

Commonwealth of Kentucky

Date: June 30, 2022

D-J Grant No. F-40, Segment 44

Period: 01 April 2021
through
31 March 2022

ANNUAL PERFORMANCE REPORT

for

Statewide Fisheries Investigation Project

Part II of IV

Subsection II: Urban Fisheries Branch



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Department of Fish and Wildlife Resources
Fisheries Division



STATE: Kentucky

PROJECT NO: F-40-44

GRANT TYPE: Research and Survey

GRANT TITLE: Statewide Fisheries Investigations

SUBSECTION I TITLE: Urban Fishing Program in Kentucky

PERIOD COVERED: 1 April 2021 - 31 March 2022

RESEARCH AND SURVEY SECTION

Subsection II

Project I Urban Fishing Program in Kentucky

Project Objective: To develop high quality urban fisheries in Kentucky that lead to high angler use, catch rates, and satisfaction.

A. ACTIVITY

During 1 April 2021 – 31 March 2022, 153,443 catfish (channel catfish and channel catfish x blue catfish hybrids) and 120,750 rainbow trout and 6,900 hybrid sunfish (bluegill x green sunfish) were stocked in the Fishing in Neighborhoods (FINs) lakes. The program currently includes 45 lakes in 28 counties. A memorandum of agreement is in place with all lake owners enrolled in the FINs program giving Kentucky Department of Fish and Wildlife Resources (KDFWR) the authority to manage fish populations and set standardized regulations for all lakes in the program. An agency policy for adding new lakes to the FINs program was drafted and approved in January 2015.

Advertising and marketing efforts were employed in a continuing attempt to raise awareness of the FINs program, increase participation, and recruit new anglers. Facebook and Twitter notifications were posted around stocking dates. District fisheries biologists also mentioned the FINs program and stocking schedules in their weekly fishing reports. Flyers promoting the FINs program were distributed at boat shows. A one-page advertisement for the FINs program appeared in the 2021-22 Kentucky Fishing and Boating Guide. Additionally, a one-page stocking table appeared in the 2021 and 2022 Kentucky Afield calendars. Newspaper, magazine and tv interviews, as well as press releases, were issued to promote the program. All lake owners were notified prior to fish being stocked so they could contact their followers via social media. The FINs website was routinely updated to convey the latest stocking information and list of lakes enrolled in the program. Kiosk posters promoting the FINs program and KDFWR's role in fish management and stocking was displayed at 25 of the 45 lakes. Information on the kiosk posters included the FINs logo, mission statement, fish stocking dates and quantities, license requirements, fishing regulations, fish identification, poacher hotline, no littering graphic, brief overview of fishery and past sampling, basic knot tying and the location of a rod loaner program if present.

Spring electrofishing sampling was conducted at 26 FINs lakes in May 2021. Samples were conducted to gather information on species composition, catch rates, and size structure. Furthermore, tandem hoop nets were used to sample catfish populations at 17 FINs lakes in October 2021.

B. TARGET DATES FOR ACHIEVEMENT AND ACCOMPLISHMENT

Planned work achievement date- 31 March 2022

Work accomplished- 31 March 2022

C. SIGNIFICANT DEVIATIONS

None.

D. REMARKS

None.

E. RECOMMENDATIONS

Continue project as planned on the next grant segment.

Project II Evaluation of Angling Effort Using Remote Cameras

Project Objective: To assess angling effort at the FINs program lakes. This will aid in determining whether FINs lakes around the state are having similar angling pressure to FINs lakes in Central Kentucky where recent creel surveys have been conducted. This data will also aid in assessing if current stocking strategies are adequate for the amount and timing of angling effort. If certain FINs lakes are not receiving the perceived pressure, then stocking rates could be reduced or other lake(s) substituted in the FINs program.

A. ACTIVITY

Cameras were installed at 15 FINs lakes in September 2017, with counts beginning 1 October 2017 and running through 30 September 2018. Additionally, cameras were set up at Jacobson Lake in October 2018 with counts beginning 1 November 2018 and running through 31 October 2019. The final group of eight FINs lakes had cameras set up in 2019 with counts beginning 1 October 2019 and running through 30 September 2020. Cameras were checked every 6-8 weeks to exchange memory cards and batteries. Both primary and secondary FINs lakes were surveyed to get a range of fishing pressure.

Cameras were set up to take a picture every half-hour from daylight to dusk. Only images at the top of the hour were used for analysis; however, the half hour pictures helped postulate if someone was fishing as well as aided in the number of in-person visual counts that could be collected for the correction factor. Timelapse Image Analyzer was used to assist KDFWR personnel with image analysis. This free software designed by the University of Calgary speeds up image analysis and reduces errors, by automatically populating many of the fields needed for analysis and reduces data entry errors by placing the image and data entry on the same form. In a previous study, this software was found to cut image analysis time in half versus viewing images and entering data in separate spreadsheet. Images analysis by KDFWR technician staff was completed in April 2021, with final analysis of data still ongoing. Cameras were collected after the 12-month period. The first instance of vandalism occurred in June 2018 when a camera at Logan Hubble Park Lake went missing along with the security box.

