishing on several waterbodies across the state was closed permanently due to low use, low harvest, and/or low abundance of fish (identified by KDFWR sampling and commercial harvest records). The following waterbodies were closed: Barren River, Licking River, Rough River, Tradewater River, Salt River, Eagle Creek, Highland Creek, North Fork Kentucky River, South Fork Kentucky River, and Panther Creek.

Trotlines—CPUE of blue catfish in 2024 was 5.3 fish/50 hooks. Catch rate of blue catfish had been gradually increasing since 2013 until 2023. Catch rate of trophy-size (≥35.0 in) blue catfish has remained consistent since 2018.

Hoop nets—Catch rate of channel catfish was 2.6 fish/net-night which is the highest since 2019. Flathead catfish CPUE was 1.0 fish/net-night, and was just below the historical average (CPUE 1.1 fish/net-night). Unseasonably low flow and below average water temperatures during the 2023 and 2024 sampling season likely had negative impacts on catch rates.

Electrofishing—Electrofishing was conducted on the Kentucky River and Green River. Catch rate of blue catfish in the Kentucky River (CPUE = 2.8 fish/hr) and Green River (CPUE = 3.2 fish/hr) were much lower than expected and compared to historical averages in the Ohio River. Flathead catfish in the Kentucky River (CPUE = 26.9 fish/hr) and Green River (CPUE = 32.4 fish/hr) were slightly lower than Ohio River averages. Additionally size structure of both blue catfish and flathead catfish in the Kentucky River and Green River were noticeably skewed towards smaller fish compared to the Ohio River.

B. TARGET DATES FOR ACHIEVEMENT AND ACCOMPLISHMENTS

Planned achievement date - 31 March 2025
Work accomplished - 31 March 2025

C. SIGNIFICANT DEVIATIONS

No electrofishing sampling occurred on the Ohio River. Instead, electrofishing and an age and growth sample were conducted on the Kentucky River and Pools 1 – 3 of the Green River.

D. REMARKS

NONE

E. RECOMMENDATIONS

Continue sampling blue catfish, channel catfish, and flathead catfish using approved methods.

Project II: Evaluation of new recreational and commercial regulations on catfish in the Ohio River

FINDINGS

Commercial fishing for catfish has long existed on the Ohio River; however, harvesting trophy-sized fish to sell to pay lake owners has become more prevalent while a market for flesh also remains popular. At the same time, catch and release trophy catfishing has become extremely popular for recreational anglers on the Ohio River. Different viewpoints on how the fishery should be managed has led to conflict between recreational anglers and commercial anglers. Recreational catfish anglers came to KDFWR asking for more stringent regulation for both recreational and commercial anglers, because of a perceived decline in trophy catfish numbers. KDFWR began looking at some basic population parameters of the three major catfish species (blue catfish, channel catfish, flathead catfish) in the Ohio River beginning in 2004. The study was initiated to obtain baseline information on length frequency, weight, and age profiles of these three species and determine methods to more effectively sample each of these species. The conflict was again brought up at a commission meeting in 2012 and it was decided that one additional year of intense sampling would be conducted before a decision on potential regulations was made. Data prior to 2013 was collected from different pools each year and lacked the consistency and standardization to effectively monitor trends of catfish populations in the Ohio River. In 2013 methods for all gear types were standardized and additional effort was put towards sampling to more accurately estimate population dynamics of blue catfish, channel catfish, and flathead catfish in the Ohio River.

A public meeting was held in October 2013 to present catfish data that had been gathered during this project and discuss potential regulations that may be put in place. Both recreational and commercial anglers were in attendance and given the opportunity to share their thoughts and suggestions. In November 2013, the following regulations designed to give some protection to trophy catfish were proposed to the Fisheries Committee:

> Recreational anglers on the main-stem Ohio River will be allowed one blue catfish ≥35.0 in, one flathead catfish ≥35.0 in, and one channel catfish ≥28.0 in per day. Harvest of fish below their respective length limits will not be regulated.
>
> The majority of commercial fishers fishing in the legal waters of the Ohio River and its tributaries will be allowed one blue catfish ≥35.0 in, one flathead catfish ≥35.0 in, and one channel catfish ≥28.0 in per day. However, 44 commercial fishers that harvested over 10,000 lbs of catfish in at least 2 of the last 3 years along with an additional six commercial fishers, who will be chosen by a lottery drawing, will be allowed a daily harvest of four (in aggregate) blue catfish and flathead catfish ≥40.0 in and channel catfish ≥30.0 inches in Kentucky's portion of the Ohio River and its tributaries open to commercial fishing below Cannelton Lock and Dam. Harvest of fish below their respective length limits will not be regulated.

After hearing comments from stakeholders in attendance and discussion with the Fisheries Division Director, the Fisheries Committee voted unanimously to pass the proposed regulations on to the full Commission. The regulations were passed by the full Commission at their meeting in December 2013. In June 2014, the regulation was made law; however, an injunction on the regulation was filed by commercial fishers shortly after its enactment and regulations on commercial fishers were not enforceable until December 1, 2014.

Accusations by recreational anglers that overharvest was still occurring on the Ohio River surfaced again in 2018. A working group comprised of the KDFWR Fisheries Committee, KDWFR Director of Fisheries and staff biologist, recreational anglers, commercial fishermen, and paylake owners was formed so that all parties were represented in discussions. Multiple workgroup meetings were held to work towards another compromise. Several regulations were proposed and submitted for review. At the time of this report the following regulations have been made law:

> The number of commercial fishers awarded trophy permits is 15 (previously 50).

No more than two licensed commercial fisherman per boat. If more are present, they may only keep two limits of trophy catfish.

A possession limit (twice the daily limit) was placed on trophy catfish for commercial fishers. This applies when on the water and when trailering fish.

Regulations talk resurfaced once again, and KDFWR suggested the following regulations which were passed unanimously by the Commission in 2023 and became law in 2024:

All commercial fishers are allowed one blue catfish ≥35.0 in, one flathead catfish ≥35.0 in, and one channel catfish ≥28.0 in per day on commercially fishable waters statewide. Trophy permit harvest is now only allowed on the Ohio River from Cannelton Dam downriver to the Ohio River's confluence with the Mississippi River.

Commercial fishing on several waterbodies across the state was closed permanently due to low use, low harvest, and/or low abundance of fish (identified by KDFWR sampling).

A compilation of all 2024 catfish sampling activities is summarized in Table 1.

Trotline Surveys

During summer 2024 trotlines (50 hooks/line) baited with fresh cut rough fish (primarily smallmouth buffalo and silver carp) were used to sample blue catfish. KDFWR crews completed sampling in the Meldahl, Cannelton, and Smithland pools of the Ohio River, and Indiana Department of Natural Resources sampled the JT Myers Pool. One hundred twenty-one total trotlines were fished throughout those pools: 32 in Meldahl Pool, 35 in Cannelton Pool, 31 in JT Myers Pool, and 23 in Smithland Pool (Table 2). CPUE of blue catfish (CPUE=5.3 fish/hr) did not change from the previous year and was just slightly below average since changing methods in 2018 (Table 3).

Blue catfish collected with trotlines ranged from 13.1 – 47.5 in with a mean length of 28.3 in (Table 4). Trophy blue catfish were captured in all pools sampled during trotline sampling and accounted for 10.5% of the total sample (up from 8.2% in 2022 and from 9.6% in 2023). Trotline catch rates for different size groups of each species of catfish were also examined (Table 5). Due to the change in trotline methods in 2018, comparisons with previously collected data should be made with caution. All size groups examined were nearly identical to 2023 catch rates.

Trotline CPUE and size structure of blue catfish in the JT Myers and Smithland pool was once again lower than expected based on findings in the Meldahl and Cannelton pools. The Meldhal and Cannelton pools have displayed consistently higher CPUE (total and trophy fish) than the JT Myers and Smithland pools since 2017. The majority of commercial harvest occurs on the trophy permit section, and invasive carp biomass is continually increasing in this part of the river. Both of these factors could play a role in lower catch rates. Electrofishing CPUE and size structure don't follow this same trend. Differences in available habitat and behavioral tendencies (due to invasive carp) are potential causes for this difference in catchability. If results from different gear types start to align, potential changes in harvest regulations should be examined.

Hoop Net Surveys

Channel catfish hoop net surveys—Department hoop netting was conducted in the Meldahl, Cannelton, and Smithland pools to gather data from hoop net catch of channel catfish. Single nets baited with ZOTE® soap were set overnight for three consecutive net nights in the main stem of the Ohio River. Hoop nets were fished for a total of 174 net-nights: 63 in Meldahl Pool, 84 in Cannelton Pool, and 27 in Smitland Pool (Table 6). Overall catch rate of channel catfish was 2.6 fish/net-night. This is double the CPUE from 2023, but still below the historical average of 3.6 fish/net-night (Table 7).

