

# At the Confluence of Diverse Users and Invasive Carp: The 2022 Kansas River User Survey

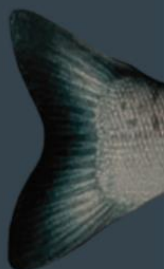
JANUARY 2024



**Kansas Department of Wildlife and Parks**

**PREPARED BY**

Susan F. Steffen, Michael A. Parr, Lucas K.  
Kowalewski, Liam M. Odell,  
and Christopher J. Steffen



# Table of Contents

Introduction.....	1
The Kansas River.....	1
The Kansas River   Surrounding Community.....	2
The Kansas River   Fish Community .....	2
The Kansas River   Invasive Carp.....	3
Methods.....	4
Research Question 1: How many people are using the river? .....	6
Research Question 2: Who is Using the River? .....	8
Research Question 3: What is the level of awareness of invasive carp among river users?.....	11
Research Question 4: What are the impacts of invasive carp on river users?.....	15
Research Question 5: Number of anglers, total angling effort, catch and harvest information?.....	18
Research Question 6: What access issues affect river users?.....	20
The Future of the Kansas River.....	24
Acknowledgements.....	28
Literature Cited.....	29
Appendix A.....	30
Appendix B.....	33

*Suggested citation:*

Steffen SF, Parr MA, Kowalewski LK, Odell LM, Steffen CJ (2024) At the Confluence of Diverse Users and Invasive Carp: the 2022 Kansas River User Survey. Kansas Department of Wildlife and Parks, Emporia, KS. 36 pp.

## Introduction

### The Kansas River

The Kansas River forms at the confluence of the Republican and Smoky Hill Rivers near Junction City, Kansas. It flows east 170 miles (274 km) to its confluence with the Missouri River in Kansas City, Kansas. The Kansas River is a relatively shallow river (< 5 ft, 1.5m) with typically sand substrate (Eitzmann and Paukert 2010). The Kansas River basin drains approximately the northern half of Kansas and portions of Colorado and Nebraska (Figure 1).



**Figure 1.** A map of the Kansas River basin and its major tributaries.

As one of only three navigable, publicly accessible rivers in the state of Kansas, the Kansas River is a popular destination for public recreation including kayaking and canoeing, fishing, hunting, and wildlife viewing. It was designated as a National Water Trail in 2012 by the National Park Service. This designation, as well as the recent nationwide surge of participation in kayaking, has made the Kansas

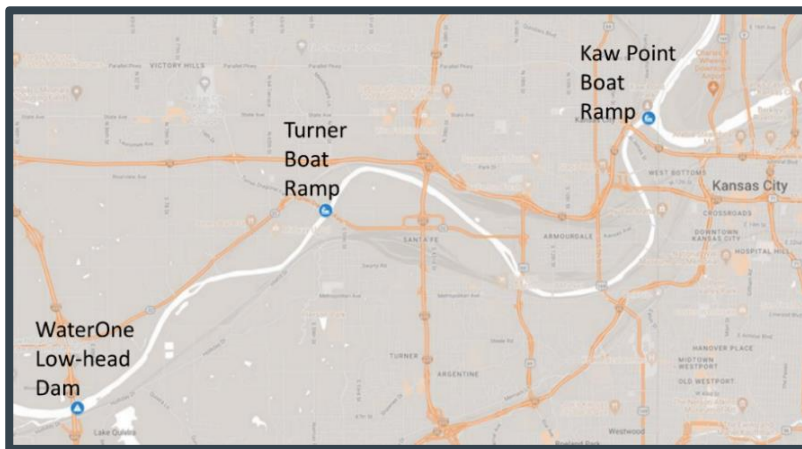


River a destination for paddlesports. The Kansas River is also a popular destination for anglers due to abundant angling opportunities.

The Kansas River is a unique destination for outdoor recreation and a relatively underdeveloped destination for local communities to benefit from the economic benefits of outdoor recreation. Water suppliers use the Kansas River and its associated alluvial aquifer to supply drinking water to more than 950,000 people throughout northeastern Kansas (J. Olson, Kansas Water Office, personal communication).



The focus area of this study occurs on the lower 14.8 river miles (23.8 river kilometers) from the WaterOne low-head dam to the confluence with the Missouri River (Figure 2). The dam is a small rock weir that diverts river flows for water intake (Eitzmann et al. 2007) and is an upstream barrier for both fish and boaters. There are two public boat access points on this stretch of the river: Kaw Point Park,



**Figure 2.** Map of 14.8 river mile stretch of Kansas River where survey occurred.

located just upstream of the confluence of the Kansas and Missouri River and Turner Boat Ramp, located at river mile 9.2 (14.8 RKM). The north bank of the downstream side of the WaterOne low-head dam offers a popular shore angling access location despite an approximate 0.65 mile (1.1 km) walk from the nearest legal vehicle parking area. A KDWP biologist described WaterOne low-head dam as “...the intersection of habitat, fish, and humans more so than [any] other place on the river” (B. Neely, personal communication).

### The Kansas River | Surrounding Community

Land use surrounding this portion of the Kansas River is predominantly urban industrial/commercial and urban residential (University of Kansas KBS 2023). Kansas City, Kansas (Wyandotte County) has a population of 156,607 people and approximately 35% of the population is Hispanic or Latino (US Census Bureau 2023). The poverty rate is 14.3%, which is higher than the 12.0% poverty rate of Kansas. Several of the census tracts adjacent to the Kansas River are identified as disadvantaged according to the Climate and Economic Justice Screening tool (Council on Environmental Quality 2023). This tool is used to indicate areas that have burdens in climate change, energy, health, housing, legacy pollution, transportation, water and wastewater, and workforce development. For example, the nearby Armourdale neighborhood is disadvantaged because it is burdened by poverty. Ninety six percent (96%) of people in these neighborhood households have an income less than or equal to twice the federal poverty level. This information helped us to understand the demographics and socioeconomic conditions of the surrounding community and potential user base.

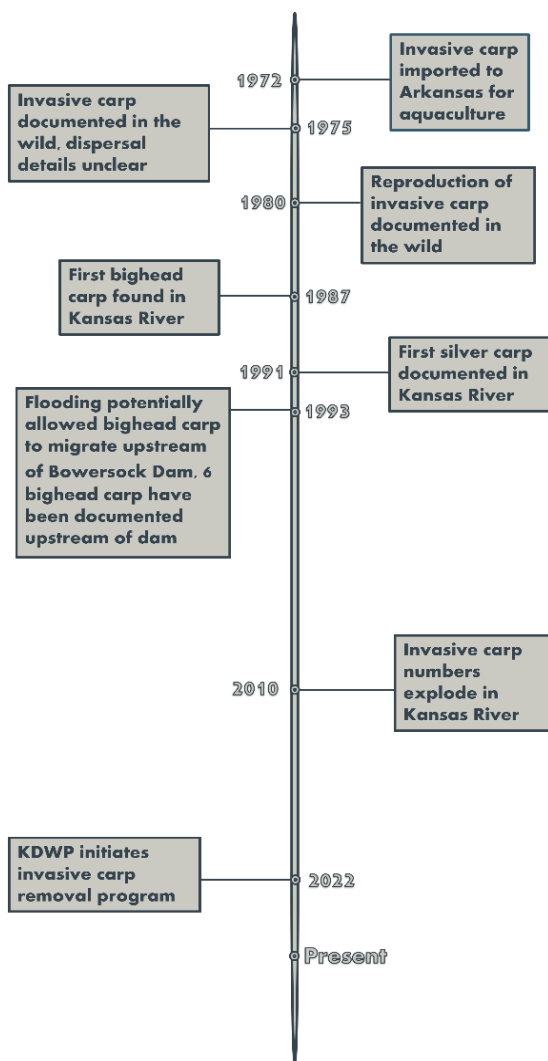
### The Kansas River | Fish Community

The Kansas River harbors a diverse fish community with 80 species occurring in the mainstem Kansas River and its lower tributaries, of which, 65 species are native, and 15 species are considered non-native (Galat et al. 2023). Some of the non-native species were introduced intentionally to create reservoir sport fisheries within the basin (e.g., yellow perch, hybrid striped bass), some have been long established (e.g., common carp, grass carp), and some have been unintentional invasions (e.g., silver and bighead carp). Common species include bullhead minnow, channel catfish, common carp, flathead catfish, freshwater drum, longnose gar, red shiner, river carpsucker, sand shiner, and shovelnose sturgeon (Galat et al. 2023).



**KDWP employee with a Pallid Sturgeon from the Kansas River.**

The federally endangered pallid sturgeon has historically occurred in the Kansas River basin, and the federally endangered Topeka shiner occurs in Flint Hill tributary streams to the Kansas River. Two state listed threatened species occur in the Kansas River (plains minnow and shoal chub) and two state listed species in need of conservation (blue sucker and johnny darter).



**Figure 3.** A timeline of bighead and silver carp invasion of the Kansas River.

Anglers on the Kansas River primarily target the three catfish species present (blue catfish, channel catfish, flathead catfish) (Table 4, see Appendix A), especially with the blue and flathead catfish trophy potential that the Kansas River possesses. The state record blue catfish weighed 102.8 pounds and was caught in the Missouri River near the confluence with the Kansas River and specimens over 40 pounds are a common occurrence in the Kansas River. Anglers will occasionally target other species such as white bass, hybrid striped bass, crappie, and common carp (Table 4), while species such as freshwater drum and gar are often caught (Table 5). More recently, evidence points to anglers frequently targeting silver carp, primarily to be used as cut-bait for catfish species.

### The Kansas River | Invasive Carp

This lower stretch of the Kansas River is also inhabited by nonnative and invasive silver and bighead carp. A timeline of their invasion in the US and Kansas River is displayed in Figure 3. Invasive carp (particularly silver carp) have a well-documented behavior of jumping from the water when disturbed by noise (e.g., noise from boat motor) and pose potential danger to boaters when hit by jumping carp, which can exceed 20 pounds. We suspect some anglers may have a positive view of invasive carp because of anecdotal information that invasive carp are used as cut bait by catfish anglers. Prior to this study, impacts of invasive carp to river users on the Kansas River users have not been well documented or understood.

## Methods

Interviews and outreach were conducted March 1 through October 31, 2022. Survey activities were limited to the stretch of the Kansas River from the confluence with the Missouri River (RM 0; RKM 0) upstream to the WaterOne low-head dam at Edwardsville, KS (RM 14.8; RKM 24). When river flows were from 4,000 ft<sup>3</sup>/s (113 m<sup>3</sup>/s) to 20,000 ft<sup>3</sup>/s (566 m<sup>3</sup>/s), surveys were conducted by boat; above and below these thresholds, surveys were conducted by truck at access points. In this stretch of the Kansas River there are three public access points – Kaw Point (RM 0; RKM 0), Turner Bridge (RM 9.3; RKM 15), and the WaterOne low-head dam (RM 14.8; RKM 24). A roving-roving creel with a randomized progressive count methodology was used to interview river users along predetermined routes with randomized starting points. KDWP staff conducted a total of 729 interviews, all of which included staff conducting outreach and providing educational materials about invasive carp and other aquatic invasive species.