B. TARGET DATES FOR ACHIEVEMENT AND ACCOMPLISHMENT

Planned work achievement date- 31 March 2022

Work accomplished, cameras collected - Analysis of images and data ongoing

C. SIGNIFICANT DEVIATIONS

None

D. REMARKS

None.

E. RECOMMENDATIONS

The analysis is being completed for 24 additional FINs lakes surveyed in 2017-18, 2018-19 and 2019-20 that will appear in Segment 45.

Project III Evaluation of Stocking Original and Reciprocal Cross Hybrid Striped Bass in Three Kentucky Impoundments

Project Objective: To determine if there is a differential performance of original and reciprocal hybrid striped bass in three Kentucky impoundments: Herrington Lake (2,940 acres), Taylorsville Lake (3,050 acres) and Rough River Lake (5,100 acres). This will be determined by comparing growth, recruitment to age-1, 2, and 3, condition, and relative abundance of the two crosses of hybrid striped bass.

A. ACTIVITY

Final report was completed and submitted in Segment 44.

B. TARGET DATES FOR ACHIEVEMENT AND ACCOMPLISHMENT

Planned work achievement date- 31 March 2021

Work accomplished- 31 March 2021

C. SIGNIFICANT DEVIATIONS

None.

D. REMARKS

None.

E. RECOMMENDATIONS

Close Project.

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Section I: Stocking Initiative

FINDINGS

The Fishing in Neighborhoods (FINs) program underwent an expansion from 6 pilot lakes in 2009 to 29 lakes in the spring of 2010. Additional lakes were added and subtracted in subsequent years, bringing the current total to 45 lakes in 28 counties statewide. Total surface acreage for lakes enrolled in the FINs program is 298 acres. Fishing in Neighborhoods lakes are continuously scrutinized to ensure they are meeting program goals. Robert J. Barth Park Lake was approved for inclusion in the FINs program at the December 2020 commission meeting with fish stockings to begin in November 2021 after regulations were approved by the Legislative Review Committee. The lake is located in the densely populated area of Northern Kentucky in the Cincinnati metropolitan area.

Catfish (channel catfish and channel catfish x blue catfish hybrids), rainbow trout and hybrid sunfish (bluegill x green sunfish) were the species stocked in the FINs lakes from April 2021 – March 2022. These stockings of large keeper-size catfish (15 in avg), trout (10 in avg), and hybrid sunfish (6 in avg) provide anglers with quality fishing opportunities close to home. The FINs lakes are designated as either primary or secondary lakes (Table 1), which determines stocking rates and months (Table 2).

In 2021-22, primary lakes received four stockings of catfish (12.0 – 20.0 in) occurring in April, May, June 2021, and March 2022; secondary FINs lakes received two annual stockings of catfish in April and June (Tables 2-3). There was a surplus of catfish in 2021 after a cancellation of one of the catfish stocking months in 2020 due to COVID-19 restrictions. This surplus of catfish resulted in many of the lakes receiving extra fish during the scheduled stocking months in 2021 (Table 3). Additionally, some lakes received a bonus catfish stocking in October 2021 (Table 4). Pfeiffer Fish Hatchery supplies all the catfish for the FINs program, with a total of 153,443 catfish stocked from 1 April 2021 – 31 March 2022 (Table 5).

Trout stocking numbers were reduced by roughly 25% in 2017 in order to produce larger trout for the FINs program. Overall weight of stocked trout remained the same for the FINs program; however, average size increased from roughly 9.0 in and 0.3 lbs to 10.3 in and 0.4 lbs. All rainbow trout for the FINs program are produced at Wolf Creek National Fish Hatchery. In total, 120,750 rainbow trout were stocked from 1 April 2021 – 31 March 2022 (Table 5). In 2020, the trout stocking schedule was revised to increase hauling efficiency by maximizing tank space on the trucks. The revision shifted the number of fish stocked monthly, while keeping overall numbers comparable. Rainbow trout (10.0 – 10.5 in) are stocked at a standardized rate in the FINs lakes (Table 2), with most lakes receiving three trout stockings annually: October or November, February and March. Carlson Lake at Ft. Knox does not get stocked with rainbow trout because concerns were raised of trout swimming up into Grahampton Cave, which feeds Carlson Lake, and feeding upon northern cavefish (*Amblyopsis spelaea*) which are listed as threatened and ghost crayfish (*Orconectes inermis inermis*). Both species are ill-adapted to avoiding trout predation. Waymond Morris Park Lake, Kentucky Horse Park Rolex Lake, Flemingsburg Old Reservoir, Brickyard Pond and Maysville-Mason County Rec Park Lake do not receive the March trout stocking. These lakes had lower utilization of trout and high numbers of trout were seen while sampling in May of previous years.