Lengths of channel catfish ranged from 5.8 – 28.0 in with a mean length of 15.8 in (Table 8). Trophy channel catfish were only captured in the Smithland Pool and accounted for less than 1.0% of the total catch Hoop net catch rates were also examined for different size groups of channel catfish. Channel catfish catch rates for all size groups examined higher than the record lows of 2023, but still below their historical averages (Table 9).

Flathead catfish hoop net surveys—Netting was conducted simultaneously with baited channel catfish hoop nets in the Meldahl, Cannelton, and Smithland pools. Singles nets were set overnight for three consecutive nights in the main stem of the Ohio River. Hoop nets were fished for a total of 177 net-nights: 57 in the Meldahl Pool, 90 in the Cannelton Pool, and 30 in the Smithland Pool (Table 10). Overall CPUE of flathead catfish was 1.0 fish/net-night which is slightly below average (Table 11).

Lengths of flathead catfish ranged from 16.5 – 45.3 in with a mean length of 26.3 in (Table 12). Hoop net catch rates of different size groups were also examined. CPUE for all size classes except the 20.0 – 29.9 in size group were identical to 2023 catch rates (Table 13). Trophy flathead catfish (≥35.0 in) were observed in all pools sampled and captured at 0.1 fish/net-night. Size structure shifted towards smaller fish compared to the 2023 sample. Trophy flathead catfish accounted for 14.5% of the total catch in 2023, but decreased to 6.0% in 2024.

Catch rates of of both channel catfish and flathead catfish in hoop nets have been steadily declining over the past 4 – 7 years. Hoop net CPUE can be highly influence by flow and temperature. Unseasonably low flow and below average water temperatures during the 2023 and 2024 sampling season likely had negative impacts on catch rates. Electrofishing catch rates of flathead catfish have been increasing since 2004 and provide a more accurate representation in years when hoop net sampling conditions are not ideal.

Electrofishing Surveys

No electrofishing sampling occurred on the Ohio River. Instead, electrofishing was conducted on two of the larger commercially fishable tributaries to the Ohio River: the Kentucky River and Pools 1 – 3 of the Green River.

Kentucky River—Low-pulse DC electrofishing was conducted in all 14 pools of the Kentucky River. A total of 24.0 hr of electrofishing effort was conducted resulting in a total catch of 67 blue catfish and 646 flathead catfish (Table 14). CPUE of blue catfish was 2.8 fish/hr, with just one fish being collected upriver of Lock and Dam 4. Flathead catfish were collected in all pools and CPUE was 26.9 fish/hr.

Blue catfish collected with electrofishing ranged from 10.9 – 27.3 in with a mean length of 14.5 in (Table 15). Electrofishing catch rates were also examined for different size groups of blue catfish (Table 16). The majority of blue catfish collected were in the 12.0 – 19.9 in size group and no fish >30.0 in were observed.

Flathead catfish lengths ranged from 4.2 – 43.2 in with a mean length of 11.5 in (Table 17). CPUE by size group decreased as size increased. Over 95.0% of the sample consisted of fish <20.0 in and the majority of fish were <12.0 in (Table 16). While size structure was heavily skewed towards smaller fish, trophy flathead catfish were observed in a few locations.

Green River—Low pulse electrofishing was conducted on the commercially fishable portion of Green River (pools 1 – 3). A total of 14.0 hr of electrofishing efforts was conducted resulting in a total catch of 45 blue catfish and 454 flathead catfish (Table 18). Blue catfish were captured in all pools sampled at a rate of 3.2 fish/hr. Flathead catfish were also captured in all pools, but at a much higher rate (CPUE = 32.4 fish/hr).

Blue catfish collected with electrofishing ranged from 3.6 – 33.7 in with a mean length of 14.5 in (Table 19). Electrofishing catch rates were also examined for different size groups of blue catfish (Table 20).

As with the Kentucky River, the majority of blue catfish collected were <20.0 in and no trophy blue catfish were observed.

Flathead catfish lengths ranged from 4.4 – 41.4 in with a mean length of 12.2 in (Table 19). CPUE by size group decreased as size increased. Over 90.0% of the sample consisted of fish <20.0 in and the majority of fish were <12.0 in (Table 20). Trophy flathead catfish were only observed in Pool 1.

Relative Weight

Ohio River—Relative weight (Wr) was also calculated for each species of catfish. Fish collected from all sampling methods used in 2024 were combined to provide a more representative estimate for the entire population of each catfish species. Overall Wr of blue catfish (N=583) in 2024 was 102 (Table 21). Flathead catfish (N=166) overall relative weight was 95, and channel catfish (N=384) overall relative weight was 97.

Kentucky River—Fish collected during electrofishing surveys were used to calculate relative weight values for blue catfish and flathead catfish. Overall Wr of blue catfish (N=56) in 2024 was 101, and overall Wr of flathead catfish was 98 (N=639) indicating that both species are in great shape. This is encouraging since the available forage base of the Kentucky River can have extreme fluctuations from year to year.

Green River—Fish collected during electrofishing surveys were used to calculate relative weight values for blue catfish and flathead catfish. Overall Wr for both blue catfish (N=23) and flathead catfish (N=322) in 2024 was excellent with a value of 107. The green river is a highly productive system, and fish should continue to exhibit good condition in future samples.

Age and Growth

In spring 2024, otoliths (up to 10 per inch class) were taken from blue catfish and flathead catfish to assess growth rates for each species in the Kentucky and Green rivers. Von Bertalanffy growth equations were calculated for each species. Growth was compared between rivers as well as with growth from fish in the Ohio River (2023 sample). Von bertalanffy growth parameters for each river can be seen in Table 22.

Blue catfish—A subsample of 57 otoliths were taken from blue catfish from the 14 pools of the Kentucky River. Ages of fish ranged from 3 - 13 years, but many year classes were not observed in the sample. The von Bertalanffy growth curved estimated that a blue catfish would take 20.5 years to reach trophy size (≥35.0 in; Table 23; Figure 1) in the Kentucky River. Further analysis between pools or sex was deemed invaluable due to a small sample size and was thus not conducted.

A subsample of 44 otoliths were taken from blue catfish from pools 1 – 3 of the Green River. Ages ranged from 1 – 20 years with most year classes between present in the sample. On average blue catfish in the Green River were estimated to reached trophy size (≥35.0 in) in 24.2 years (Table 23; Figure 1). As with the Kentucky River, no further analyses between pools or sex were conducted due to inadequate sample size.

Further analysis using ANCOVA was done to test for differences in blue catfish growth between the Kentucky and Green Rivers as well as the Ohio River. Blue catfish in the Kentucky River exhibited faster growth than those in the Green River (F = 26.1, p = <0.01); however, blue catfish achieved greater lengths in the Green River due to increased longevity. Both the Kentucky River (F = 5.61, p = 0.03) and the Green River (F = 17.4, p = <0.01) exhibited slower growth than the Ohio River.

Flathead catfish—A subsample of 168 otoliths were taken from flathead catfish from the Kentucky River. Ages ranged from 1 – 29 with nearly all year classes present. Flathead catfish reached trophy size (≥35.0

in) in 33.9 years based on von Bertalanffy growth estimates (Table 24; Figure 1), meaning most flathead catfish in the Kentucky River will not attain trophy status. Due to high length-at-age variance and reduced sample sizes, reliable pool specific and sex specific von Bertalanffy estimates were not able to be calculated and further analysis was not conducted.

A subsample of 191 otoliths were taken from flathead catfish from the Green River. Ages ranged from 1 – 28 with nearly all year classes accounted for. Flathead catfish reached trophy size (≥35.0 in) in 23.3 years based on von Bertalanffy growth estimates (Table 24; Figure 1). As with the Kentucky River further analysis on pool specific and sex specific growth was not conducted due to reduced sample size and high variance in length at age.

Further analysis using ANCOVA was done to test for differences in flathead catfish growth between the Kentucky River and Green River as well as the Ohio River. Flathead catfish in the Green River exhibited faster growth than those in the Kentucky River (F = 16.0, p = <0.01). Flathead catfish in the Kentucky River grew slower than those in the Ohio river (F = 5.37, p = 0.02). Flathead catfish growth in the Green River was not significantly different than in the Ohio River (F = 1.93, p = 0.17).