While popular recreational usage of the lower portion of the Kansas River has been observed, much of this information has been anecdotal and unquantified by Kansas Department of Wildlife and Parks (KDWP). We identified six major research needs that would guide management direction in the future (Figure 4). Figure 5 chronologically illustrates each step of the survey method process in the order by which the survey was structured and conducted. Each part of the survey directly corresponds to one or more of our six research needs, therefore; we have structured our results based on the research questions and provide an overview of important findings and recommendations.

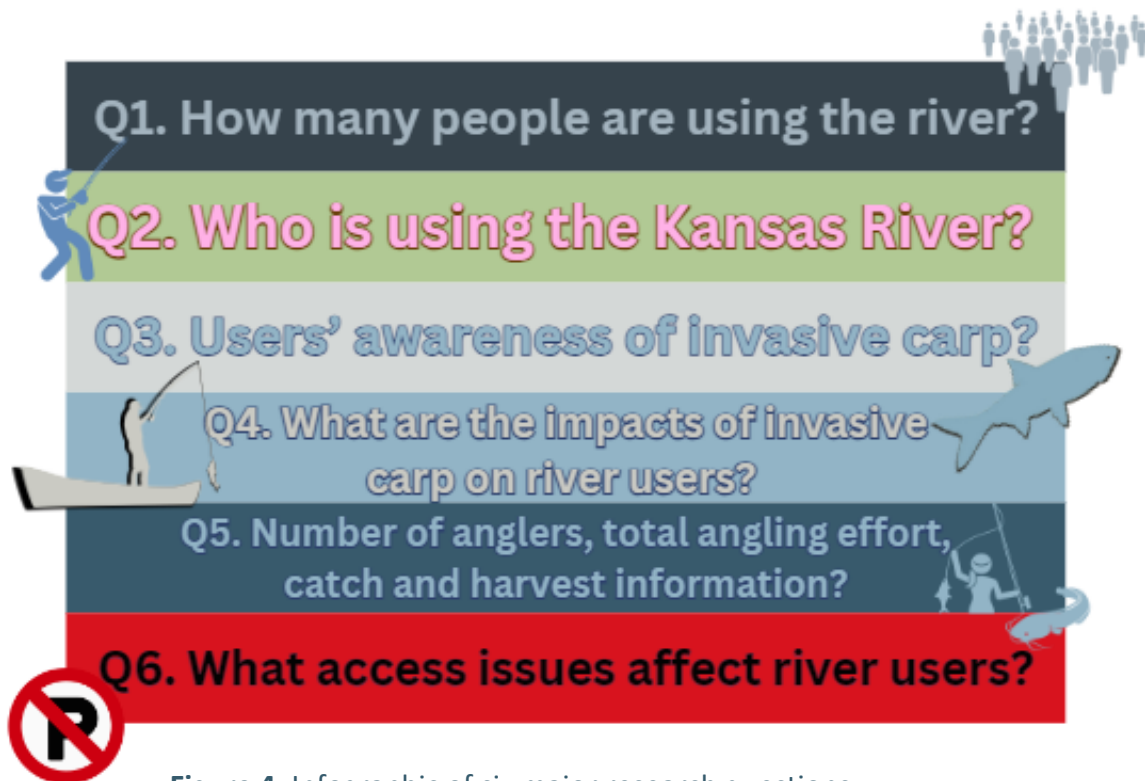
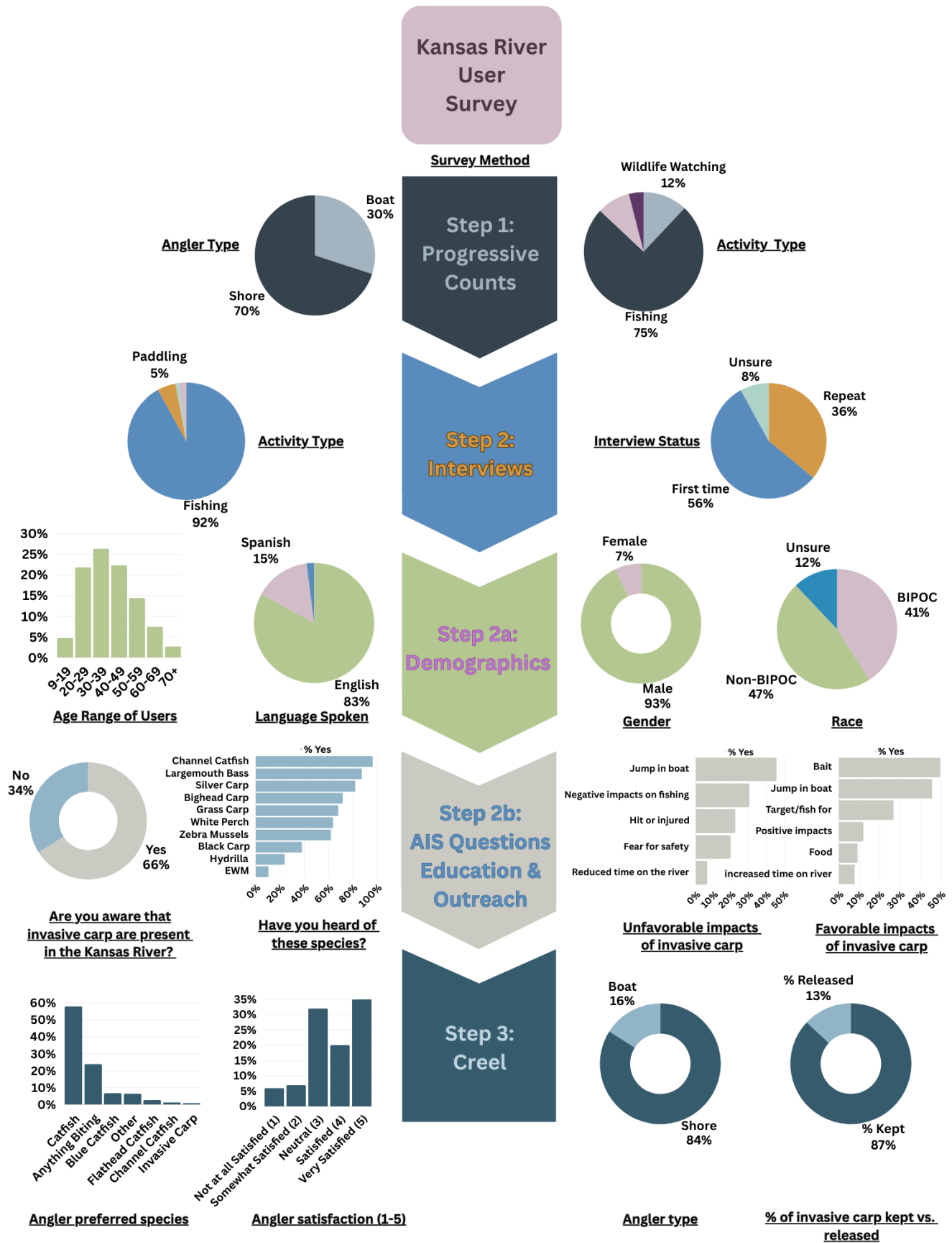


Figure 4: Infographic of six major research questions.



**Figure 5:** Flowchart illustrating the methods of how surveys were conducted and the analyzed results for each part of the survey.

# Research Question 1: How many people are using the river?



2,261 river users were observed



## Popular Activities

### Fishing

1,682 anglers: 1,588 (70%) shore-based and 673 (30%) boat-based



### Wildlife-watching

271 (12%) users



### Paddling

209 (9%) users paddled by kayak, canoe, or homemade watercraft



## High Use



Estimated number of river users from March-October 2022

## Time Spent



152,293 user-hours of effort in this portion of the KS River from March-October 2022

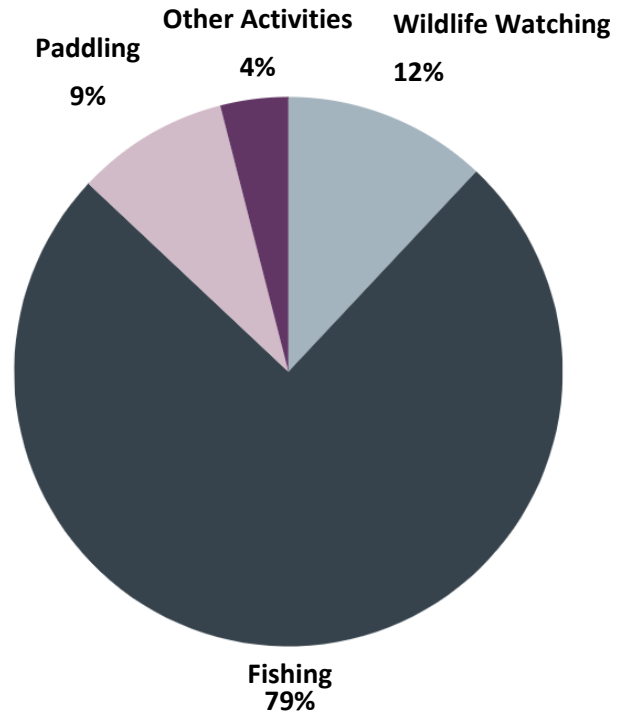
**Recommendation: Increase access and allocate additional resources to the Kansas River due to its popularity and high usage.**

Step 1:  
Progressive  
Counts



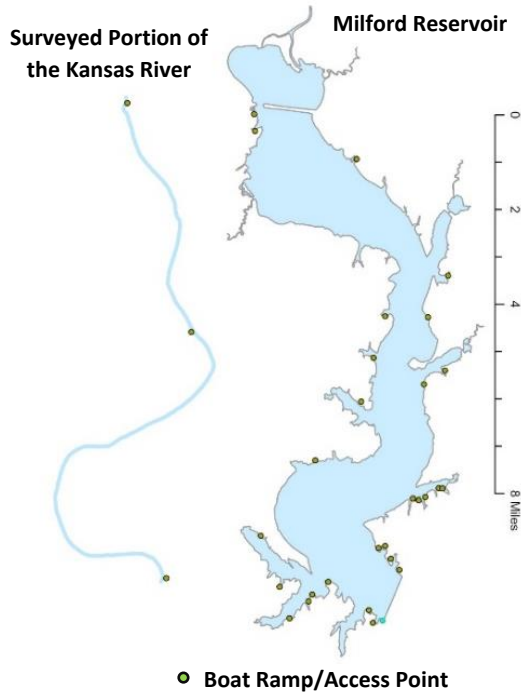
**Research Question 1: How many people are using the Kansas River?**

During the progressive count, we observed a total of 2,261 river users (Table 1). Seventy percent (70%) of those users recreated from shore and the other 30% from a boat. Of the 2,261 observed river users, 1,682 users were fishing, 271 were wildlife-watching, 209 were paddling, and the remaining 99 users were engaging in other recreational activities (swimming, foraging, recreational boating, etc.) (Figure 6). After extrapolating these user-counts to the total study period, we estimated there were 47,902 people recreating on this portion of the Kansas River during those 8 months.