In total, 6,900 hybrid sunfish (5.0 – 10.0 in) were stocked in June 2021 (Tables 3 & 5) in lakes that had poor sunfish numbers, heavy fishing pressure, or free fishing weekend events. The hybrid sunfish request for FINs lakes was reduced from previous years with the intent of Pfeiffer Hatchery to produce larger fish (6.0 – 8.0 in). Very few of these hybrid sunfish are observed the following spring in electrofishing samples. There also appears to be backcrossing or errors in determining the sex of broodstock, as green sunfish are present in the hybrid sunfish stockings. The hybrid sunfish stockings will cease after 2021 due to these concerns, with sunfish stockings shifting to larger bluegill (6.0 – 8.0 in). A total of 15,000 bluegill annually will be in the production plan to cover the needs of the FINs program.

Fish stocking rates at the FINs lakes are much higher than at larger reservoirs or streams around the state. Utilization of these stocked fish is being assessed through routine electrofishing and tandem hoop

net samples. Furthermore, exploitation studies, creel surveys, and use of time-lapse cameras to assess fishing pressure have been used to assess angling pressure at FINs lakes.

Table 1. Lakes enrolled in the Fishing in Neighborhoods program for 2021-22.

Lake	County	Lake designation
Anderson County Community Park Lake	Anderson	Primary
Camp Ernst Lake	Boone	Primary
Millennium Park Pond	Boyle	Primary
Alexandria Community Park Lake	Campbell	Primary
Robert J. Barth Park Lake	Campbell	Primary
Panther Creek Park Lake	Daviess	Primary
Waymond Morris Park Lake	Daviess	Primary
Yellow Creek Park Lake	Daviess	Primary
Jacobson Park Lake	Fayette	Primary
Lower Sportsman's Lake	Franklin	Primary
Upper Sportsman's Lake	Franklin	Primary
Kess Creek Park Lake	Graves	Primary
James D. Beville Park Lake	Grayson	Primary
Rotary Park Lake	Hickman	Primary
Tom Wallace Park Lake	Jefferson	Primary
Waverly Park Lake	Jefferson	Primary
William F. Miles Angler Lake	Jefferson	Primary
William F. Miles Green Heron Lake	Jefferson	Primary
Lake Mingo	Jessamine	Primary
Southland Church Lake	Jessamine	Primary
Middleton Mills Long Pond	Kenton	Primary
Middleton Mills Shelterhouse Pond	Kenton	Primary
Brickyard Pond	Knox	Primary
Whitehall Park Lake	Madison	Primary
Lake Montgomery	McCracken	Primary
Carlson Lake (Ft. Knox)	Meade	Primary
Easy Walker Park Pond	Montgomery	Primary
Lusby Lake	Scott	Primary
Scott County Park Lake	Scott	Primary
Three Springs Lake	Warren	Primary
Southgate Lake	Campbell	Secondary
Kentucky Horse Park Rolex Lake	Fayette	Secondary
Flemingsburg Old Reservoir	Fleming	Secondary
Lake Pollywog	Grant	Secondary
Leary Lake	Grant	Secondary
Kingdom Come State Park Lake	Harlan	Secondary
Madisonville City Park Lake South	Hopkins	Secondary
Cherokee Park Lake	Jefferson	Secondary
Fisherman's Park Lake # 3	Jefferson	Secondary
Fisherman's Park Lake # 4	Jefferson	Secondary
Prisoners Lake	Kenton	Secondary
Logan Hubble Park Lake	Lincoln	Secondary
Mike Miller Park Lake	Marshall	Secondary
Maysville-Mason County Recreation Park Lake	Mason	Secondary
Bloomfield Park Lake	Nelson	Secondary

Table 2. Fishing in Neighborhoods lakes fish stocking rates and schedule for 2021-22.

Lake designation	Fish species	Stocking rate (fish/acre)	Months stocked
Primary	Catfish	1-10 acres 200/acre 10-20 acres 100/acre > 20 acres 50/acre	Apr, May, Jun, Mar 22
Secondary	Catfish	1-10 acres 200/acre 10-20 acres 100/acre > 20 acres 50/acre	Apr, Jun
Primary/Secondary	Rainbow trout	1-2.9 acres 500 fish 3.0-4.4 acres 750 fish 4.5-30 acres 1,500 fish > 30 acres 3,000 fish	Oct or Nov, Feb, Mar 22
Primary/Secondary	Hybrid sunfish	1-3.4 acres 500 fish/acre 3.5-10 acres 300 fish/acre > 10 acres 3,000 fish	Jun

Table 3. Number of fish stocked in Fishing in Neighborhood lakes from 1 April 2021 – 31 March 2022. Asterisk (*) denotes deviation from stocking plan.