Mortality

Total annual mortality estimates were made on all three species of catfish based off length-at-age of capture data from otoliths and paired with unaged catfish collected with multiple sampling techniques in 2023. Length frequency data from 2024 was paired with the 2022/2023 age-length key to provide mortality estimates. Using Fishery Analysis and Modeling Simulator (FAMS), a separate weighted catch-curve regression was run on each species of catfish for each sampling method to calculate a range of total annual mortality estimates. As a precautionary step, the highest mortality estimate calculated for each species is reported to avoid underestimates and potentially masking problems in the populations. ANCOVA was then used to test for differences in mortality between rivers. Mortality was not able to be compared with the Ohio River due to different gear types being used to calculate mortality.

Blue catfish—In 2024, total annual mortality for blue catfish in the Ohio River was 27.6%, which is the highest estimate since the project began (Table 25). Total annual mortality was estimated at 31.2% in the Kentucky River, and just 9.4% in the Green River. Mortality was significantly higher in the Kentucky River than the Green River (F = 6.54, p = 0.02). There was no difference in mortality rates between the Kentucky River and Ohio River (F = 0.30, p = 0.59), but the Green River had significantly lower mortality estimates than the Ohio River (F = 29.75, p = <0.01). Estimates for the Kentucky River and Green River were based on very small sample sizes so should be viewed with caution.

Channel catfish—Channel catfish total annual mortality in the Ohio River was 22.2% (Table 25) in 2024 which is slightly higher than 2023, but very close to the historical average.

Flathead catfish— In 2024, total annual mortality for flathead catfish in the Ohio River was 11.5%, which is the lowest estimate since the project began; however, this number was only able to be estimated using hoop nets which had a lower sample than electrofishing typically uses (Table 25). Total annual mortality was estimated at 19.7% in the Kentucky River, and 20.2% in the Green River. There was no statistical difference between mortality in the Kentucky River and Green River (F = 0.19, p = 0.66). Additionally, there was no statistical difference between the Kentucky River and the Ohio River (F = 0.01, p = 0.92) or between the Green River and the Ohio River (F = 0.78, p = 0.38).

Commercial Fishing Industry

Commercial fishing for catfish has long been present in the Ohio River, but concerns of potential overharvest have warranted further investigations. Harvest of blue catfish has been fairly stable since record keeping began in 1999 (Figure 2). Low points in blue catfish harvest are likely related to extended high water that did not allow gear to be effectively fished. Record harvest of blue catfish (388,274 lbs)

was observed in 2021. Channel catfish harvest has been lower than blue catfish, but has followed a similar trend. Harvest of channel catfish increased from 2002 – 2011 then gradually declined from 2013 - 2023. Channel catfish harvest in 2023 was 60,371 lbs and was the lowest recorded since 2003. Flathead catfish harvest has mirrored channel catfish harvest since records began in 1999 and began decreasing in 2013. Flathead catfish harvest in 2024 was 66,909 lbs and was among lowest on record. Unfortunately, commercial fish harvest reports do not include detailed information about gear (number of net nights, baited vs. unbaited, length of gillnet, etc.); however, the number of hooks fished for trotlines as well as number of hoop nets fished is required to be reported. Although trotline and hoop net harvest should not be considered indicative of the entire commercial catfish harvest, it is the best available method to analyze trends in commercial catfish harvest rates. Effort (number of hooks for trotlines and number of nets for hoop nets) and pounds harvested by method were examined to determine if harvest rates varied over the years. Trotlines are more effective at capturing blue catfish, while hoop nets are more effective when targeting flathead catfish according to commercial harvest data. Channel catfish appear to be captured efficiently by both trotlines and hoop nets. Each species was examined according to the most effective gear. The harvest rate of blue catfish increased gradually from 1999 – 2022; however, the previous two years have both been records highs. One low point in harvest in 2004 was likely a result of high water/poor fishing conditions (Figure 3). Recent years with decreases in total pounds of catfish harvested are likely not a result of decreased harvest rates, but rather a decrease in effort. The harvest rate remaining high in years where harvest is lower indicates that the amount of fish harvested is not solely a result of increased effort. Channel catfish trotline harvest rates has been extremely consistent since 1999 (Figure 3). Channel catfish and flathead catfish harvest in commercial nets have both typically remained between 5 – 15 pounds/net since 1999; however, a drastic spike in harvest occurred in 2012 and 2013 (Figure 4). Reasons for this extreme peak in harvest are not known, but could be a result of prolonged favorable fishing conditions or demand for fish.

Table 1. Summary of 2024 catfish sampling sites by waterbody, pool, river mileage, sampling method, species (B=blue catfish, C=channel catfish, and F=flathead catfish), date, and river conditions.

Waterbody	Pool	Location	River mile	Sampling method	Species	Date	Water temp.	Water level (USGS gauge station)	Comments
Ohio River	Meldahl	Manchester Island	392.2 - 398.0	Hoop nets	C,F	4/30/2024	60.0	18.11' @ Greenup Dam	Setting nets
Ohio River	Meldahl	Manchester Island	392.2 - 398.0	Hoop nets	C,F	5/2/2024	61.8	16.75' @ Greenup Dam	Pulling nets
Ohio River	Cannelton	Wolf Creek	667.4 - 677.1	Hoop nets	C,F	5/6/2024	65.2	16.44' @ Louisville, KY	Setting nets
Ohio River	Cannelton	Wolf Creek	667.4 - 677.1	Hoop nets	C,F	5/9/2024	66.3	29.36' @ Louisville, KY	Pulling nets
Ohio River	Meldahl	Wheelersburg	344.2 - 353.0	Hoop nets	C,F	5/13/2024	65.4	19.77' @ Greenup Dam	Setting nets
Ohio River	Meldahl	Wheelersburg	344.2 - 353.0	Hoop nets	C,F	5/16/2024	65.6	19.26' @ Greenup Dam	Pulling nets
Ohio River	Smithland	Birdsville	917.2 - 910.3	Hoop nets	C,F	5/20/2024	70.3	23.27' @ JT Myers Dam	Setting nets
Kentucky River	1	Big Twin Creek	17.3 -21.6	Electrofishing	B,F	5/21/2024	71.6	10.14' @ Lock and Dam 2	Annual sample
Kentucky River	1	Gratz	28.5 - 31.0	Electrofishing	B,F	5/21/2024	71.9	10.14' @ Lock and Dam 2	Annual sample
Kentucky River	2	Monterey	35.5 - 42.0	Electrofishing	B,F	5/22/2024	70.7	9.22' @ Lock and Dam 3	Annual sample
Kentucky River	3	Elkhorn Creek	52.8 - 47.0	Electrofishing	B,F	5/22/2024	69.1	8.09' @ Lock and Dam 4	Annual sample
Kentucky River	13	Sturgeon Creek	249.0 - 245.6	Electrofishing	B,F	5/22/2024	73.8	10.17' @ Lock and Dam 14	Annual sample
Kentucky River	14	Beattyville	251.8 - 254.7	Electrofishing	B,F	5/22/2024	73.1	10.17' @ Lock and Dam 14	Annual sample
Ohio River	Smithland	Birdsville	917.2 - 910.3	Hoop nets	C,F	5/23/2024	71.5	22.90' @ JT Myers Dam	Pulling nets
Ohio River	Cannelton	Brandenburg	638.3 - 649.3	Hoop nets	C,F	5/28/2024	70.3	18.79' @ Louisville, KY	Setting nets
Ohio River	Cannelton	Brandenburg	638.3 - 649.3	Hoop nets	C,F	5/31/2024	71.0	16.12' @ Louisville, KY	Pulling nets
Ohio River	Meldahl	Dover	411.8 - 420.5	Hoop nets	C,F	6/3/2024	72.1	14.81' @ Greenup Dam	Setting nets
Kentucky River	3	Steele Branch	53.6 - 59.2	Electrofishing	B,F	6/3/2024	69.2	8.09' @ Lock and Dam 4	Annual sample
Kentucky River	4	East-West Connector	68.9 - 76.2	Electrofishing	B,F	6/3/2024	66.7	10.36' @ Lock and Dam 5	Annual sample
Kentucky River	4	Clifton	78.1 - 82.2	Electrofishing	B,F	6/3/2024	66.0	10.36' @ Lock and Dam 5	Annual sample
Kentucky River	5	Below Tyrone	82.8 - 84.9	Electrofishing	B,F	6/4/2024	69.2	11.25' @ Lock and Dam 6	Annual sample
Kentucky River	5	Above Tyrone	87.5 - 96.2	Electrofishing	B,F	6/4/2024	69.1	11.25' @ Lock and Dam 6	Annual sample
Kentucky River	11	Irvine	218.2 - 220.9	Electrofishing	B,F	6/4/2024	70.7	11.28' @ Lock and Dam 12	Annual sample
Kentucky River	12	Ravenna	224.6 - 227.4	Electrofishing	B,F	6/4/2024	71.9	12.46' @ Lock and Dam 12	Annual sample
Kentucky River	12	Lock and Dam 13 Tailwater	235.8 - 239.9	Electrofishing	B,F	6/4/2024	70.7	12.46' @ Lock and Dam 12	Annual sample
Ohio River	Meldahl	Dover	411.8 - 420.5	Hoop nets	C,F	6/6/2024	73.6	17.53' @ Greenup Dam	Pulling nets
Kentucky River	10	Otter Creek	184.4 - 190.0	Electrofishing	B,F	6/10/2024	74.7	12.04' @ Lock and Dam 11	Annual sample
Kentucky River	10	College Hill	192.8 - 201.0	Electrofishing	B,F	6/10/2024	73.2	12.04' @ Lock and Dam 11	Annual sample
Kentucky River	11	Drowning Creek	204.2 - 207.9	Electrofishing	B,F	6/10/2024	73.2	9.85' @ Lock and Dam 12	Annual sample
Kentucky River	8	Poosey Ridge	147.8 - 157.5	Electrofishing	B,F	6/11/2024	70.8	12.13' @ Lock and Dam 9	Annual sample
Kentucky River	8	John Nickell Ramp	140.5 - 145.5	Electrofishing	B,F	6/11/2024	70.5	12.13' @ Lock and Dam 9	Annual sample
Ohio River	Cannelton	Cloverport	703.0 - 710.8	Hoop nets	C,F	6/11/2024	73.6	15.29' @ Louisville, KY	Setting nets
Kentucky River	6	Oregon Road	97.1 - 103.7	Electrofishing	B,F	6/12/2024	71.8	9.91' @ Lock and Dam 7	Annual sample
Kentucky River	6	Nonesuch	106.8 - 117.0	Electrofishing	B,F	6/12/2024	70.8	9.91' @ Lock and Dam 7	Annual sample
Kentucky River	7	High Bridge	120.3 - 130.7	Electrofishing	B,F	6/12/2024	79.2	12.65' @ Lock and Dam 8	Annual sample
Kentucky River	7	Camp Nelson	135.3 - 139.9	Electrofishing	B,F	6/12/2024	74.0	12.65' @ Lock and Dam 8	Annual sample
Kentucky River	9	Boonesborough	172.0 - 176.4	Electrofishing	B,F	6/12/2024	71.8	10.64' @ Lock and Dam 10	Annual sample
Ohio River	Cannelton	Cloverport	703.0 - 710.8	Hoop nets	C,F	6/14/2024	73.5	12.41' @ Louisville, KY	Pulling nets
Green River	2	Rochester	102.9 - 108.5	Electrofishing	B,F	6/17/2024	69.7	7.94' @ Lock and Dam 4	Annual sample
Green River	3	Morgantown	140.1 - 143.9	Electrofishing	B,F	6/17/2024	73.5	7.94' @ Lock and Dam 4	Annual sample
Green River	3	Woodbury	146.5 - 149.0	Electrofishing	B,F	6/17/2024	73.4	7.94' @ Lock and Dam 4	Annual sample
Green River	2	Central City	83.1 - 89.7	Electrofishing	B,F	6/20/2024	77.6	4.12' @ Paradise, KY	Annual sample
Green River	2	Rockport	91.1 - 98.0	Electrofishing	B,F	6/20/2024	76.4	4.12' @ Paradise, KY	Annual sample