**Figure 6:** Chart of most popular activity among river users by percentage.

They spent 152,293 user-hours of effort. This is about half the people and effort we estimate to use the largest reservoir in Kansas, Milford Reservoir (16,020 acres). In 2022 at Milford, there were an estimated 82,128 anglers with 219,321 angler-hours. For reference, Figure 7 compares the difference in number of access points between the Kansas River and Milford Reservoir, with access points being greatly skewed towards the latter. The surveyed portion of the Kansas River has a 1:9 ratio of access points to Milford Reservoir while having over half the number of anglers.



**Figure 7:** A comparison of the surveyed 14.8 river mile stretch of the Kansas River and Milford Reservoir.

## Research Question 2: Who is using the Kansas River?



**Anglers** 92% of completed interviews were anglers

### Young

Average age of river users

40

### Male

93% of river users



### Diverse

41% BIPOC  
47% White or  
Caucasian



### Languages

83% English  
15% Spanish  
and others



**Recommendation: Increase engagement efforts with non-English speaking constituents.**

Step 2:  
Interviews

Step 2a:  
Demographics

## Research Question 2: Who is using the Kansas River?

Research question 2 involved understanding the demographics of Kansas River users. River users were counted, and we obtained interviews from 729 user parties. “Parties” could have included more than one user if they were recreating in a group. We randomly selected one person in each party to interview and asked them questions about invasive carp. If they were fishing, we asked them additional questions about how many fish they caught or harvested to the nearest length for each species. Anglers represented most of the interviews (92%). Of those interviews, 84% were shore-based participants and 16% were boat-based participants. Of the 16% of boat participants, most used motorboats (73%), and 20% and 7% used kayaks or canoes, respectively. Paddlers represented 5% of the interviews followed by recreational boaters (2%), wildlife watchers (1%), and others (1%).



We encountered mostly male river users (93%) and only 7% were female. The average age of river users was 40 years old (Figure 8), which is younger than the average age (55 years old) of anglers from the licensed angler survey (Steffen 2022). The race/ethnicity of river users was almost evenly split between Black, Indigenous, or People of Color (41%) and Caucasian/White or Anglo (47%), with the remainder of river users’ race or ethnicity unknown (12%).

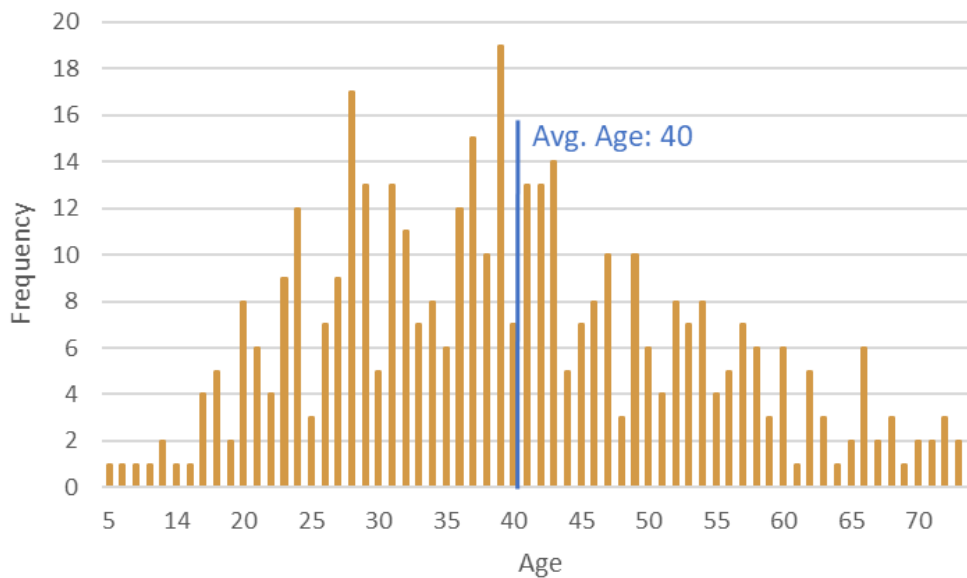
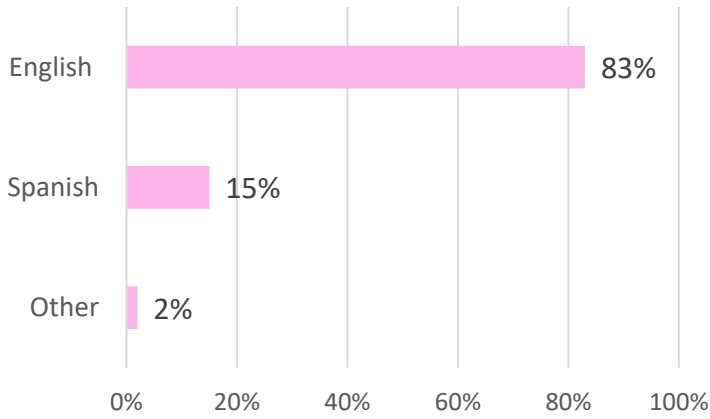


Figure 8: Histogram displaying ages of surveyed Kansas River users.

There was a myriad of languages spoken by river users, with English (83%) and Spanish (15%) most prevalent. The languages spoken by 2% included Chinese (Mandarin, Cantonese), Burmese, Farsi, Korean, or Karenic (Figure 9).



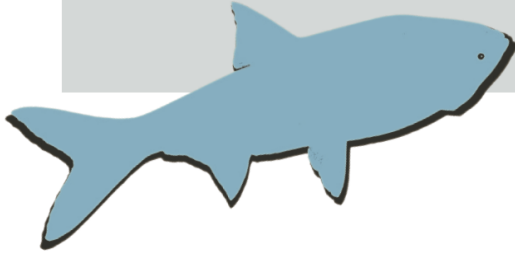
**Figure 9:** Percent of languages spoken by Kansas River users.

Early in the survey process we realized we needed to conduct some of the interviews in Spanish and translate our datasheet and educational materials into Spanish. Two KDWP employees, Michael Parr and Ernesto Flores, conducted interviews in Spanish. We are confident that we accurately captured Spanish-speakers’ information in the interviews. KDWP does not typically encounter non-English speaking constituents in our field sampling, so it was a learning process for our research staff to ensure we were not missing out on a significant portion of our users due to language barriers. This portion of the Kansas River is in a highly populated, urbanized area with a diverse user base.





## Research Question 3: What is the level of awareness of invasive carp among river users?



66% of users were aware of invasive carp being present in the river.

### Level of Awareness

66% of river users were aware and 34% were not aware of invasive carp in the river



### Least Heard of Species

- #1. Eurasian Watermilfoil (11%)
- #2. Hydrilla (24%)
- #3. Black Carp (38%)

### Level of Awareness by Race

75% of non-BIPOC users were aware and only 53% of BIPOC users were aware

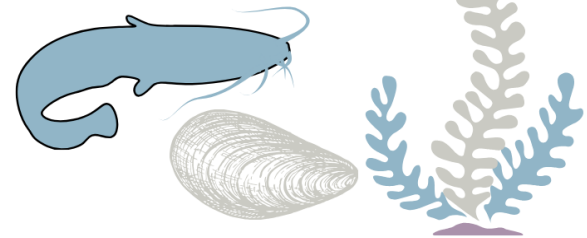


### Most Heard of Species

- #1. Channel catfish (97%)
- #2. Largemouth bass (88%)
- #3. Silver carp (82%)

### Level of Awareness by Language

39% of Spanish speaking users were aware compared to 70% of English speaking users



**Recommendation: Increase engagement with river users about aquatic invasive species and how to prevent their spread.**

**Step 2b:  
AIS Questions  
Education &  
Outreach**

### Research Question 3: What is the level of awareness of invasive carp among river users?

Before we asked users about their awareness of Bighead and Silver carp in the Kansas River, we read a short informative paragraph to them:

“Silver, Bighead, Grass, and Black carp are all non-native, invasive fish that can grow to more than 40 lbs. and may cause native fish species in a lake or river to decline by more than 90%. Silver carp are the fish you have probably seen videos of jumping 4-6 ft. out of the water and can and do injure people. The young of all these invasive carp look just like native baitfish, so please never move live fish between waterbodies as you could be inadvertently introducing these harmful carp into new lakes or rivers.”

This paragraph was necessary to avoid discomfort by participants who otherwise may feel “quizzed” about information they may or may not know. Due to survey filter questions and repeat encounters, we asked 405 people “Are you aware that Bighead and Silver carp are present in the Kansas River?” The majority, or 66%, were aware of the presence of bighead and silver carp in the Kansas River (Figure 10).

The level of awareness of invasive carp by Black, Indigenous, and People of Color (BIPOC) users was significantly lower compared to non-BIPOC users. About 53% of BIPOC users were aware that invasive carp were present in the Kansas River, whereas 75% of non-BIPOC users were aware of their presence (Figure 11). The level of awareness of invasive carp by Spanish-speaking users was also significantly lower than English-speaking users. About 39% of Spanish-speaking users were aware of invasive carp presence compared to the 71% of English-speaking users (Figure 12).

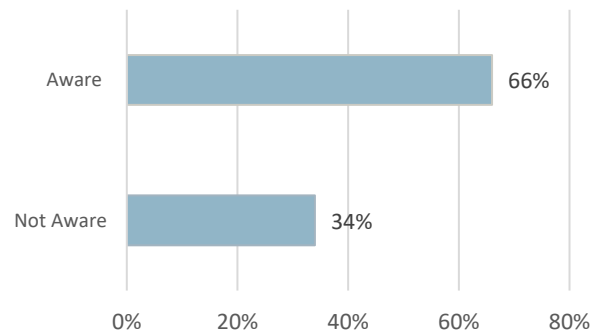


Figure 10: Percentage of user awareness for presence of bighead and silver carp in the Kansas River.

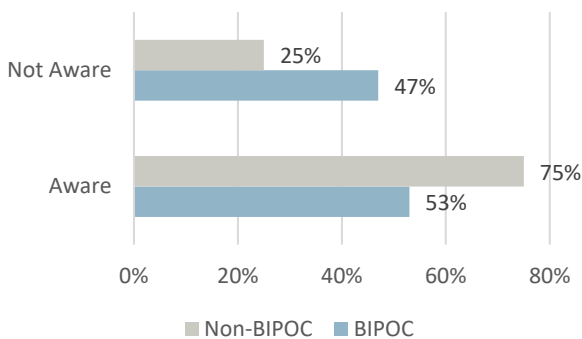


Figure 11: Percentage of invasive carp awareness by BIPOC and non-BIPOC Kansas River users.