Lake	County	Acreage	Rainbow trout				Catfish (channel/hybrid)				Hybrid sunfish
			Oct 21	Nov 21	Feb 22	Mar 22	Apr 21	May 21	Jun 21	Mar 22	Jun 21
Anderson County Community Park Lake	Anderson	1.0		500	500	500	324*	400*	240*	200	
Camp Ernst Lake	Boone	25.0		1,500	1,500	1,500	1,250	1,332*	2,690*	1,250	
Millennium Park Pond	Boyle	2.2		500	500	500	647*	400	480*	400	
Southgate Lake	Campbell	1.8		500	500	500	400		600*		
Alexandria Community Park Lake	Campbell	7.0		1,500	1,500	1,500	1,400	1,600*	1,600*	1,400	300*
Robert J. Barth Park Lake	Campbell	3.7		750	750	750				700	
Panther Creek Park Lake	Daviess	3.8	750		750	750	800	1,000*	1,600*	800	
Waymond Morris Park Lake	Daviess	4.8	1,500		1,500		1,000	1,000	1,000	1,000	
Yellow Creek Park Lake	Daviess	3.1	750		750	750	600	1,000*	800*	600	
Jacobson Park Lake	Fayette	46.3	3,000		3,000	3,000	4,175	2,300	3,168*	2,300	
Kentucky Horse Park Rolex Lake	Fayette	5.6		1,500	1,500		1,100		1,100		
Flemingsburg Old Reservoir	Fleming	10.8		1,500	1,500		1,100		2,536*		
Lower Sportsman's Lake	Franklin	2.7	500		500	500	1,030	600	720*	600	
Upper Sportsman's Lake	Franklin	6.2	1,500		1,500	1,500	3,210	1,200	1,440*	1,200	300*
Lake Pollywog	Grant	3.5		750	750	750	700		1,700*		
Leary Lake	Grant	4.6		1,500	1,500	1,500	900		1,900*		
Kess Creek Park Lake	Graves	2.1	500		500	500	400	666*	400	400	
James D. Beville Park Lake	Grayson	3.1	750		750	750	600	1,000*	1,200*	600	
Kingdom Come State Park Lake	Harlan	2.5	500		500	500	500		1,000*		
Rotary Park Lake	Hickman	1.0	500		500	500	200	333*	200	200	
Madisonville City Park Lake South	Hopkins	25.9	1,500		1,500	1,500	1,250		1,250		
Cherokee Park Lake	Jefferson	4.2	750		750	750	1,040*		960		
Fisherman's Park Lake # 3	Jefferson	1.8	500		500	500	400		800*		
Fisherman's Park Lake # 4	Jefferson	2.4	500		500	500	400		800*		
Tom Wallace Park Lake	Jefferson	4.8	1,500		1,500	1,500	1,000	1,000	2,260*	1,000	1,500
Waverly Park Lake	Jefferson	4.5	1,500		1,500	1,500	900	1,000*	1,960*	900	1,500
William F. Miles Angler Lake	Jefferson	3.6	750		750	750	700	900*	720*	700	
William F. Miles Green Heron Lake	Jefferson	1.1	500		500	500	200	333*	360*	200	
Lake Mingo	Jessamine	2.5	500		500	500	500	500	1,080*	500	
Southland Church Lake	Jessamine	2.6	500		500	500	500	500	600*	500	500*
Middleton Mills Long Pond	Kenton	1.2	500		500	500	300	333*	700*	300	
Middleton Mills Shelterhouse Pond	Kenton	1.2	500		500	500	300	333*	700*	300	500
Prisoners Lake	Kenton	3.8	750		750	750	800		1,000*		500*
Brickyard Pond	Knox	9.5		1,500	1,500		2,000	2,000	2,000	2,000	
Logan Hubble Park Lake	Lincoln	9.2		1,500	1,500	1,500	1,800		2,400*		
Whitehall Park Lake	Madison	6.0	1,500		1,500	1,500	1,825*	1,200	1,860*	1,200	800*
Mike Miller Park Lake	Marshall	3.9	750		750	750	800		800		
Maysville-Mason County Rec Park Lake	Mason	11.6		1,500	1,500		1,150		1,440*		
Lake Montgomery	McCracken	5.5	1,500		1,500	1,500	1,100	1,100	2,540*	1,100	
Carlson Lake (Ft. Knox)	Meade	14.0					1,400	1,400	1,400		
Easy Walker Park Pond	Montgomery	1.6		500	500	500	456*	600*	400	400	1,000
Bloomfield Park Lake	Nelson	2.4		500	500	500	972*		720*		
Lusby Lake	Scott	2.3		500	500	500	1,140*	500	500	500	
Scott County Park Lake	Scott	2.5		500	500	500	1,100*	500	500	500	
Three Springs Lake	Warren	28.9		1,500	1,500	1,500	1,450	2,000*	2,160*	1,450	

Table 4. Number of surplus channel catfish stocked in Fishing in Neighborhood lakes in October 2021.

Lake	County	Number of catfish stocked
Camp Ernst Lake	Boone	1,260
Lower Sportsman's Lake	Franklin	600
Upper Sportsman's Lake	Franklin	830
Lake Mingo	Jessamine	500
Middleton Mills Long Pond	Kenton	300
Middleton Mills Shelterhouse Pond	Kenton	300
Easy Walker Park Lake	Montgomery	400
Lusby Lake	Scott	500
Scott County Park Lake	Scott	500

Table 5. Total number and weight of fish stocked in the FINs lakes in 2021-22.