Table 1. Continued

Waterbody	Pool	Location	River mile		Species	Date	Water temp.	Water level (USGS gauge station)	Comments
Green River	1	Spottsville	10.9 - 14.2	Electrofishing	B,F	6/24/2024	78.2	11.69' @ Spottsville, KY	Annual sample
Green River	1	Hamilton Ferry	24.2 - 28.5	Electrofishing	B,F	6/24/2024	78.9	12.05' @ Lock and Dam 2	Annual sample
Green River	1	Sebree	41.5 -46.2	Electrofishing	B,F	6/24/2024	79.8	12.05' @ Lock and Dam 2	Annual sample
Green River	1	Pond River	53.2 - 56.5	Electrofishing	B,F	6/24/2024	78.7	12.05' @ Lock and Dam 2	Annual sample
Green River	1	Rumsey	59.2 - 63.1	Electrofishing	B,F	6/24/2024	78.4	12.05' @ Lock and Dam 2	Annual sample
Green River	2	Calhoun	66.1 - 69.5	Electrofishing	B,F	6/26/2024	77.4	5.81' @ Livermore, KY	Annual sample
Green River	2	Livermore	71.4 - 74.8	Electrofishing	B,F	6/26/2024	78.5	5.81' @ Livermore, KY	Annual sample
Green River	3	Mud River	109.5 - 115.8	Electrofishing	B,F	6/26/2024	76.7	3.46' @ Rockport, KY	Annual sample
Green River	3	Highview Hill	124.0 - 129.5	Electrofishing	B,F	6/26/2024	78.4	3.46' @ Rockport, KY	Annual sample
Ohio River	Meldahl	Manchester Island	390.1 - 401.2	Trotlines	B	7/9/2024	82.4	14.06' @ Greenup Dam	Setting lines
Ohio River	Meldahl	Manchester Island	390.1 - 401.2	Trotlines	B	7/10/2024	81.5	14.21' @ Greenup Dam	Pulling lines
Ohio River	Cannelton	Brandenburg	638.3 - 649.3	Trotlines	B	7/15/2024	82.6	10.46' @ Louisviile, KY	Setting lines
Ohio River	Cannelton	Brandenburg	638.3 - 649.3	Trotlines	B	7/16/2024	83.0	10.85' @ Louisville, KY	Pulling/resetting lines
Ohio River	Cannelton	Brandenburg	638.3 - 649.3	Trotlines	B	7/17/2024	82.9	10.50' @ Louisville, KY	Pulling lines
Ohio River	JT Myers	Newburgh	776.1 - 787.0	Trotlines	B	7/21/2024	85.9	12.49' @ Newburgh Dam	Setting lines (INDNR)
Ohio River	JT Myers	Newburgh	776.1 - 787.0	Trotlines	B	7/22/2024	86.0	13.75' @ Newburgh Dam	Pulling/resetting lines (INDNR)
Ohio River	Smithland	Old Shawneetown	855.0 - 863.0	Trotlines	B	7/22/2024	81.0	14.38' @ JT Myers Dam	Setting lines
Ohio River	Smithland	Old Shawneetown	855.0 - 863.0	Trotlines	B	7/23/2024	80.8	16.11' @ JT Myers Dam	Pulling lines
Ohio River	JT Myers	Newburgh	776.1 - 787.0	Trotlines	B	7/23/2024	85.0	13.77' @ Newburgh Dam	Pulling lines (INDNR)
Ohio River	Meldahl	Dover	423.3 - 412.2	Trotlines	B	7/29/2024	82.6	13.32' @ Greenup Dam	Setting lines
Ohio River	Meldahl	Dover	423.3 - 412.2	Trotlines	B	7/30/2024	80.7	13.68' @ Greenup Dam	Pulling/resetting lines
Ohio River	Meldahl	Dover	423.3 - 412.2	Trotlines	B	7/31/2024	82.7	14.34' @ Greenup Dam	Pulling lines
Ohio River	JT Myers	Mount Vernon	829.0 - 835.0	Trotlines	B	8/4/2024	85.1	14.42' @ Newburgh Dam	Setting lines (INDNR)
Ohio River	JT Myers	Mount Vernon	829.0 - 835.0	Trotlines	B	8/5/2024	86.0	14.81' @ Newburgh Dam	Pulling/resetting lines (INDNR)
Ohio River	Meldahl	Wheelersburg	342.5 - 352.6	Trotlines	B	8/5/2024	82.5	14.28' @ Greenup Dam	Setting lines
Ohio River	Meldahl	Wheelersburg	342.5 - 352.6	Trotlines	B	8/6/2024	82.6	14.51' @ Greenup Dam	Pulling lines
Ohio River	JT Myers	Mount Vernon	829.0 - 835.0	Trotlines	B	8/6/2024	87.0	14.21' @ Newburgh Dam	Pulling lines (INDNR)
Ohio River	Cannelton	Wolf Creek	671.0 - 681.2	Trotlines	B	8/8/2024	83.1	13.32' @ Louisville, KY	Setting lines
Ohio River	Cannelton	Wolf Creek	671.0 - 681.2	Trotlines	B	8/9/2024	82.8	13.74' @ Louisville, KY	Pulling lines
Ohio River	Cannelton	Cloverport	702.9 - 715.1	Trotlines	B	8/13/2024	82.8	12.73' @ Louisville, KY	Setting lines
Ohio River	Cannelton	Cloverport	702.9 - 715.1	Trotlines	B	8/14/2024	84.0	10.66' @ Louisville, KY	Pulling lines
Ohio River	Smithland	Birdsville	905.0 - 917.2	Trotlines	B	8/21/2024	79.5	13.19' @ JT Myers Dam	Setting lines
Ohio River	Smithland	Birdsville	905.0 - 917.2	Trotlines	B	8/22/2024	79.5	13.26' @ JT Myers Dam	Pulling lines

Table 2. CPUE (fish/line) of blue catfish collected during trotline surveys on the Ohio River in summer 2024. Standard errors are in parentheses.