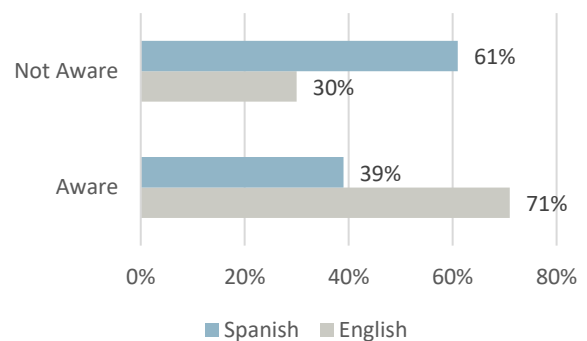
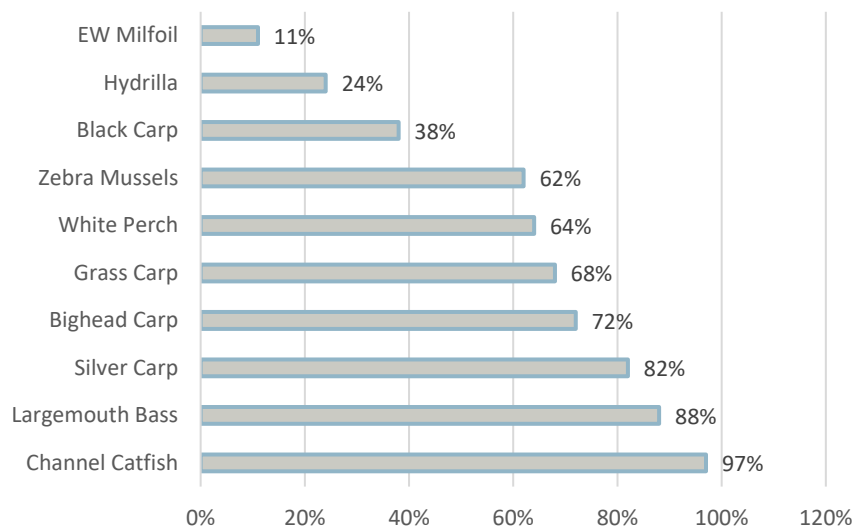


Figure 12: Percentage of invasive carp awareness by Spanish and English-speaking users.

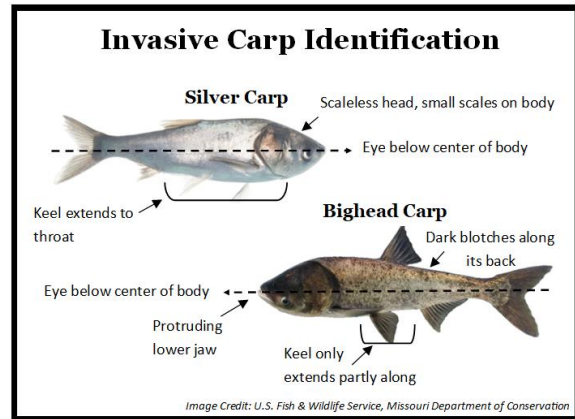
We also asked river users if they had heard of certain plant and animal species to gauge their overall awareness of invasive species in general (Figure 13). There were some native species in the list as well to provide a baseline of general ecological knowledge. Most river users had not heard of hydrilla (89%), or Eurasian watermilfoil (76%) and most users had heard of channel catfish (97%), largemouth bass (88%), and silver carp (82%). Given that zebra mussels are one of the most problematic invasive species in Kansas, it was surprising to see only 62% of river users had heard of this species.



**Figure 13:** Surveyed Kansas River users' awareness of different invasive species

After gauging users' awareness of invasive carp and other aquatic invasive species, we provided them with an educational invasive carp clip, comprised of multiple cards with information on the different invasive carp species, how to identify them, and how to prevent their spread (Figure 14). Some users may not have heard of some of the invasive carp species but may recognize them based on the pictures that were provided. Handing out the invasive carp clips at this point in the survey allowed the users to definitively say whether they were aware of silver and bighead carp being present in the Kansas River. If they were aware of silver and bighead carp being present in the river, we then asked those users a series of questions to gauge the impacts that invasive carp have on those users.





### Why Are Invasive Carp A Problem?

- *Silver Carp and Bighead Carp* are excellent filter feeders, and established populations lead to declines in native planktivore populations (Paddlefish, Buffalo, Gizzard Shad). In addition, Silver Carp can also cause injuries to boaters when they jump due to boat vibrations.
- *Grass Carp* decimate vegetation and can negatively impact food webs resulting in declines in native and sports fish populations.
- *Black Carp* are molluscivores, feeding on snails and mollusks, which can negatively impact already endangered native mussels, crayfish, and snail populations.

### Invasive Carp Fish Facts:

**Bighead Carp:**

- Adults can weigh up to 110lbs and reach 5ft in length
- Can consume up to 40% of their body weight
- Can live >25 years old
- Bighead Carp outcompete native paddlefish

**Silver Carp:**

- Adults can weigh up to 60lbs and reach 3ft in length
- Leap out of the water when disturbed
- Consume large amounts of phytoplankton, leading to an increase in algal blooms

Image Credit: U.S. Fish & Wildlife Service, Missouri Department of Conservation

Can you spot the four invasive carp among these native fish? Answers provided on the right.

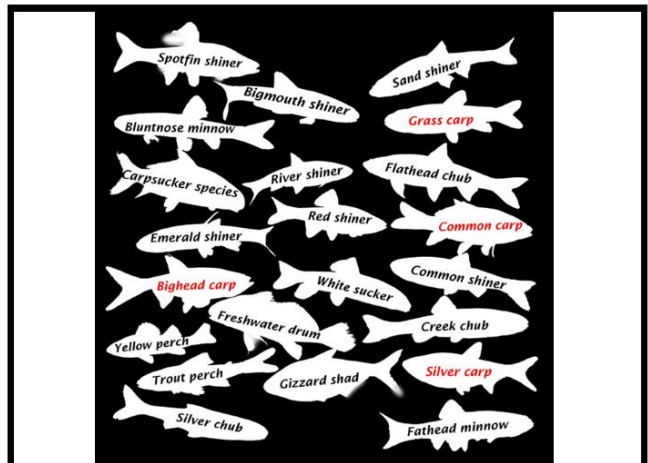
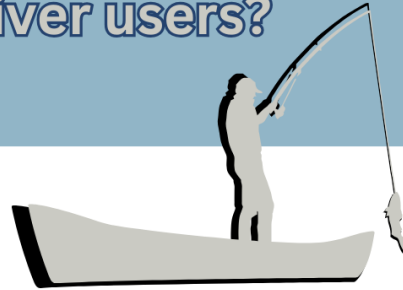
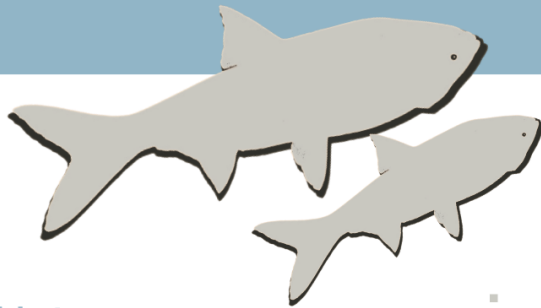


Figure 14: Educational materials (invasive carp clip) to surveyed Kansas River users to increase invasive carp awareness.



## Research Question 4: What are the impacts of invasive carp on river users?



### Favorable Impacts

- #1. Use carp as bait (50%)
- #2. Target carp (27%)
- #3. Positive impact to fishing (12%)



### Unfavorable Impacts

- #1. Negative impact to fishing (30%)
- #2. Hit or injured (22%)
- #3. Fear of safety (20%)



### Neutral Impacts

Carp jump in boat:  
Fear of getting injured  
or boat incurring  
damage. Also seen as  
legal method of  
collecting bait



### Source of Bait

50% of anglers used  
invasive carp as cut  
bait, especially blue  
catfish anglers



**Recommendation: Legalize snagging for invasive carp.**

Step 2b:  
AIS Questions  
Education &  
Outreach

#### Research Question 4: What are the impacts of invasive carp on river users?

The most favorable impact of invasive carp on Kansas River users, especially among anglers, was the use of invasive carp as bait. Fifty percent (50%) of users who were aware that bighead and silver carp were present in the Kansas River said they have used invasive carp as cut bait to catch blue catfish (Figure 15). Notably, many of those anglers perceived the presence of the invasive carp to the burgeoning trophy blue catfish fishery in the Kansas River and claimed that invasive carp cut bait was the best for catching blue catfish.

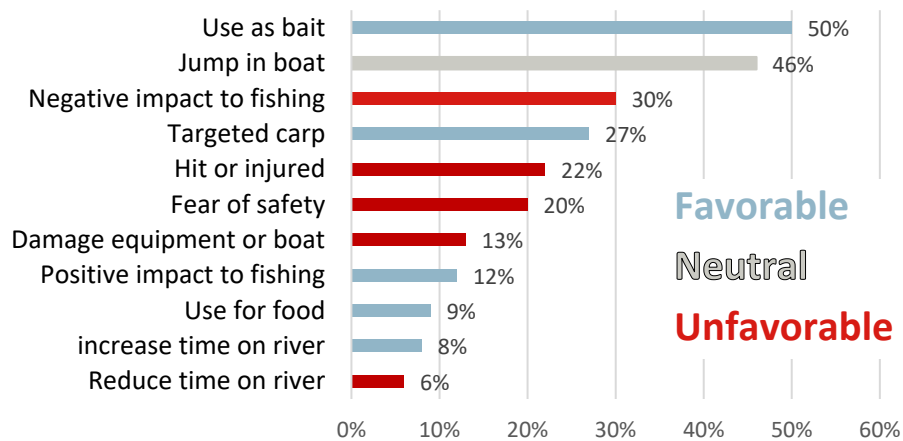


Figure 15: Impacts of invasive carp on Kansas River users.

Bighead and silver carp, like paddlefish, are planktivorous, so the only way to catch these species via rod and reel is by snagging them. Snagging is a fishing technique of hooking a fish in any part of its body other than the inside of the mouth. This technique usually involves using sharp grappling hooks tethered to a fishing line to externally pierce (i.e., “snag”) into the flesh of a nearby fish. According to Kansas’ snagging regulations, paddlefish and non-sport fish may only be snagged in designated waters during designated seasons. The Kansas River is not one of the designated waters during snagging season, thus it is illegal to snag for any species at any time on the Kansas River (KDWP, 2022). We observed people illegally snagging on the Kansas River throughout this study. Additionally, KDWP’s invasive carp removal crew, who spends a significant amount of time on the Kansas River, has frequently observed and discussed the practice of illegal snagging (P. Chard, KDWP, personal communication).

Twenty-seven percent (27%) of anglers specifically targeted bighead and silver carp in the Kansas River and 12% attribute the presence of bighead and silver carp as a positive impact to their fishing for other species, mostly due to anglers using the invasive carp as bait. Some users were entertained by invasive carp’s jumping behavior. Approximately 8% of those users have increased their time on the Kansas River because of bighead and silver carp whereas 6% of users have reduced time on the river due to the presence of invasive carp.

Of the users that recreate by boat on the Kansas River, 46% said they have had silver carp jump into their boat. Many users saw this as an opportunity to legally capture bighead and silver carp to use as cut bait. Others viewed this as a nuisance or disruptive to their recreational activities; due to its dichotomous positive/negative impact, we identified this as a neutral impact.