	Fish species	Number of fish stocked	Number of pounds
44 FINs lakes	Catfish	153,443	134,184
	Rainbow trout	120,750	51,923
	Hybrid sunfish	6,900	2,302

Section II: Advertisement for the FINs Program

FINDINGS

Advertising and marketing efforts were employed in a continuing attempt to raise awareness of the Fishing in Neighborhoods (FINs) program, increase participation, and recruit new anglers. Facebook and Twitter notifications were posted around stocking dates. District fisheries biologists also mentioned the FINs program and stocking schedules in their weekly fishing reports. Several local newspapers and news stations reached out when fish were stocked, so they could help promote and make the public aware of our efforts. All lake owners were notified prior to fish being stocked so they could contact their followers via social media.

An 8.5x11 in flyer was updated by Kentucky Department of Fish and Wildlife Resources' (KDFWR) graphic arts team (Figure 1). The flyer was distributed at boat shows and the state fair. Additionally, a FINs banner was displayed at the KDFWR booth at these shows (Figure 2). A one-page advertisement for the FINs program appeared in the 2021-22 Kentucky Fishing and Boating Guide. Additionally, a one-page stocking table appeared in the 2021 and 2022 Kentucky Afield calendars (Figure 3). Care was taken to keep the FINs graphics and message consistent across various media outlets.

The FINs website was routinely updated to convey the latest stocking information and list of lakes enrolled in the program. The website also features detailed maps of lakes enrolled in the program, fish stocking dates and quantities, regulations, basics of how to fish, and a link to purchase a license.

All lakes enrolled in the FINs program have a memorandum of agreement (MOA) giving KDFWR the authority to manage fish populations and set standardized regulations. The standard set of regulations at the lakes is four catfish, five rainbow trout, 15 bluegill or other sunfish, and one largemouth bass over 15.0 in. Metal 4 ft x 4 ft regulation signs and smaller yellow plastic regulation signs are posted around the lakes. A QR code sticker was affixed to all the signs in 2021 that directed anglers to the online Fishing and Boating Guide in English or Spanish. Stocking dates and fish quantities were emailed to the conservation officers in advance of the stockings for enforcement purposes. All lake owners enrolled in the FINs program agree to assist through maintaining access to the fishing areas including: trash pick-up, mowing, cleaning restrooms, and assisting with fishing events.

Information kiosks are installed at 25 of the 45 lakes to inform the public of the FINs program and make anglers and park-goers aware of KDFWR's role in fish management and stocking. The kiosk posters are specific to each lake and updated annually. Information in the kiosk included the FINs logo, mission statement, fish stocking dates and quantities, license requirements, fishing regulations, fish identification, poacher hotline, no littering graphic, brief overview of fishery and past sampling, basic knot tying and the location of a rod loaner program if present. Some of the kiosk posters were laminated in 2021 which helped prevent water damage from leaking kiosks and prolong the life of the posters.



GOOD FISHING. CLOSE TO HOME.



STOCKED LAKES

COUNTY	LAKE
Anderson.....	Anderson County Community Park Lake
Boone.....	Camp Ernst Lake
Boyle.....	Millennium Park Pond
Campbell.....	Alexandria Community Park Lake
	Robert J. Barth Lake
	Southgate Lake
Daviess.....	Panther Creek Park Lake
	Waymond Morris Park Lake
	Yellow Creek Park Lake
Fayette.....	Kentucky Horse Park Rolex Lake
	Jacobson Park Lake
Fleming.....	Flemingsburg Old Reservoir
Franklin.....	Lower Sportsman's Lake
	Upper Sportsman's Lake
Grant.....	Lake Pollywog
	Leary Lake
Graves.....	Kess Creek Park Lake
Grayson.....	James D. Beville Park Lake
Harlan.....	Kingdom Come State Park Lake
Hickman.....	Rotary Park Lake
Hopkins.....	Madisonville City Park Lake South
Jefferson.....	Cherokee Park Lake
	Fisherman's Park Lake #3
	Fisherman's Park Lake #4
	Tom Wallace Park Lake
	Waverly Park Lake
	William F. Miles Angler Lake
	William F. Miles Green Heron Lake
Jessamine.....	Lake Mingo
	Southland Church Lake
Kenton.....	Middleton Mills Long Pond
	Middleton Mills Shelterhouse Pond
	Prisoners Lake
Knox.....	Brickyard Pond
Lincoln.....	Logan Hubble Park Lake
Madison.....	Whitehall Park Lake
Marshall.....	Mike Miller Park Lake
Mason.....	Maysville-Mason County Recreation Park Lake
McCracken.....	Lake Montgomery
Meade.....	Carlson Lake (Fort Knox)
Montgomery.....	Easy Walker Park Pond
Nelson.....	Bloomfield Park Lake
Scott.....	Lusby Lake
	Scott County Park Lake
Warren.....	Three Springs Lake

STOCKED FISH

FISH	TIME
Trout.....	October - March
Catfish.....	March - June

Buy a Fishing License today to support the FINs program!

Check our website fw.ky.gov for stocking dates and regulations or call 1-800-858-1549 for updates.