Pool	No. of trotlines	No. of Blue Catfish	CPUE
Meldahl	32	175	5.5 (0.5)
Cannelton	35	312	8.9 (0.7)
JT Myers	31	62	2.0 (0.5)
Smithland	23	90	3.9 (0.4)
Total	121	639	5.3 (0.4)

Table 3. CPUE (fish/line) of blue catfish collected during trotline surveys on the Ohio River during summer from 2004 - 2024. Standard errors are in parentheses.

Year	CPUE
2004	1.5 (0.3)
2005	1.5 (0.4)
2006	6.6 (1.2)
2007	2.4 (0.5)
2008	5.9 (0.7)
2010	4.0 (0.4)
2011	3.9 (0.6)
2012	3.0 (0.8)
2013	1.2 (0.2)
2014	1.3 (0.1)
2015	1.6 (0.2)
2016	2.8 (0.2)
2017	2.0 (0.2)
2018*	5.2 (0.4)
2019*	5.9 (0.4)
2020*	5.4 (0.3)
2022*	7.1 (0.6)
2023*	5.3 (0.4)
2024*	5.3 (0.4)
Mean**	5.6 (0.2)

*New methods were adopted for trotlining including changes in bait and style of dropper lines.
**Mean calculated from 2018 - 2023 data after changing methods.

Table 4. Length frequency and CPUE (fish/line) of blue catfish collected during trotline surveys on Ohio River in summer 2024. Standard errors are in parentheses.

	Inch class																																			
Pool	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	Total	CPUE
Meldahl				1			1	3	2	1	3	2	8	14	13	18	23	18	21	17	5	2	9	5	2	1	1	1		2	1			1		175	5.5 (0.5)
Cannelton			2	1	1	6	1	3	9	5	18	21	29	45	38	30	24	16	22	7	4	6	8	5	6	2	1		2							312	8.9 (0.7)
JT Myers		1			1	1	3	7	1	5	5	1	5		2	3	4	5	5	2	1	2	3	2	2	1										62	2.0 (0.5)
Smithland	1	2			2	3	2	3	1	4	6	3	4	9	8	10	3	3	6	4	4		2	1	4		1		1		1		1		1	90	3.9 (0.4)
Total	1	3	2	2	4	10	7	16	13	15	32	27	46	68	61	61	54	42	54	30	14	10	22	13	14	4	3	1	3	2	2		1	1	1	639	5.3 (0.4)

Table 5. CPUE (fish/line) by size group of blue catfish collected during trotline surveys on the Ohio River during summer from 2004 - 2023. Standard errors are in parentheses.

	Size group (in)					
Year	<12.0	12.0 - 19.9	20.0 - 29.9	30.0 - 34.9	≥35.0	Total
2004	0.0	0.3 (0.2)	0.9 (0.2)	0.3 (0.2)	0.1 (0.1)	1.5 (0.3)
2005	0.0	<0.1 (<0.1)	1.0 (0.6)	0.2 (0.1)	0.2 (0.1)	1.5 (0.4)
2006	<0.1 (<0.1)	0.8 (0.2)	5.0 (1.0)	0.6 (0.2)	0.2 (0.1)	6.6 (1.2)
2007	0.0	0.3 (0.1)	1.5 (0.4)	0.5 (0.2)	0.1 (<0.1)	2.4 (0.5)
2008	0.0	0.6 (0.2)	4.1 (0.8)	1.0 (0.1)	0.1 (0.1)	5.9 (0.7)
2010	0.0	0.2 (<0.1)	1.9 (0.3)	1.1 (0.3)	0.7 (0.2)	4.0 (0.4)
2011	0.0	0.2 (0.1)	2.7 (0.5)	0.9 (0.3)	0.3 (0.1)	3.9 (0.6)
2012	0.1 (<0.1)	0.7 (0.3)	1.7 (0.3)	0.3 (0.2)	0.2 (0.1)	3.0 (0.8)
2013	0.1 (<0.1)	0.3 (0.1)	0.6 (0.1)	0.1 (<0.1)	<0.1 (<0.1)	1.2 (0.2)
2014	<0.1 (<0.1)	0.5 (0.1)	0.5 (0.1)	0.2 (<0.1)	0.1 (0.1)	1.3 (0.1)
2015	<0.1 (<0.1)	0.5 (0.2)	0.7 (0.2)	0.3 (0.1)	0.1 (<0.1)	1.6 (0.2)
2016	<0.1 (<0.1)	0.7 (0.2)	1.5 (0.4)	0.5 (0.2)	0.1 (<0.1)	2.8 (0.2)
2017	0.0	0.3 (0.1)	1.4 (0.1)	0.2 (<0.1)	0.1 (<0.1)	2.0 (0.2)
2018*	<0.1 (<0.1)	0.3 (0.1)	3.2 (0.3)	0.9 (0.1)	0.8 (0.1)	5.2 (0.4)
2019*	<0.1 (<0.1)	0.2 (<0.1)	4.2 (0.3)	0.9 (0.1)	0.6 (0.1)	5.9 (0.4)
2020*	0.0	0.1 (<0.1)	3.9 (0.2)	0.7 (0.1)	0.7 (0.1)	5.4 (0.3)
2022*	.03 (.02)	0.3 (0.1)	5.1 (0.5)	1.1 (0.2)	0.6 (0.1)	7.1 (0.6)
2023*	<0.1 (<0.1)	0.4 (0.1)	3.3 (0.3)	1.1 (0.1)	0.5 (0.1)	5.3 (0.4)
2024*	0.0	0.2 (0.1)	3.3 (0.3)	1.2 (0.1)	0.6 (0.1)	5.3 (0.4)
Mean**	<0.1 (<0.1)	0.2 (<0.1)	3.7 (0.1)	1.0 (0.1)	0.6 (0.1)	5.6 (0.2)

*New methods were adopted for trotlining including changes in bait and style of dropper lines.

**Mean calculated from 2018 - 2023 data after changing methods.

Table 6. CPUE (fish/net-night) of channel catfish collected during baited hoop net surveys in Meldahl, Cannelton, and Smithland pools of the Ohio River in spring 2024. Standard errors are in parentheses.

Pool	Effort (net nights)	No. of channel catfish	CPUE
Meldahl	63	233	3.7 (1.4)
Cannelton	84	165	2.0 (0.6)
Smithland	27	53	2.0 (1.2)
Total	174	451	2.6 (0.6)

Table 7. CPUE (fish/net-night) of channel catfish collected during baited hoop net surveys on the Ohio River in spring 2017 - 2024. Standard errors are in parentheses.

Year	CPUE
2017	7.0 (1.0)
2018	3.8 (0.5)
2019	4.5 (0.8)
2021	2.4 (0.5)
2022	2.1 (0.4)
2023	1.3 (0.3)
2024	2.6 (0.6)
Mean	3.6 (0.3)

Table 8. Length frequency and CPUE (fish/net-night) of channel catfish collected during baited hoop net sampling in the Meldahl, Cannelton, and Smithland pools during spring 2024 on the Ohio River. Standard errors are in parentheses.

Pool	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	Total	CPUE
Meldahl				1	18	9	10	14	22	29	33	19	15	26	13	10	7	2	4	1					233	3.7 (1.4)
Cannelton	1	1		4	15	5	2	8	26	28	21	18	4	5	6	4	6	4	5	2					165	2.0 (0.6)
Smithland				1	3	4	3	2	3		4		1	1		3	1	2	4	9	3	5	3	1	53	2.0 (1.2)
Total	1	1		6	36	18	15	24	51	57	58	37	20	32	19	17	14	8	13	12	3	5	3	1	451	2.6 (0.6)

Table 9. CPUE (fish/net-night) by size group of channel catfish collected during baited hoop net surveys on the Ohio River in spring 2017 - 2024. Standard errors are in parentheses.