The most negative impact bighead and silver carp had on Kansas River users, especially among anglers, was the perception that invasive carp negatively impacted their fishing for other species (30%). They believed silver carp forced other species out of an area due to their habitat of feeding in schools, thus making their fishing attempts less successful.

Another negative impact of invasive carp was related to safety because silver carp may jump into boats, potentially harming people, and damaging equipment (Chapman 2010). Twenty percent (20%) of users stated they feared for their safety or feared being injured by bighead and especially silver carp, and 20% of users have been hit or injured by bighead or silver carp. For those users that recreate or fished by boat, 13% had their boat and/or equipment damaged by bighead or silver carp and 6% of users reduced their time on the Kansas River because of the invasive carp.

Overall, many Kansas River users who were aware that bighead and silver carp are in the Kansas River were utilizing the invasive carp as a resource for bait, whether they were capturing these species by legal methods (seining, cast netting, carp jumping in the boat) or not. Nine percent (9%) of users also harvested any invasive carp they captured as a food resource and 13% of anglers who were surveyed released the bighead or silver carp back into the water. It is important to note the practice of returning invasive carp or any prohibited species to the river is illegal (KDWP, 2022). Some river users were unaware of the legality regarding releasing invasive species as some released silver carp (Table 5). The impacts of invasive carp on Kansas River users overall seems to be dependent on user type, especially between shore and boat anglers.



# Research Question 5: Number of anglers, total angling effort, catch and harvest information?



According to estimates, anglers make up 75% of river users.



## Anglers and Effort

Estimated total of 38,646 anglers expended 109,838 angler-hours of total effort



## Shore Anglers Dominate

27,431 of estimated anglers fished from shore compared to 11,215 estimated boat anglers

71%

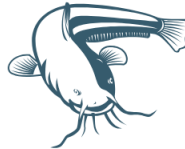
## Preferred Species

- #1. Catfish- any species (64%)
- #2. Anything biting (31%)
- #3 Other species (5%)



## Species Harvested

- #1. Channel catfish (46%)
- #2. Silver carp (19%)
- #3. Blue catfish (13%)



## Species Released

- #1. Channel catfish (36%)
- #2. Blue catfish (24%)
- #3. Shortnose gar (13%)



**Recommendation: Continue to periodically monitor the Kansas River fishery and anglers.**

Step 3:  
Creel



**Research Question 5: Number of anglers, total angling effort, catch and harvest information?**

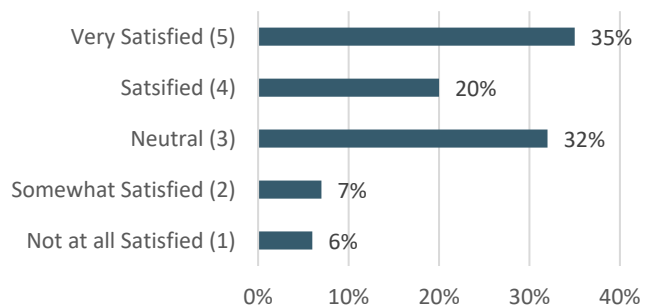


Research question five refers to only anglers, who make up 75% of river users according to our estimates. Fisheries managers wanted to understand the number and types of fish species being caught and harvested in this portion of the Kansas River. We estimated a total of 38,646 anglers expended 109,838 angler-hours of total effort (i.e., angling pressure) on this stretch of the Kansas River from March through October 2022 (Table 2, see appendix A); we also provided estimates stratified by angler type (boat and shore anglers) and day type (weekday and weekend; Tables 3 and 4, see Appendix A). Shore anglers expended about 3.5 times the amount of angling effort as boat anglers. The top three species harvested were channel catfish, silver carp, and blue catfish. Similarly, the most released species were channel

catfish, blue catfish, and shortnose gar (Table 5). Overall, there are more anglers that expend a greater amount of time on the river during the afternoon hours than there are during the morning hours. Over half of anglers, or 64%, targeted catfish, while 31% did not have a species preference, and the remainder preferred to target other species (Table 5).

We also found that 82% of all estimated silver carp harvested were harvested on weekdays by boat anglers (Table 4, see Appendix A). KDWP has not completed many creel summaries on this part of the Kansas River, so we were unsure of what to expect for species catch composition. We are not sure how anglers acquired silver carp, but we think anglers may keep silver carp that jump in their boat or harvest them by using seines, cast nets, or snagging.

When interviewing anglers, we asked them how satisfied they were with their fishing trip that day on a scale from 1-5 (Figure 16). Thirty-five percent (35%) of interviewed anglers were very satisfied with their trip while only 6% of anglers were not at all satisfied. Overall, over half (55%) of anglers were either satisfied or very satisfied with their trip, 13% were somewhat satisfied or not at all satisfied, and 32% felt neutral about their fishing trip. During angler interviews we noted if their fishing trip was complete or incomplete. If anglers had just started fishing or were still fishing at the time of the interview, their trip was marked as incomplete. Eighty-five percent (85%) of angler interviews were incomplete trips.



**Figure 16: Angler’s level of satisfaction with their fishing trip on the river.**

## Research Question 6: What access issues affect river users?



### Limited Public Access

Lack of public access limits the available shoreline and concentrates shore-based users at the 3 available access points

Some river users are trespassing to access the river

Boat-based users can only launch their boat at the Turner boat ramp between 10 PM and 7 AM (Kaw Point closed during this time)



### Parking

No parking access at Kaw Point from 10PM- 7AM

To access WaterOne, users can only legally park at the nearest gas station for \$5.00 (.65 mi. walk to access point)



Parking at Turner access is limited due to road conditions and is unsafe due to criminal activity

### Maintenance and Safety

Turner and WaterOne access points are poorly maintained (broken glass, litter/dumping, potholes, drug paraphernalia etc.)

Lack of accommodations (restrooms, dumpsters, safety lighting, etc.)

Criminal activity and lack of law enforcement presence

**Recommendation: Improve safety at access points.**

### Research Question 6: What access issues affect river users?

The last research question may be the most pertinent – What access issues affect river users? Shoreline access for non-boating river users is minimal because much of the shoreline is privately-owned. Location of each river user interview was mapped using ArcGIS and is shown in Figure 17. The most densely used areas by shoreline users were at the three access points (Figure 17), although this could be influenced by the majority (79%) of progressive counts done by truck rather than boat due to variable water flow.

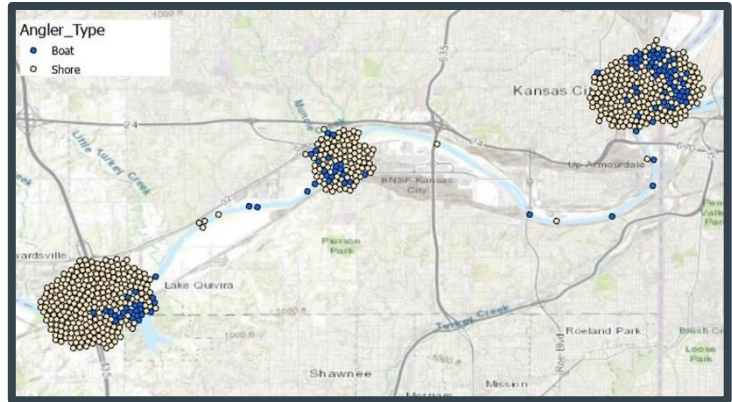
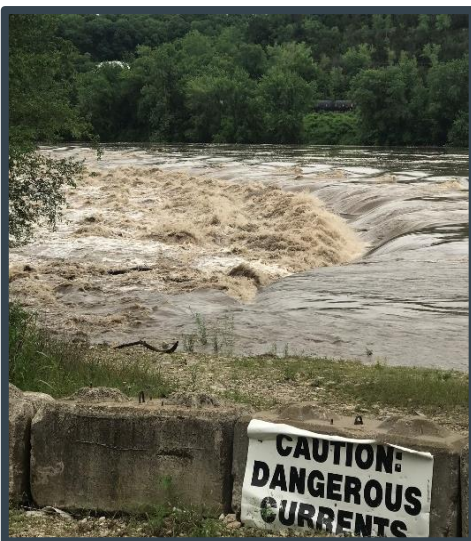


Figure 17: Map of where Kansas River users were interviewed in 14.8 river mile survey area.

Since the Kansas River’s flow is dependent on rain events and water being released upstream, river flows (discharge, cubic feet per second) can vary greatly. For example, on June 1, 2022, the river was flowing at 57,800 ft<sup>3</sup>/sec (1,637 m<sup>3</sup>/s) (USGS 2023). The next day, flows were at 20,500 ft<sup>3</sup>/sec (580 m<sup>3</sup>/s) and one month later flows were at 5,690 ft<sup>3</sup>/sec (161 m<sup>3</sup>/s). The variable flows could have had an influence on boat-based recreation due to low flows limiting access to certain areas of the river and high flows making the river dangerous to navigate.



We encountered shore and boat river users intermittently throughout the 14.8 river mile (23.8 RKM) stretch. We suspected the shore river users at those locations may have trespassed because they would have walked over one mile from a publicly accessible area. The Kansas River is a navigable waterway that affords public access up to the high-water mark, but this does not condone crossing private land without permission. In effect, the lack of public access limits the available shoreline and concentrates shore-

based users. Boat river users in this study were predominantly White or Anglo males. This coincides with previous research that determined White or Anglo males were more likely to live in a household with a motorized boat (Hunt and Ditton 2002). Two of the three access points in this stretch of the Kansas River have boat ramps. This could be an equity issue because more access to the Kansas River is boat-based but the users are predominantly shore-based, which disproportionately impacts shore users, especially non-White shore users.





We asked river users “Do you have any comments about safety of the access points or being on the Kansas River?” Below we present common themes that emerged from these qualitative data and provide river users’ own words for the reader to discern the gravity of these issues. River users would like to see more access points and better upkeep of the current ones. Specifically, they mentioned being able to access Kaw Point in the evenings to launch boats for nighttime angling. The Unified Government of Wyandotte County shuts the park gate at 10:00 pm thereby limiting access to launch a boat. Any vehicles behind the gate at that point must stay until the gate is opened at 7:00 am the next morning. River users also requested restrooms, trash cans or dumpsters, Americans with Disabilities Act (ADA) accessible fishing piers or docks, and kayak ramps.

— “ —

Turner boat ramp is sketchy and dangerous. [We] have run into people shooting guns at Turner access point.

— Surveyed Kansas River User

— ” —

— “ —

Walking along highway or crossing railroad tracks to get to access points at I-435 is dangerous.