Figure 1. Flyer used to advertise the Fishing in Neighborhoods program in 2021-22.



Figure 2. Banner used to advertise the Fishing in the Neighborhoods program in 2021-22.

FINs LAKES 2022 STOCKINGS

Fishing in Neighborhoods (FINs)

ANOTHER LAKE HAS joined the popular Fishing in Neighborhoods (FINs) program offered by the Kentucky Department of Fish and Wildlife Resources.

The Robert J. Barth Lake in Cold Spring received its first stocking of 750 rainbow trout in November 2021. As part of the FINs program, this 3.7-acre lake in Campbell County will receive regular stockings of trout when the weather is cold and channel catfishing when the weather warms.

Mayor David "Angelo" Penque officially opened the lake to the public in May 2020.

Barth Lake joins 44 other FINs lakes found in 28 counties throughout Kentucky. The FINs program caters to families who enjoy spending time at parks and doing some fishing with a minimal investment in equipment.

The program stocks catfish and trout in spring and fall. Go online to fw.ky.gov for maps and detailed stocking information about all the lakes in the FINs program – and find a place to fish closer to your home.

FINs lakes hold bountiful populations of largemouth bass and sunfish as well. These lakes have tighter creel limits than found statewide due to their heavy fishing pressure. Daily limits are five trout, one bass, four catfish and 15 bluegill/sunfish. ■

LAKE	COUNTY	TROUT				CATFISH			
		Feb.	Mar.	Oct.	Nov.	Mar.	Apr.	May	June
Anderson County Community Park Lake	Anderson	500	500		500	200	200	200	200
Camp Ernst Lake	Boone	1,500	1,500		1,500	1,250	1,250	1,250	1,250
Millennium Park Pond	Boyle	500	500		500	400	400	400	400
Alexandria Community Park Lake	Campbell	1,500	1,500		1,500	1,400	1,400	1,400	1,400
Robert J. Barth Park Lake	Campbell	750	750		750	700	700	700	700
Southgate Lake	Campbell	500	500		500		400		400
Panther Creek Park Lake	Daviess	750	750	750		800	800	800	800
Waymond Morris Park Lake	Daviess	1,500		1,500		1,000	1,000	1,000	1,000
Yellow Creek Park Lake	Daviess	750	750	750		600	600	600	600
Jacobson Park Lake	Fayette	3,000	3,000	3,000		2,300	2,300	2,300	2,300
Kentucky Horse Park Rolex Lake	Fayette	1,500			1,500		1,100		1,100
Flemingsburg Old Reservoir	Fleming	1,500			1,500		1,100		1,100
Lower Sportsman's Lake	Franklin	500	500	500		600	600	600	600
Upper Sportsman's Lake	Franklin	1,500	1,500	1,500		1,200	1,200	1,200	1,200
Lake Pollywog	Grant	750	750		750		700		700
Leary Lake	Grant	1,500	1,500		1,500		900		900
Kess Creek Park Lake	Graves	500	500	500		400	400	400	400
James D. Beville Park Lake	Grayson	750	750	750		600	600	600	600
Kingdom Come State Park Lake	Harlan	500	500	500			500		500
Rotary Park Lake	Hickman	500	500	500		200	200	200	200
Madisonville City Park Lake South	Hopkins	1,500	1,500	1,500			1,250		1,250
Cherokee Park Lake	Jefferson	750	750	750			800		800
Fisherman's Park Lake #3	Jefferson	500	500	500			400		400
Fisherman's Park Lake #4	Jefferson	500	500	500			400		400
Tom Wallace Park Lake	Jefferson	1,500	1,500	1,500		1,000	1,000	1,000	1,000
Waverly Park Lake	Jefferson	1,500	1,500	1,500		900	900	900	900
William F. Miles Angler Lake	Jefferson	750	750	750		700	700	700	700
William F. Miles Green Heron Lake	Jefferson	500	500	500		200	200	200	200
Lake Mingo	Jessamine	500	500	500		500	500	500	500
Southland Church Lake	Jessamine	500	500	500		500	500	500	500
Middleton Mills Long Pond	Kenton	500	500	500		300	300	300	300
Middleton Mills Shelterhouse Pond	Kenton	500	500	500		300	300	300	300
Prisoners Lake	Kenton	750	750	750			800		800
Brickyard Pond	Knox	1,500			1,500	2,000	2,000	2,000	2,000
Logan Hubble Park Lake	Lincoln	1,500	1,500		1,500		1,800		1,800
Whitehall Park Lake	Madison	1,500	1,500	1,500		1,200	1,200	1,200	1,200
Mike Miller Park Lake	Marshall	750	750	750			800		800
Maysville-Mason County Rec. Park Lake	Mason	1,500			1,500		1,150		1,150
Lake Montgomery	McCracken	1,500	1,500	1,500		1,100	1,100	1,100	1,100
Carlson Lake (Ft. Knox)	Meade						1,400		1,400
Easy Walker Park Pond	Montgomery	500	500		500	400	400	400	400
Bloomfield Park Lake	Nelson	500	500		500		500		500
Lusby Lake	Scott	500	500		500	500	500	500	500
Scott County Park Lake	Scott	500	500		500	500	500	500	500
Three Springs Lake	Warren	1,500	1,500		1,500	1,450	1,450	1,450	1,450

Figure 3. Stocking table advertising Fishing in Neighborhoods program that appeared in 2022 Kentucky Afield calendar.