	Size group (in)				
Year	<12.0	12.0 - 19.9	20.0 - 27.9	≥28.0	Total
2017	1.5 (0.3)	4.5 (0.7)	1.0 (0.2)	<0.1 (<0.1)	7.0 (1.0)
2018	0.7 (0.1)	2.5 (0.4)	0.6 (0.1)	<0.1 (<0.1)	3.8 (0.5)
2019	0.8 (0.2)	2.6 (0.5)	1.0 (0.3)	<0.1 (<0.1)	4.5 (0.8)
2021	0.6 (0.1)	1.3 (0.4)	0.5 (0.1)	0.0	2.4 (0.5)
2022	0.6 (0.2)	1.0 (0.2)	0.5 (0.2)	<0.1 (<0.1)	2.1 (0.4)
2023	0.3 (0.1)	0.8 (0.2)	0.1 (<0.1)	0.0	1.3 (0.3)
2024	0.4 (0.1)	1.7 (0.5)	0.4 (0.2)	<0.1 (<0.1)	2.6 (0.6)
Mean	0.7 (0.1)	2.3 (0.2)	0.6 (0.1)	<0.1 (<0.1)	3.6 (0.3)

Table 10. CPUE (fish/net-night) of flathead catfish collected during unbaited hoop net surveys in Meldahl, Cannelton, and Smithland pools of the Ohio River in spring 2024. Standard errors are in parentheses.

Pool	Effort (net nights)	No. of Flathead Catfish	CPUE
Meldahl	57	28	0.5 (0.1)
Cannelton	90	104	1.2 (0.3)
Smithland	30	36	1.2 (0.5)
Total	177	168	1.0 (0.2)

Table 11. CPUE (fish/net-night) of flathead catfish collected during unbaited hoop net surveys on the Ohio River in spring 2017 - 2024. Standard errors are in parentheses.

Year	CPUE
2019	1.8 (0.2)
2021	0.8 (0.2)
2022	1.5 (0.2)
2023	0.6 (0.1)
2024	1.0 (0.2)
Mean	1.1 (0.1)

Table 12. Length frequency and CPUE (fish/net/night) of flathead catfish collected during unbaited hoop net sampling in the Meldahl, Cannelton, and Smithland pools during spring 2024 on the Ohio River. Standard errors are in parentheses.

	Inch class																														
Pool	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	Total	CPUE
Meldahl	1	1		1		1	1	4	2	3	2	1	3		2	1	1			1		2					1				28	0.5 (0.1)
Cannelton	2	2	2	7	2	6	5	4	12	6	9	12	12	3	3	2	5	2	3		1		1			1	1			1	104	1.2 (0.3)
Smithland				2	5	1	6	1	4	4	2	3	1	1	1		3		1		1										36	1.2 (0.5)
Total	3	3	2	10	7	8	12	9	18	13	13	16	16	4	6	3	9	2	4	1	2	2	1			1	2			1	168	1.0 (0.2)

Table 13. CPUE (fish/net-night) by size group of flathead catfish collected during unbaited hoopnet surveys on the Ohio River in spring 2019 - 2023. Standard errors are in parentheses.

	Size group (in)					
Year	<12.0	12.0 - 19.9	20.0 - 29.9	30.0 - 34.9	≥35.0	Total
2019	0.0	0.1 (<0.1)	1.1 (0.1)	0.3 (0.1)	0.2 (0.1)	1.8 (0.2)
2021	0.0	0.1 (<0.1)	0.5 (0.2)	0.1 (0.1)	0.1 (<0.1)	0.8 (0.2)
2022	0.0	0.1 (<0.1)	0.9 (<0.1)	0.3 (0.1)	0.2 (0.1)	1.5 (0.2)
2023	0.0	0.1 (<0.1)	0.4 (0.1)	0.1 (<0.1)	0.1 (<0.1)	0.6 (0.1)
2024	0.0	0.1 (<0.1)	0.7 (0.1)	0.1 (<0.1)	0.1 (<0.1)	1.0 (0.2)
Mean	0.0	0.1 (<0.1)	0.7 (0.1)	0.2 (<0.1)	0.1 (<0.1)	1.1 (0.1)

Table 14. Effort and CPUE (fish/hr) of blue catfish and flathead catfish collected during electrofishing surveys on the Kentucky River in May and June 2024. Standard errors are in parentheses.

Pool	No. of transects	Effort (hr)	No. of Blue Catfish	CPUE	No. of Flathead	CPUE
1	8	2.0	8	4.0 (3.5)	64	32.0 (5.0)
2	4	1.0	20	20.0 (8.8)	37	37.0 (6.2)
3	8	2.0	38	19.0 (6.7)	33	16.5 (2.6)
4	8	2.0	0	0.0	19	9.5 (2.7)
5	8	2.0	0	0.0	18	9.0 (2.5)
6	8	2.0	0	0.0	19	9.5 (2.3)
7	8	2.0	0	0.0	37	18.5 (4.5)
8	8	2.0	1	0.5 (0.5)	26	13.0 (3.3)
9	4	1.0	0	0.0	8	8.0 (1.6)
10	8	2.0	0	0.0	95	47.5 (6.2)
11	8	2.0	0	0.0	75	37.5 (5.2)
12	8	2.0	0	0.0	104	52.0 (10.1)
13	4	1.0	0	0.0	66	66.0 (23.5)
14	4	1.0	0	0	45	45.0 (8.4)
Total	96	24.0	67	2.8 (0.9)	646	26.9 (2.4)

Table 15. Length frequency and CPUE (fish/hr) of blue catfish collected during electrofishing surveys in May and June 2024 on the Kentucky River. Standard errors are in parentheses.

	Inch class																				
Pool	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	Total	CPUE	Wr
1		2		2	1		2	1											8	4.0 (3.5)	120
2		1	6	5	2	1		1					1			1		2	20	20.0 (8.8)	105
3	1	7	7	8	6	3	5				1								38	19.0 (6.7)	95
4																			0	0.0	
5																			0	0.0	
6																			0	0.0	
7																			0	0	
8						1													1	0.5 (0.5)	96
9																			0	0.0	
10																			0	0.0	
11																			0	0.0	
12																			0	0.0	
13																			0	0.0	
14																			0	0.0	
Total	1	10	13	15	9	5	7	2			1		1			1		2	67	2.8 (0.9)	101

Table 16. CPUE (fish/hr) by size group of blue catfish and flathead catfish collected during electrofishing surveys on the Kentucky River in 2024. Standard errors are in parentheses.

	Size group (in)					
Year	<12.0	12.0 - 19.9	20.0 - 29.9	30.0 - 34.9	≥35.0	Total
			Blue catfish			
2024	0.5 (0.2)	2.1 (0.7)	0.2 (0.1)	0.0	0.0	2.8 (0.9)
			Flathead catfish			
2024	17.1 (1.8)	8.9 (0.9)	0.8 (0.2)	0.1 (0.1)	0.1 (0.1)	26.9 (2.4)

Table 17. Length frequency, CPUE (fish/hr), and relative weight (Wr) of flathead catfish collected during electrofishing surveys in May and June 2024 on the Kentucky River. Standard errors are in parentheses.

	Inch class																																									
Pool	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	Total	CPUE	Wr
1		2	4	3	12	17	10	4	3	2	1	1		3	1				1																						64	32.0 (5.0)	106
2		2	1		2	3	6	4	6	6	3	2					1	1																						37	37.0 (6.2)	99
3		3	1	1	1	5	1	5	5	6	2			2	1																									33	16.5 (2.6)	97
4				1	1	1		1	2	4	5		1					1	1								1													19	9.5 (2.7)	92
5					2	2	2	5	2	1	2	1									1																			18	9.0 (2.5)	97
6					3	3	1	2		2	3	1		1	1		1						1																	19	9.5 (2.3)	94
7			5	3	4	7	8	1	2		2			1		1	1							1										1						37	18.5 (4.5)	102
8		1		3	1	7	5	3	3	2				1																										26	13.0 (3.3)	93
9			1				1		2	2			1										1																	8	8.0 (1.6)	86
10	3	3	2	13	6	12	14	12	15	7	3		1	1	2																								1	95	47.5 (6.2)	95
11	1	5	3	6	7	10	6	15	6	6	2	3		1	1									1	1				1											75	37.5 (5.2)	96
12	2		2	12	10	13	13	11	15	11	3	5	3			3								1																104	52.0 (10.1)	96
13			2	3	10	13	8	7	6	1	3	2		1	4	1	1	1	1	1												1								66	66.0 (23.5)	103
14			1	1	3	7	9	4	1	6	6	3	3			1																								45	45.0 (8.4)	94
Total	6	16	22	46	62	100	84	74	68	56	35	18	9	11	10	6	4	3	3	1	1		2	2	2			1	1			1		1					1	646	26.9 (2.4)	98

Table 18. Effort and CPUE (fish/hr) of blue catfish and flathead catfish collected during electrofishing surveys on the Green River in June 2024. Standard errors are in parentheses.