— Surveyed Kansas River User

— ” —

Those we interviewed explained how they were able to get to the WaterOne low-head dam. Access from the south bank is prohibited as it is private property owned by WaterOne Public Water Utility and BNSF Railway. Public users can only legally access the river from the north bank. On the north side of the river, there is no public parking on the adjacent road (Woodend Road) and vehicles will be ticketed and towed by the City of Edwardsville for parking along the road. The nearest vehicle parking is located at a gas station (On the Go Travel Center, 9134 Woodend Rd, Edwardsville, KS) which allows parking for a \$5.00 fee and is

approximately a 0.65 mile walk to the river access (Figure 18). The lack of parking options for the access point at WaterOne Dam speaks to both the challenges of accessing the river at this location and the dedication of river users wanting to recreate at this location. This is a significant logistic and safety issue which likely prevents many from accessing this location.

We knew this part of the Kansas River has a reputation for criminal activity, so we maintained a two-person crew to complete counts and interviews for safety. River users lamented about theft of personal items or property at Turner Bridge access, including having their boat motor stolen, vehicle broken into, and gasoline and catalytic converter stolen. One person’s truck was stolen from Turner Bridge access while he was boating on the river the day we interviewed him!



**Figure 18:** Map of Kansas River users’ .65 mile route to reach WaterOne low-head dam.



It was not uncommon for us or river users to encounter homeless encampments or hear guns being fired. Many would feel safer if there were lights and law enforcement patrols. They also commented about too much trash at all three access areas and in the river. At least one person said he did not bring his grandchildren fishing with him because of excess trash and broken glass. This collection of safety issues may explain why we did not encounter many women and children during the study period. Regardless of socioeconomic factors, we identified several barriers that impede many users from safely and conveniently accessing and recreating on this stretch of the Kansas River.

— “ —

[We] would like closer and safer access to WaterOne. The amount of trash and broken glass at WaterOne limits fishing access for our kids due to broken glass along the bank.

— *Surveyed Kansas River User*

— ” —



## The Future of the Kansas River

The Kansas River represents a unique opportunity for people to catch girthy blue catfish, glide down a gentle run in a kayak, camp on a sandbar, teach their grandchildren to skip rocks, witness silver carp leaping out of the water, and spot bald eagles and puddle ducks. Immersing oneself in nature is a fundamental part of the human experience. Various cultures recognize the benefits of nature to our well-being: *shinrin-yoku*, or forest bathing, in Japan (Li 2018); the *friluftsliv* philosophy and centrality of nature to the Nordic people and Swedes (Gelter 2000); the ancestral and spiritual connectedness to nature by the *amaXhosa* (Cocks et al. 2012). We recognize the importance of the Kansas River to the well-being of the environment, community, and Kansans. We initiated this study because we lacked a basic understanding of users' activities on this publicly-accessible, invasive carp-pervaded stretch of river. Throughout this survey and with other projects on the Kansas river, we have devoted more time to the river now than we have in the previous five years. We have witnessed the difficulties and inadequacies that others have known all along.

In this report, we presented results and provided recommendations. We crafted these recommendations through the lens of a social-ecological systems framework. Social-ecological systems like the Kansas River are systems that are challenged by natural, ecological processes (e.g., climate change, invasive species) and human components (e.g., urbanization, non-point source pollution) (Koontz et al. 2015). KDWP and its partners will need to develop adaptive solutions due to the complexity of the problems we have identified. For example, multiple partners such as local police departments, KDWP natural resource officers, Unified Government of Wyandotte County, Friends of the Kaw, and local businesses, among others, will be needed to identify ways to improve safety at access points. Below we summarize these recommendations and end with an urgent call to action for increased coordination and attention to the Kansas River.



**Recommendation: Allocate additional resources to the Kansas River due to its popularity and high usage.**

The popularity of the Kansas River warrants an increase in resources dedicated to improving the rivers' capability of accommodating the high number of river users. As referenced previously, we estimated nearly 50,000 users enjoy the 14-mile stretch of surveyed Kansas River from March to October in 2022. We compared this to one of the more popular reservoirs in Kansas, Milford Reservoir. Milford Reservoir features 27 public access points compared to three on the lower Kansas River. To adequately serve the Kansas River users it would be pertinent to add access points and allow for 24-hour access. The river's dynamic flow due to precipitation events or drought can also limit the availability of shoreline. KDWP and community collaborators may need to design access opportunities for high and low flow. At a minimum, we should provide information about how to reach the public access points; for example, KDWP could host a dedicated web page to fishing on the Kansas River and promote the river maps on Friends of the Kaw's website. Digital or physical maps depicting safe and appropriate routes to access points would help cut down on trespassing. Most river users (70%) were shore-based, so improvements to get to the shore are paramount. The amount of available shoreline is not necessarily the issue, rather the locations to get to the shore are limited. This could be done by purchasing land adjacent to the river or by negotiating easements with private landowners and communities.

**Recommendation: Increase engagement efforts with non-English speaking constituents.**

**Recommendation: Increase engagement with river users about aquatic invasive species and how to prevent their spread.**

The lower stretch of the Kansas River runs through one of the most ethnically diverse areas in the state of Kansas. Of the 156,345 residents in Kansas City, KS, 47.9% are white and the remaining 52.1% reported as Black, Indigenous, or People of Color (US Census Bureau, 2022). This data is reflected in our study results where 47% of surveyed individuals were White or Caucasian and 41% were Black, Indigenous, or People of Color. Seventeen percent (17%) of users surveyed did not speak English, with Spanish being the predominant language. This further reinforces the importance of engaging with the diverse user groups. One way to increase engagement efforts with non-English speaking constituents is to offer translated education and outreach materials and publicly posted signage in other languages besides English. The importance of providing translated materials and increased outreach efforts to diverse groups is especially applicable when it comes to awareness of invasive species and how to prevent their spread. Through personal communication by KDWP employees and the Kansas River user survey, there is a lack of understanding surrounding regulations and the danger some invasive species pose on the river as a resource. We found that only 53% of BIPOC river users were aware of invasive carp compared to 75% of non-BIPOC users' level of awareness. An increase in translated signage and outreach materials would help increase awareness and potentially lead to a decrease in risk of invasive species spread. KDWP has the autonomy to regulate and manage the fisheries in Kansas, including the Kansas River.

**Recommendation: Legalize snagging for invasive carp.**

**Recommendation: Continue to periodically monitor the Kansas River fishers and anglers.**

We observed anglers using invasive carp for cut bait to catch catfish. Therefore, we recommend legalizing snagging for bighead and silver carp. Allowing snagging on infested portions of the river would add another method to control the invasive carp populations. Fifty percent (50%) of anglers were using invasive carp as bait and we anticipate anglers would support legalizing snagging for invasive carp. Only 12.5% of silver carp were released by anglers, which is an illegal species to release alive (Table 5). If KDWP legalizes snagging for bighead and silver carp as recommended, we should monitor its effect on the fishery and potential for angler conflict (i.e., crowding, dichotomous attitudes about snagging). We also have concerns that anglers would snag sportfish like channel catfish or native species like paddlefish. KDWP staff tried some experimental snagging at the WaterOne low-head dam and surrounding area, and 66% of fish snagged were invasive carps (V. Salazar, personal communication). These are some of the reasons we suggested periodic monitoring of the Kansas River fishery and anglers in our recommendation to be proactive in our management approach.

**Recommendation: Improve safety at access points.**

The general appearance, upkeep, and safety at the three access points (Kaw Point, Turner Bridge, and WaterOne low-head dam) are unsatisfactory at the time this report is published. We conveyed our observations and river users' own words throughout Research Question 6 to illustrate the poor condition and unsafe access points. We believe significant improvements could be made in a short amount of time with a routine maintenance regiment to make it safe for people to enjoy the river, including:

- ✓ Trash receptacles and pickup
- ✓ Maintenance of boat ramps, roads, trails, and parking lots
- ✓ Maintenance of facilities such as restrooms
- ✓ Safety lighting
- ✓ Increased law enforcement patrols

There are millions of dollars in grant money available for improvements to the environment in areas with disadvantaged communities including [Bipartisan Infrastructure Grants](#), [America the Beautiful Challenge grants](#), [Justice40 Initiative](#), and others. KDWP does not have the resources to take on these tasks alone, but we could share the load with our partners by securing grant money.



## The Future of the Kansas River | Call to Action

We conclude with a **call to action**. This call to action is for mobilizing additional resources to improve the Kansas River for the benefit of its intrinsic environment, community, and people. We asked river users for their comments about the Kansas River and recorded their responses. The most surprising finding

— “

WISH

To have a desire for something, such as something unattainable

— ”

from the qualitative data was people’s consistent use of one word – **WISH**.

Wish appears as one of the largest words in the word cloud of river users’ responses (Figure 19). When used as a verb, wish means “to have a desire for something, such as something unattainable” (Webster Merriam Dictionary 2023).



**Figure 19:** Word cloud containing frequently used words by surveyed Kansas River users in response to safety and access concerns on the river.

People wish for solutions for some of the issues described above because it feels out of reach and aspirational. In this call to action, we encourage KDWP and partners to get aspirational about potential solutions and improvements.

Imagine having a nature center nearby where kids can learn about the Kansas River and invasive species; newly-created paths, parking lots, and bathrooms for family-friendly fishing; a meetup of local

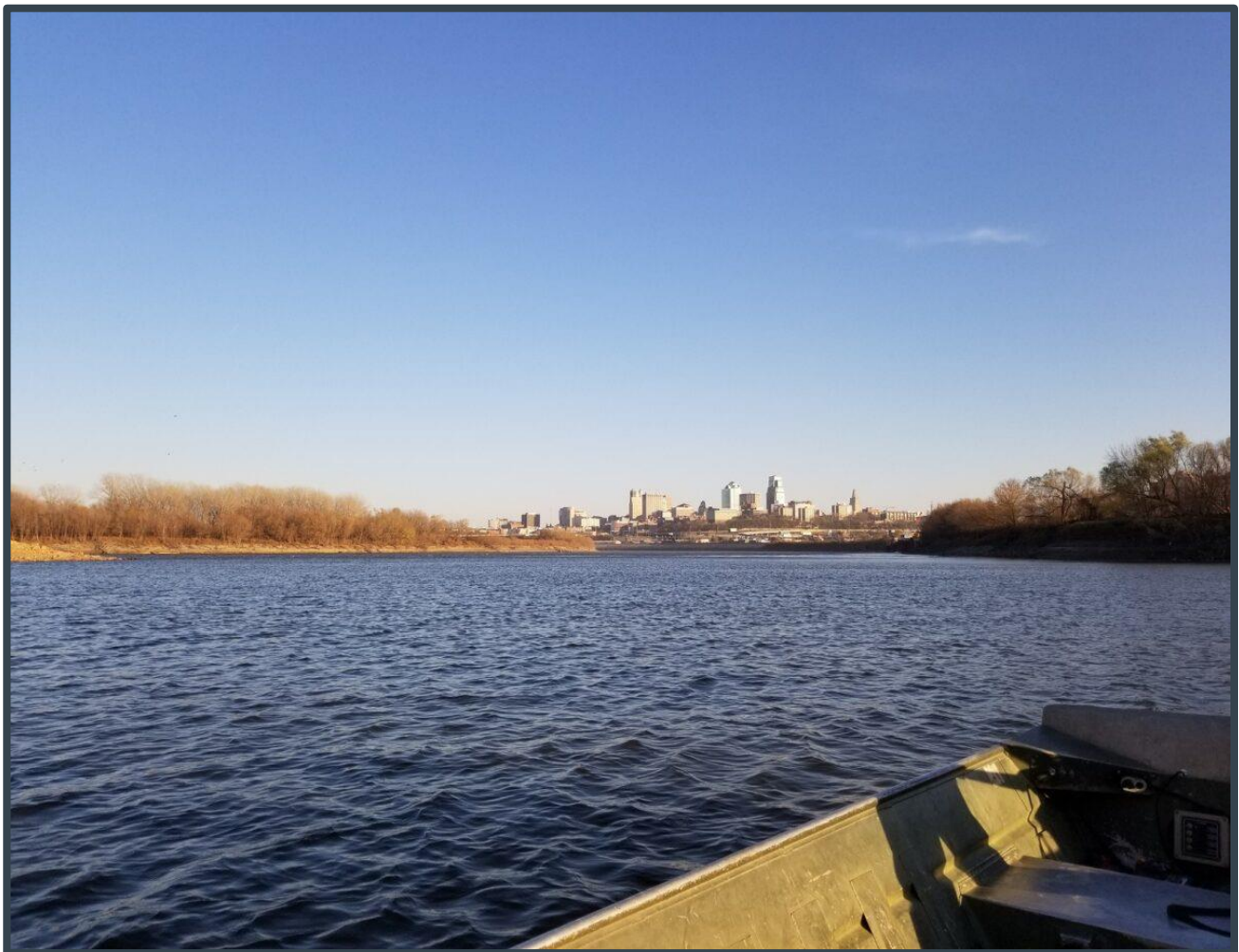
foragers who harvest stinging nettles along the river’s riparian corridor; organized float trips where kayakers launch from kayak-dedicated boat ramps; and community groups that organize clean up days because they care for and about the river. There is so much potential to connect even more people to the river, and in turn improving their quality of life and fostering their conservation ethic for the river. This wonderful piece of nature flows through the heart of a major city with an urban population to benefit diverse people. We aspire to see a balance between people enjoying the river and responsible conservation for the benefit of future generations.