Section III: Fish Sampling

FINDINGS

Fish sampling was completed at 26 Fishing in Neighborhoods (FINs) lakes in May 2021. Samples were conducted with 10-min electrofishing runs using 60-pps direct current. All species that surfaced during the runs were netted and measured to the nearest 0.1 in with the exception of gizzard shad, common carp, grass carp and rainbow trout. Multiple runs were conducted at most FINs lakes to allow measures of variability, but was not possible at some smaller lakes. Sampling conditions by waterbody and date are noted in Table 1. A proportional stock density (PSD) index (Figure 1) was used to determine balance or lack thereof of sunfish and largemouth bass populations. The PSD index is calculated as the percentage of fish of a quality size (total length) that is longer than a minimum stock size. Minimum stock and quality sizes (20 – 26% and 36 – 41% of world record length, respectively) are defined for: largemouth bass (8 and 12 in); bluegill (3 and 6 in); and redear sunfish (4 and 7 in). Where bluegill and redear sunfish populations were both present within a lake the sunfish PSD value was weighted according to relative abundance of each species. Sequential sampling methods were used to determine when a reliable PSD value (90% confidence) was within a defined interval (Weithman et al. 1980). If the sample size was deficient to classify the fish population, the deficiency was noted with a superscript.

Anderson County Community Park Lake (Anderson County)

Anderson County Community Park Lake (1.0 acre) had gizzard shad present prior to a successful gizzard shad eradication conducted in January 2013. The size structure of largemouth bass and bluegill has noticeably shifted since the shad removal. No largemouth bass ≥ 15 in were collected in 2021 (Table 2); however, bluegill ≥ 6 have increased since the shad removal (Table 3). The number of bluegill sampled in the 6.0 – 7.9 in length group (143.7 fish/hr) was nearly triple the long-term mean (50.5 fish/hr). The low number of bluegill sampled in 2015 and 2019 may be abnormalities as bluegill numbers rebounded in 2017 and 2021, with fish present in all length groups. Redear sunfish were stocked in the fall of 2018 to establish a population, with good numbers of large redear sunfish ≥ 6 in sampled in 2019. The number of redear sampled in 2021 was half of that sampled in 2019. It is yet to be determined if this redear sunfish stocking will create an abundant self-sustaining population or simply a short-term boost to sunfish numbers and size structure. The 2021 catch rate for largemouth bass (227.5 fish/hr) was slightly lower than the long-term mean (280.6 fish/hr); with bass in the 8.0 – 11.9 and 12.0 – 14.9 in length groups above the long-term means (Table 4). The 2017, 2019 and 2021 samples were devoid of any bass in the ≥ 15.0 in length group. The catch rate for bass in the ≥ 15 in length group has plummeted after the shad removal. The PSD index clearly depicts the shift from a fishery with few large sunfish and too many big bass with low recruitment prior to the shad removal in 2013 to a more balanced fishery following the shad removal (Figure 2).

Camp Ernst Lake (Boone County)

The catch rate for largemouth bass was high in 2021, with fish up to the 20 in class sampled at Camp Ernst Lake (25.0 acres; Table 5). The catch rate for bluegill has been variable since sampling began in 2011 (Table 6). The 2021 sample was very similar to the 2013, 2015 and 2019 samples in overall bluegill catch rates, but not in size distribution. The highest proportion of bluegill sampled in 2021 were in the 6.0 – 7.9 in length group. In the 2021 sample, there was a substantial number of bluegill in the ≥ 8.0 in group, with 2011 being the only other time any fish were observed in that length group. Redear sunfish were stocked in 2018 to establish a population with the 2021 sample revealing a low abundance population with the majority of fish in the ≥ 8.0 in length group. The 2021 catch rate for largemouth bass (515.0 fish/hr) was similar to the 2019 sample (513.0 fish/hr) and well above the long-term average (348.4 fish/hr; Table 7). This was strongly influenced by an increased catch rate of 8.0 – 11.9 in bass, which was over double the long-term average. The catch rate for bass in the 12.0 – 14.9 and ≥ 15.0 in length groups were both well below the long-term means. In 2016, 125 largemouth bass (8 – 15 in) were removed from Camp Ernst Lake and stocked in surrounding FINs lakes that had poor bass populations. Additional bass ≤ 12 in should be removed to increase growth rates of remaining bass as the lake is skewing towards bass stunted in the 2019 and 2021 samples (Figure 3).