Pool	No. of transects	Effort (hr)	No. of Blue Catfish	CPUE	No. of Flathead	CPUE
1	20	5.0	35	7.0 (1.8)	183	36.6 (4.0)
2	20	5.0	3	0.6 (0.4)	126	25.2 (2.8)
3	16	4.0	7	1.8 (0.7)	145	36.3 (4.8)
Total	56	14.0	45	3.2 (0.8)	454	32.4 (2.3)

Table 19. Length frequency and CPUE (fish/hr) of blue catfish and flathead catfish collected during electrofishing surveys in June 2024 on the Green River. Standard errors are in parentheses.

		Inch class																																										
Pool	Species	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	Total	CPUE	Wr
1	Blue catfish			2	1	3	6	2	5	1	2		1	3	1			2	1	1	2				1		1														35	7.0 (1.8)	110
	Flathead catfish		1	1	14	18	17	20	31	16	9	6	5	6		4	3	2	3	1	2	2	3	4	2	2	3		2	1	1	1					1			2	183	36.6 (4.0)	101
2	Blue catfish	1						1			1																														3	0.6 (0.4)	117
	Flathead catfish		1	1	7	2	18	16	11	17	10	13	4	4	2	3	1	2	2	2	3		2	1	3		1														126	25.2 (2.8)	106
3	Blue catfish																2				1	1			1						1	1									7	1.8 (0.7)	100
	Flathead catfish		1	9	5	14	15	14	24	13	21	11	4	5	2	1		1	2	1			1		1																145	36.3 (4.8)	109
Total	Blue catfish	1		2	1	3	6	3	5	1	3		1	3	1		2	2	1	1	3	1			2		1				1	1									45	3.2 (0.8)	107
	Flathead catfish		3	11	26	34	50	50	66	46	40	30	13	15	4	8	4	5	7	4	5	2	6	5	6	2	4		2	1	1	1					1			2	454	32.4 (2.3)	107

Table 20. CPUE (fish/hr) by size group of blue catfish and flathead catfish collected during electrofishing surveys on the Green River in 2024. Standard errors are in parentheses.

	Size group (in)					
Year	<12.0	12.0 - 19.9	20.0 - 29.9	30.0 - 34.9	≥35.0	Total
			Blue catfish			
2024	1.6 (0.5)	0.9 (0.3)	0.6 (0.3)	0.1 (0.1)	0.0	3.2 (0.8)
			Flathead catfish			
2024	20.4 (2.1)	8.5 (1.0)	2.9 (0.5)	0.4 (0.2)	0.2 (0.1)	32.4 (2.3)

Table 21. Relative weight (Wr) of blue catfish, channel catfish, and flathead catfish collected from the Ohio River using trotlines, hoop nets, electrofishing and catfish tournaments from 2013 - 2024.

	Species		
Year	Blue catfish	Channel catfish	Flathead catfish
2013	112	100	99
2014	105	97	92
2015	109	100	98
2016	107	97	106
2017	106	89	107
2018	104	90	101
2019	99	86	99
2020	107		107
2021	112	87	114
2022	103	89	95
2023	106	84	101
2024	102	97	95
Mean	106	92	102

Table 22. von Bertalanffy growth parameters used to estimate length-at age for blue catfish and flathead catfish collected from the Ohio River in 2022/2023 and the Kentucky River and Green River in 2024 where $L\infty$= theoretical maximum length, K=body growth coefficient, and t_0=time coefficient.

	Blue catfish			Flathead catfish		
Parameter	Ohio River	Kentucky River	Green River	Ohio River	Kentucky River	Green River
$L\infty$ (in)	55.0	45.2	48.5	55.0	44.2	52.1
K	0.055	0.067	0.049	0.043	0.043	0.046
t_0	-1.622	-1.668	-1.876	-3.113	-2.622	-0.989

Table 23. Mean length (in) at age calculated with the von Bertalanffy growth equation based on otoliths taken from blue catfish from the Ohio River in spring and summer of 2022/2023 and the Kentucky River and Green River in 2024.

	Age																												
River	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
Ohio River	7.4	10.0	12.4	14.7	16.8	18.9	20.8	22.6	24.4	26.0	27.6	29.1	30.5	31.8	33.0	34.2	35.3	36.4	37.4	38.3	39.2	40.1	40.9	41.7	42.4	43.1	43.7	44.3	44.9
Kentucky River	7.4	9.8	12.1	14.3	16.3	18.2	19.9	21.5	23.1	24.5	25.9	27.1	28.3																
Green River	6.4	8.4	10.3	12.1	13.9	15.5	17.1	18.6	20.1	21.4	22.7	23.9	25.1	26.2	27.3	28.3	29.3	30.2	31.1	31.9									

Table 24. Mean length (in) at age calculated with von Bertalanffy growth equation based on otoliths taken from flathead catfish from the Ohio River in spring and summer of 2022/2023 and the Kentucky River and Green River in 2024.

	Age																															
Pool	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
Ohio River	8.9	10.9	12.7	14.5	16.2	17.9	19.4	20.9	22.4	23.8	25.1	26.3	27.6	28.7	29.8	30.9	31.9	32.9	33.8	34.7	35.6	36.4	37.2	37.9	38.7	39.4	40.0	40.7	41.3	41.8	42.4	42.9	43.5	43.9
Kentucky River	6.4	8.0	9.5	11.0	12.4	13.7	15.0	16.2	17.4	18.5	19.6	20.6	21.6	22.6	23.5	24.4	25.2	26.0	26.8	27.5	28.2	28.9	29.5	30.1	30.7	31.3	31.8	32.4	32.9					
Green River	4.6	6.7	8.7	10.7	12.6	14.3	16.0	17.7	19.2	20.7	22.1	23.4	24.7	26.0	27.1	28.3	29.3	30.4	31.3	32.3	33.2	34.0	34.8	35.6	36.4	37.1	37.7	38.4						

Table 25. Maximum total annual mortality rates of blue catfish, channel catfish, and flathead catfish collected from the Ohio River using trotlines, hoopnets, and electrofishing from 2013 - 2024.

	Species		
Year	Blue catfish	Channel catfish	Flathead catfish
2013	18.7	32.2	18.8
2014	24.7	26.8	18.7
2015	20.0	20.6	15.9
2016	17.4	16.8	16.0
2017	18.9	27.9	18.2
2018	19.8	28.0	18.0
2019	17.3	23.3	17.1
2020	26.6		19.5
2021	23.7	20.7	19.8
2022	26.4	15.8	17.6
2023	16.8	21.7	18.2
2024	27.6	22.2	11.5
Mean	21.5	23.3	17.4