A Kansas River angler’s depiction of the Kansas River and his call to action to “Keep the Kaw River clean [and] please no trash.”

## Acknowledgements

We have great gratitude to the many people that assisted with this project. We thank Ethan Schrek for data collection, Ernesto Flores for data collection and Spanish translation of interview and education material, and Vanessa Salazar for production of invasive carp education material. Justin Jones and Dana Peterson provided GIS work. Jeff Koch, Ben Neely, and John Reinke provided helpful comments and feedback. Caroline La Plante, Chris Chizinski, Kevin Pope, Kirk Steffensen, and Kris Starr all assisted with project conceptualization and survey design conversations. We would also like to acknowledge the river users who participated in survey interviews. Funding for this project was provided by Kansas Department of Wildlife and Parks and U.S. Fish and Wildlife Service (R6 National Invasive Carp Grant).



## Literature Cited

- Chapman DC (2010) Facts about invasive bighead and silver carps. <https://www.usgs.gov/publications/facts-about-invasive-bighead-and-silver-carps> Accessed 13 November 2023
- Cocks ML, Dold T, Vetter S (2012) 'God is my forest' – Xhosa cultural values provide untapped opportunities for conservation. South African Journal of Science 108(5/6) article #880 <https://sajs.co.za/article/view/9850>
- Council on Environmental Quality. Climate and Economic Justice Screening Tool. <https://screeningtool.geoplatform.gov/en/> Accessed 8 Dec 2023
- Eitzmann JL, Makinster AS, Paukert CP (2007) Distribution, abundance, and growth of blue suckers in a Great Plains, USA river. Fisheries Management and Ecology 14: 255–262
- Eitzmann JL, Paukert CP (2010) Urbanization in a Great Plains river: effects on fishes and food webs. River Research and Applications 26: 948–959
- Galat DL, Braaten PJ, Guy C et al (2023) Missouri River Basin. In: Delong MD, Jardine TD, Benke AC et al (eds) Rivers of North America 2nd Edition. p 436-440. Academic Press, Cambridge, Massachusetts
- Gelter H (2000) Friluftsliv: the Scandinavian philosophy of outdoor life. Canadian Journal of Environmental Education 5: 77-92
- Hunt KM, Ditton RB (2002) Freshwater fishing participation patterns of racial and ethnic groups in Texas. North American Journal of Fisheries Management 22: 52-65
- Kansas Department of Wildlife and Parks (2022) 2022 Kansas Fishing Regulations Summary, Pratt, KS
- Koontz TM, Gupta D, Mudliar P et al (2015) Adaptive institutions in social-ecological systems governance: a synthesis framework. Environmental Science & Policy 53(Part B): 139-151  
<https://doi.org/10.1016/j.envsci.2015.01.003>
- Li Q (2018) Forest Bathing: How Trees Can Help You Find Health and Happiness. Viking, New York, NY. 320 pp
- Steffen SF (2022) 2020 Kansas Licensed Angler Survey. Kansas Department of Wildlife and Parks, Emporia, KS. 51 pp
- United States Census Bureau (2022) QuickFacts: Kansas City Kansas. <https://www.census.gov/quickfacts/fact/table/kansascitycitykansas/PST045222> Accessed 18 December 2023
- University of Kansas, Kansas Biological Survey (2023) KS Land Cover. <https://kars-geoplatform-ku.hub.arcgis.com/pages/kansas-land-cover> Accessed 29 December 2023
- US Geological Survey (2016) USGS Water Data for the Nation. <https://waterdata.usgs.gov/nwis> Accessed 2 January 2023
- Merriam-Webster (2023) Dictionary. <https://www.merriam-webster.com/dictionary/wish> Accessed 8 December 2023

## Appendix A

Table 1. Estimates of mean, total, and standard error (SE) of river users and effort (in user-hours) derived from roving-roving survey.

Day type	Count method	Shift	n	Mean # users	Total # users	River user SE	Mean river user effort	Total river user effort	River user effort SE
WD	Boat	AM	6	19.50	3,413	2,646.50	32.41	2,916.67	2,245.37
WD	Boat	PM	6	63.33	11,083	2,411.36	105.56	9,500.00	2,097.62
WD	Truck	AM	24	17.46	3,055	2,564.18	27.06	8,822.46	7,864.71
WD	Truck	PM	25	41.76	7,308	6,275.91	65.35	21,892.29	20,550.59
				<b>Total</b>	<b>24,859</b>		<b>Total</b>	<b>43,131.42</b>	
WE	Boat	AM	8	58.88	4,121	2,031.36	97.92	11,750.00	5,811.18
WE	Boat	PM	6	114.50	8,015	2,907.40	190.74	17,166.67	6,250.33
WE	Truck	AM	24	68.58	4,801	3,886.70	103.97	33,269.14	26,915.31
WE	Truck	PM	26	87.23	6,106	4,048.75	134.22	46,975.78	33,059.08
				<b>Total</b>	<b>23,043</b>		<b>Total</b>	<b>109,161.59</b>	
				<b>Grand Total</b>	<b>47,902</b>		<b>Grand Total</b>	<b>152,293.00</b>	

Table 2. Estimates of mean, total, and standard error (SE) of boat anglers and effort (in angler-hours) derived from roving-roving creel survey.

Day type	Count method	Shift	n	Mean # boat anglers	Total # boat anglers	Boat anglers SE	Mean boat effort	Boat effort	Boat effort SE
WD	Boat	AM	6	6.67	1,167	1,190.34	11.11	1,000.00	1,000.00
WD	Boat	PM	6	17.33	3,033	3,004.03	28.70	2,583.33	2,596.47
WD	Truck	AM	24	3.71	649	1,120.52	5.95	1,939.57	3,508.01
WD	Truck	PM	25	5.48	959	1,453.76	8.49	2,844.77	4,643.18
				<b>Total</b>	<b>5,808</b>		<b>Total</b>	<b>8,637.67</b>	
WE	Boat	AM	8	20.88	1,461	828.62	34.72	4,166.67	2,383.81
WE	Boat	PM	6	32.83	2,298	1,028.23	54.63	4,916.67	2,177.54
WE	Truck	AM	24	11.50	805	647.51	17.74	5,676.71	4,880.40
WE	Truck	PM	26	12.04	843	973.68	19.02	6,656.65	8,099.43
				<b>Total</b>	<b>5,407</b>		<b>Total</b>	<b>15,416.70</b>	
				<b>Grand Total</b>	<b>11,215</b>		<b>Grand Total</b>	<b>24,054.37</b>	

Table 4. Number and percent of anglers' preferred species.

Species	Number of anglers	Percent
Catfish (channel, blue, flathead)	263	64.3
No preference	126	30.8
Other species	20	4.9
<b>Total</b>	<b>409</b>	<b>100.0</b>



Table 3. Estimates of mean, total, and standard error (SE) of shore anglers and effort (in angler-hours) derived from roving-roving creel survey.

Day type	Count method	Shift	n	Mean # shore anglers	Total # shore anglers	Shore anglers SE	Mean shore effort	Shore effort	Shore effort SE
WD	Boat	AM	6	11.83	2,071	2,192.51	19.44	1,750.00	1,864.14
WD	Boat	PM	6	37.33	6,533	3,201.43	62.04	5,583.33	2,764.36
WD	Truck	AM	24	10.00	1,750	1,559.28	15.26	4,975.86	4,685.55
WD	Truck	PM	25	27.52	4,816	4,202.77	43.00	14,406.49	13,723.94
				<b>Total</b>	<b>15,170</b>		<b>Total</b>	<b>26,715.68</b>	
WE	Boat	AM	8	25.88	1,811	1,248.52	43.06	5,166.67	3,523.17
WE	Boat	PM	6	63.50	4,445	2,423.15	105.56	9,500.00	5,176.87
WE	Truck	AM	24	33.13	2,319	1,624.86	50.19	16,060.91	11,360.58
WE	Truck	PM	26	52.65	3,686	2,273.09	80.97	28,340.69	18,620.85
				<b>Total</b>	<b>12,261</b>		<b>Total</b>	<b>59,068.27</b>	
				<b>Grand Total</b>	<b>27,431</b>		<b>Grand Total</b>	<b>85,783.95</b>	

Table 5. Total computed number of fish harvested and released.

Species	Weekday				Weekend				Total Harvested	Total Released
	Shore Harvest	Shore Released	Boat Harvest	Boat Released	Shore Harvest	Shore Released	Boat Harvest	Boat Released		
Bighead carp	115	0	0	0	0	0	45	0	156	0
Blue catfish	403	461	299	0	568	521	536	1,832	1,668	3,127
Channel catfish	1,614	692	0	47	3,647	1,089	626	2,145	6,201	4,690
Common carp	58	0	299	0	0	379	0	0	104	417
Flathead catfish	115	173	299	0	95	379	89	223	365	834
Freshwater drum	461	58	0	0	521	284	0	89	990	469
Gizzard shad	0	0	0	0	0	0	179	0	208	0
Goldeye	0	0	0	0	47	0	134	0	208	0
Grass carp	0	0	0	0	142	0	45	0	208	0
Longnose gar	0	231	0	0	47	332	0	313	52	938
Shortnose gar	58	58	0	0	95	758	0	715	156	1,720
Shovelnose sturgeon	0	115	0	0	0	237	0	0	0	365
Silver carp	346	0	2,092	0	1,184	284	492	45	2,553	365
Smallmouth buffalo	115	0	0	0	332	0	0	45	469	52
Softshell turtle	0	58	0	0	0	0	0	0	0	52
<b>Total</b>	<b>3,285</b>	<b>1,844</b>	<b>2,988</b>	<b>47</b>	<b>6,679</b>	<b>4,263</b>	<b>2,145</b>	<b>5,407</b>	<b>13,340</b>	<b>13,028</b>

Appendix B

(Office use only) Data entered by: \_\_\_\_\_



KDWP Creel Survey

Progressive Count Sheet for Kansas River

<b>River code:</b>		<b>KSRV</b>			
<b>Starting Point (Circle one below):</b>					
Downstream					Upstream
Kaw Point	Turner Bridge		Water One Dam		
<b>Month</b>		<b>Day</b>	<b>Year</b>	<b>2022</b>	
<b>Period (Only select ONE):</b>	AM Shift		PM Shift		
	<input type="checkbox"/>		<input type="checkbox"/>		
Activity Type	User Type		Boat Type		
	Shore	Boat	Kayak	Canoe	Motorboat
Recreational Boating					
Wildlife-watching					
Swimming					
Fishing					
Paddling					
Hunting					
Other activity #1 (specify activity):					
Other activity #2 (specify activity):					
<b>Notes:</b>					

(Office use only) Data entered by: \_\_\_\_\_

ID# \_\_\_\_\_

**Kansas River Recreationalist Interview**

Activity Participation	Recreational boating	Wildlife-watching	Swimming	Fishing	Padding	Hunting	Other (specify):
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Angler Type	Shore	Boat	Non-English (write language below)	BIPOC	Boat Type	Kayak	Canoe	Motorboat
	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Gender	Male	Female	Zip code	Year born
	<input type="checkbox"/>	<input type="checkbox"/>		

1. Have you been interviewed already this year on the Kansas River by me or another person that works for the Kansas Department of Wildlife and Parks, not including a game warden?

- Yes     No     Unsure, I don't know.

2. Are you <insert activity, e.g., fishing, kayaking, etc.> in the Kansas River for your entire trip today?

- Yes, 100% of trip in KS River  
 No, partially – **What percent of your trip is spent in the Kansas River?** \_\_\_\_\_ %  
 No, fishing in Missouri River only. \*Mark this one if they're just using the access point on the Kansas River to get to the MO River. \*

3. Have you heard of these plant and animal species?

Bighead Carp aka Asian Carp	<input type="checkbox"/> Yes <input type="checkbox"/> No	White Perch	<input type="checkbox"/> Yes <input type="checkbox"/> No	Hydrilla	<input type="checkbox"/> Yes <input type="checkbox"/> No
Largemouth Bass	<input type="checkbox"/> Yes <input type="checkbox"/> No	Channel Catfish	<input type="checkbox"/> Yes <input type="checkbox"/> No	Grass Carp	<input type="checkbox"/> Yes <input type="checkbox"/> No
Black Carp	<input type="checkbox"/> Yes <input type="checkbox"/> No	Eurasian Water Milfoil	<input type="checkbox"/> Yes <input type="checkbox"/> No	Silver Carp aka Asian Carp	<input type="checkbox"/> Yes <input type="checkbox"/> No
Zebra Mussels	<input type="checkbox"/> Yes <input type="checkbox"/> No				

Silver, Bighead, Grass, and Black carp are all non-native, invasive fish that can grow to more than 40lbs and may cause native fish species in a lake or river to decline by more than 90%. Silver carp are the fish you have probably seen videos of jumping 4-6ft out of the water and can and do injure people. The young of all these invasive carp look just like native baitfish, so please never move live fish between waterbodies as you could be inadvertently introducing these harmful invasive carp into new lakes or rivers.

4. Are you aware that Bighead and Silver Carp are present in the Kansas River?

- Yes     No

5a. Have you reduced your time on the Kansas River because of Bighead or Silver Carp?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> n/a
5b. Have you increased your time on the Kansas River because of Bighead or Silver Carp?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> n/a
5c. Have you been hit or injured by Bighead or Silver Carp?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> n/a
5d. Do you fear for your safety or fear being injured by Bighead or Silver Carp?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> n/a
5e. Have you fished for, as in specifically targeted, Bighead and Silver Carp?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> n/a
5f. Have you harvested Bighead or Silver Carp for food?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> n/a
5g. Have you used Bighead or Silver Carp as bait?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> n/a
5h. Have Bighead or Silver Carp negatively impacted your fishing for other species? If so, how? _____	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> n/a
5i. Have Bighead or Silver Carp positively impacted your fishing for other species? If so, how? _____	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> n/a
5j. Have you ever had Bighead or Silver Carp jump into your boat?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> n/a
5k. Have Bighead or Silver Carp damaged your boat or other equipment?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> n/a
5l. Are there any other ways that Bighead or Silver Carp have impacted you that you want to share with us? _____	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> n/a

(Office use only) Data entered by: \_\_\_\_\_

ID# \_\_\_\_\_

**KDWP Creel Survey – Angler Interview**

Impoundment (4 letter code):		KSRV		Month:		Day:		Year:	2022
River Reach:		Upper or lower		Period (only select <b>ONE</b> ):					
Trip Status:	Complete	Incomplete		AM Shift		PM Shift			
	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>			
Latitude:				Longitude:					
Hours fished (ex. 3.75, 2.5):				Species Preference:					
Zip code:									
Satisfaction (circle one):	Not at all Satisfied	Somewhat Satisfied	Neutral	Satisfied	Very Satisfied	Angler Type:	Shore		Boat
	1	2	3	4	5		<input type="checkbox"/>	<input type="checkbox"/>	
Anglers by Age Group:			≤ 15	16 to 64		65-74		75 +	
	# of Males:								
# of Females:									

Species	Length	Kept	Released
Example: <i>Largemouth Bass</i>	18	1	0

Do you have any comments about safety of the access points or being on the Kansas River?



(Office use only) Data entered by: \_\_\_\_\_

ID# \_\_\_\_\_

### ENTREVISTA PARA AFICIONADOS DEL RECREO EN EL RÍO KANSAS

Participación en actividades	Navegación recreativa	Observer fauna	Nadar	Pescar	Remar	Cazar	Otro (especificar):	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Tipo de pescar	Orilla	Barco	No inglés (escribe idioma abajo)	Afrodescendiente o indígena	Tipo de barco	Kayak	Canoa	Lancha motora
	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Género	Hombre	Mujer	Código postal		Año de nacimiento			
	<input type="checkbox"/>	<input type="checkbox"/>						

1. ¿Le han entrevistado ya este año en el Río Kansas por mí o por otra persona que trabaja para el Kansas Department of Wildlife and Parks, sin incluir un guarda de caza y pesca?  
 Sí       No       No sé, no estoy seguro.

2. ¿Va a estar (ponga su actividad, por ejemplo, pescando, remando, etc.) en el Río Kansas todo el día?  
 Sí, 100% de mi viaje está en el Río Kansas  
 No, una parte. ¿Qué porcentaje de su viaje se realiza en el Río Kansas? \_\_\_\_\_ %  
 No, pesco solamente en el Río Missouri.

**\*Marque esto si usted solamente utiliza el punto de acceso en el Río Kansas para llegar al Río Missouri. \***

3. Have you heard of these plant and animal species?

Carpa de cabeza grande alias Carpa asiática	<input type="checkbox"/> Sí <input type="checkbox"/> No	Perca blanca	<input type="checkbox"/> Sí <input type="checkbox"/> No	Hydrilla	<input type="checkbox"/> Sí <input type="checkbox"/> No
Lobina boca grande	<input type="checkbox"/> Sí <input type="checkbox"/> No	Bagre de canal	<input type="checkbox"/> Sí <input type="checkbox"/> No	Carpa herbívora	<input type="checkbox"/> Sí <input type="checkbox"/> No
Carpa negra	<input type="checkbox"/> Sí <input type="checkbox"/> No	Frailecillos	<input type="checkbox"/> Sí <input type="checkbox"/> No	Carpa plateada alias Carpa asiática	<input type="checkbox"/> Sí <input type="checkbox"/> No
Mejillones cebra	<input type="checkbox"/> Sí <input type="checkbox"/> No				

La carpa negra, plateada, herbívora y de cabeza grande son peces invasores no nativos que pueden crecer a más de 40 libras y pueden causar que las especies nativas de peces en un lago o río disminuyan por más del 90%. Las carpas plateadas son los peces de que usted probablemente ha visto videos donde saltan del agua hasta 4 a 6 pies y pueden lastimar y lastiman a la gente. Los peces jóvenes de todas estas carpas invasoras se parecen a los peces nativos usados como carnada, así que por favor no mueva ningún pez vivo entre un cuerpo de agua y otro porque podría introducir estas carpas invasoras dañinas en lagos o ríos nuevos sin querer.

4. ¿Sabía que hay Carpa de cabeza grande y carpa plateada en el Río Kansas?       Sí    No

5a. ¿Ha reducido su tiempo en el Río Kansas debido a Carpa plateada o de cabeza grande?       Sí    No    n/a

5b. ¿Ha aumentado su tiempo en el Río Kansas debido a Carpa plateada o de cabeza grande?       Sí    No    n/a

5c. ¿Le han pegado o lastimado una Carpa plateada o de cabeza grande?       Sí    No    n/a

5d. ¿Usted teme por su seguridad o teme estar lastimado por una Carpa plateada o de cabeza grande?       Sí    No    n/a

5e. ¿Ha intentado pescar Carpa plateada o de cabeza grande a propósito?       Sí    No    n/a

5f. ¿Ha pescado Carpa plateada o de cabeza grande para comer?       Sí    No    n/a

5g. ¿Ha usado Carpa plateada o de cabeza grande como carnada?       Sí    No    n/a

5h. ¿La Carpa plateada o de cabeza grande ha tenido un impacto negativo en su pescar por otras especies? En el caso que sí, ¿De qué manera? \_\_\_\_\_       Sí    No    n/a

5i. ¿La Carpa plateada o de cabeza grande ha tenido un impacto positivo en su pescar por otras especies? En el caso que sí, ¿De qué manera? \_\_\_\_\_       Sí    No    n/a

5j. ¿Alguna vez saltó en su barco una Carpa plateada o de cabeza grande?       Sí    No    n/a

5k. ¿La Carpa plateada o de cabeza grande le han dañado su barco u otro equipo?       Sí    No    n/a

5l. ¿Hay alguna otra manera en que la Carpa plateada o de cabeza grande le han impactado que quiere compartir con nosotros? \_\_\_\_\_       Sí    No    n/a