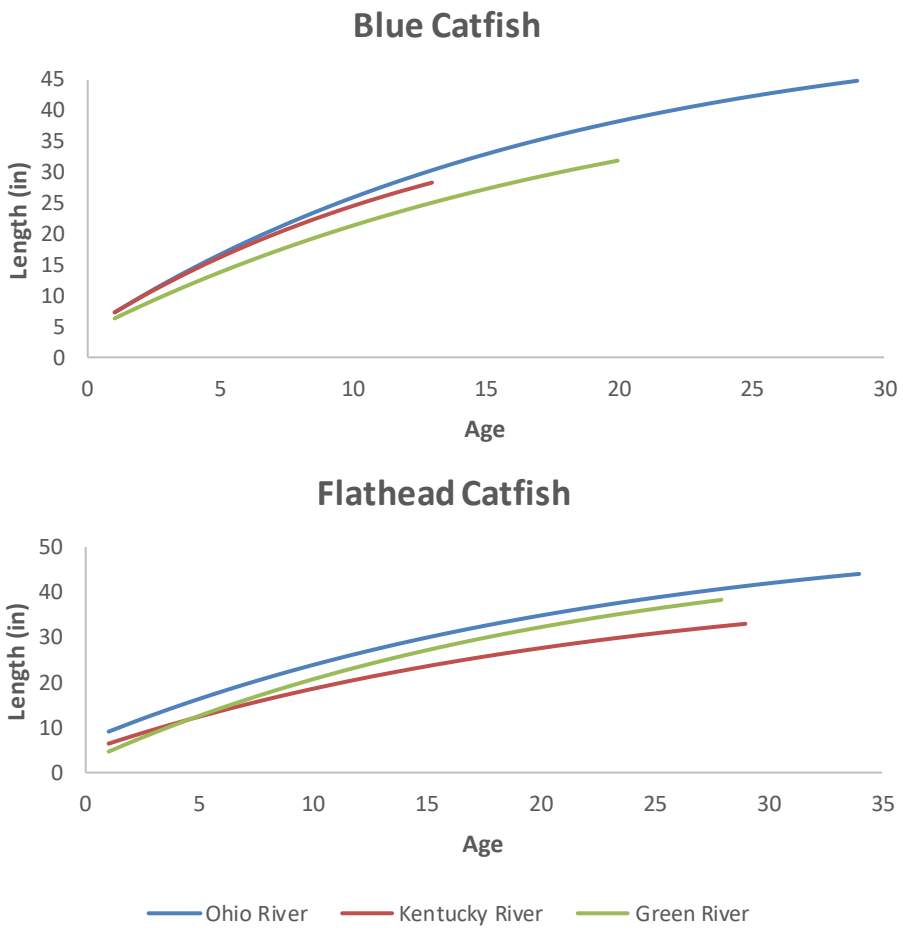

Figure 1. Comparison of von Bertalannfy growth curves for blue catfish, channel catfish, and flathead catfish by pool from age and growth samples collected from the Ohio River in 2022/2023 and the Kentucky River and Green River in 2024.

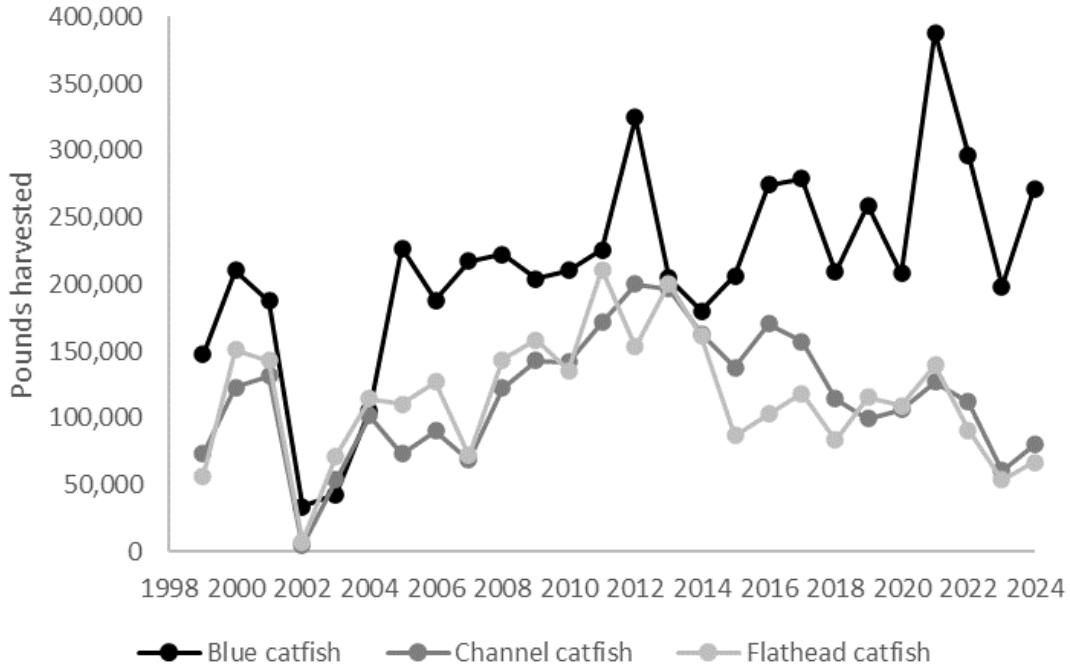

Figure 2. Total pounds of blue catfish, channel catfish, and flathead catfish harvested by commercial fishermen from the Ohio River from 2004 – 2024.

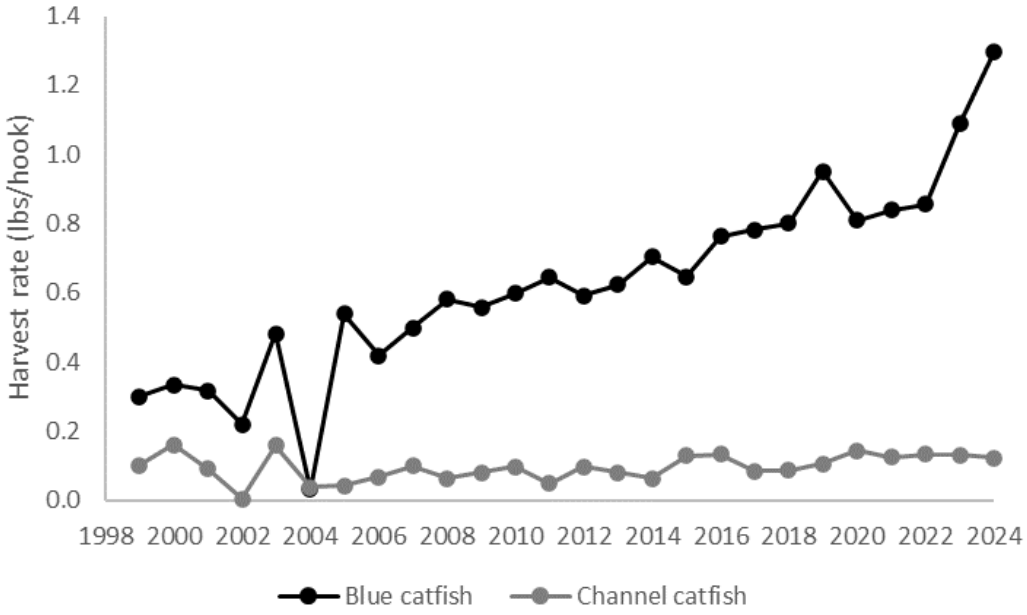

Figure 3. Harvest rate (lbs/hook) of blue catfish and channel catfish harvested with trotlines by commercial fishermen from the Ohio River from 2004 – 2024.

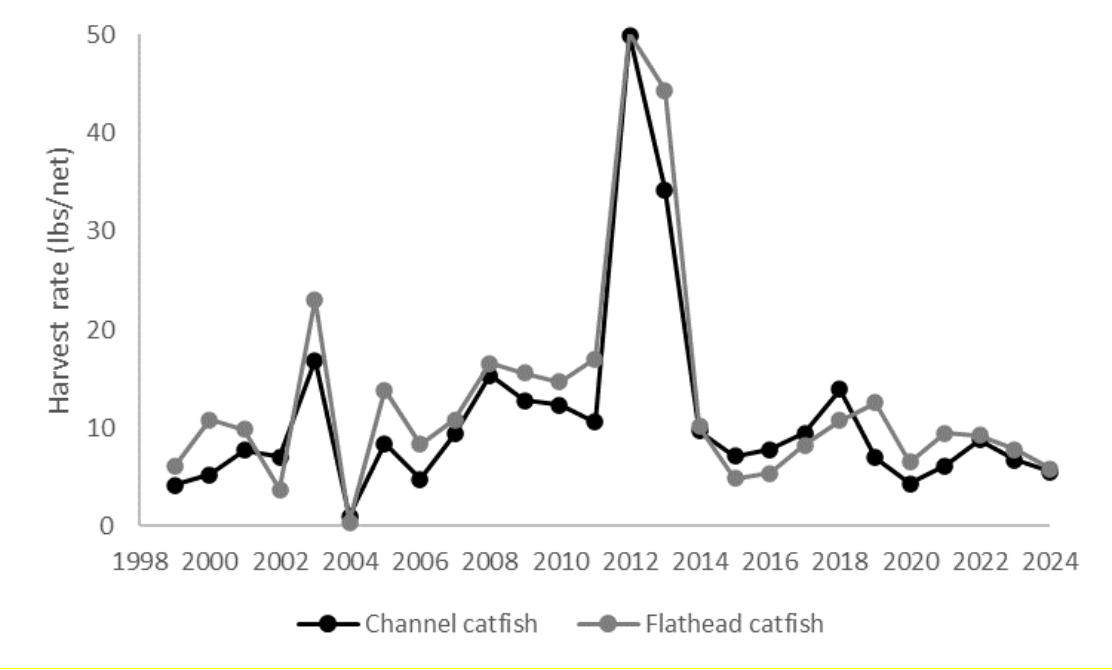

Figure 4. Harvest rate (lbs/net) of channel catfish and flathead catfish harvested with hoop nets by commercial fishermen from the Ohio River from 2004 – 2024.