Millennium Park Pond (Boyle County)

Millennium Park Pond (2.2 acres) had bluegill up to the 8 in class, redear sunfish up to the 10 in class and largemouth bass up to the 20 in class sampled in 2021 (Table 8). Bluegill in the 6.0 – 7.9 in length group still made up the highest proportion of the catch in 2021 (Table 9). The 2021 overall catch rate (245.5 fish/hr) was well below the long-term mean (946.1 fish/hr). The vast majority of redear sunfish sampled in 2021 were in the ≥ 8.0 in length group. Overall, the catch rate for bluegill has decreased in recent years, while the catch rate for largemouth bass has remained stable (Table 10). There was an increase in the catch rate of bass in the ≥ 15.0 in length group in 2021, which was expected after an increased catch rate of 12.0 – 14.9 in bass in 2019. Largemouth bass were noticeably absent in the < 8.0 in length group in 2019 and 2021, possibly indicating a couple failed year classes. The PSD index for 2021 indicates the fishery has large bass and sunfish present, but low recruitment (Figure 4). The PSD index has bounced around in recent years as the fishery has undergone a dramatic shift in the size structure of bass and sunfish, with 2021 being a highpoint.

Robert J. Barth Park Lake (Campbell County)

The catch rate and size structure of bluegill was poor at Robert J. Barth Park Lake (3.7 acres) with bluegill up to the 6 in class sampled in 2021 (Table 11). Bluegill in the 3.0 – 5.9 in length group made up the majority of the catch (Table 12). Fingerling redear sunfish were stocked in fall 2021 to bolster the sunfish population and add additional forage to the lake. The largemouth bass sample consisted primarily of fish in the 8.0 – 11.9 in length group, with the 12 in class the maximum size observed (Table 13). The PSD index indicated an overfished pond with few adult fish available (Figure 5). The bass appeared skinny and stunted, with lack of forage likely limiting growth. A total of 71 largemouth bass in the 5 – 12 in range were removed, along with 17 common carp. We hope to improve the size structure of the remaining bass by reducing competition from crowded bass and removing non-native common carp. It also appeared aquashade was used, likely hindering lake productivity. The standard FINs creel and length limits went into effect in fall 2021, with fish stockings beginning at that time.

Southgate Lake (Campbell County)

The catch rate for bluegill was moderate at Southgate Lake (1.8 acres) in 2021, with fish up to the 6 in class sampled (Table 14). Redear sunfish were sampled in the 3 – 8 in classes after a 2018 stocking to establish a population. A successful gizzard shad eradication was conducted with a light dose of rotenone during January 2013. Bluegill in the 3.0 – 5.9 in length group made up the majority of the catch in 2021, whereas fish in the 6.0 – 7.9 in length group has made up the majority of the catch in the previous two samples (Table 15). Overall, the bluegill catch rate in 2021 (311.4 fish/hr) was slightly below the long-term average (349.0 fish/hr). Bass were observed up to the 15 in class; however, larger bass in the ≥ 15.0 in length group were below the long-term average (Table 16). The overall bass catch rate in 2021 (131.7 fish/hr) remained stable and was in line with the long-term mean (132.6 fish/hr). Largemouth bass catch rates were expected to increase after the gizzard shad removal; however, the catch rate has remained moderately low, with the size structure of bass shifting towards smaller fish in recent years. The shift in the fishery can be clearly observed in the PSD index from a lake with large bass and few large sunfish prior to the shad removal to a lake with large sunfish and few large bass in recent years (Figure 5). The 2021 PSD index value was near a balanced fishery; however, overall numbers of fish sampled was relatively low.

Jacobson Park Lake (Fayette County)

Jacobson Park Lake (46.3 acres) exhibits a crowded bluegill population with stunted growth (Table 17). The bluegill catch rate in 2021 (574.9 fish/hr) was similar to the 2019 sample (562.9 fish/hr), but slightly below the long-term average (674.0 fish/hr), with the vast majority of bluegill sampled in the 3.0 – 5.9 in length group (Table 18). The 2021 largemouth bass catch rate (89.8 fish/hr) was slightly higher than the long-term average (73.9 fish/hr; Table 19). The catch rate for largemouth bass has historically been low at Jacobson Park Lake, with bass distributed through all length groups. The PSD index has remained stable, indicating a lake with few large sunfish, and large bass with low recruitment (Figure 7). This is

typical of a small impoundment with gizzard shad present. Jacobson Park Lake is connected to Lake Ellerslie by a culvert under Richmond Road. The primary use for Lake Ellerslie is a municipal drinking water supply for Lexington. Kentucky Department of Fish and Wildlife does not have an agreement to cooperatively manage the fishery at Lake Ellerslie. Due to the connectivity to Jacobson Park Lake and use as water supply lake, a shad removal is not suitable at this location. Common carp of all sizes are also abundant in the lake. Opportunities to improve the fishery at Jacobson Park Lake are limited.

Flemingsburg Old Reservoir (Fleming County)

Bluegill up to the 8 in class and redear sunfish up to the 10 in class were present in the 2021 sample at Flemingsburg Old Reservoir (10.8 acres; Table 20). The catch rate for largemouth bass was moderate with fish up to the 14 in class sampled. There was a ring of naiad and filamentous around the perimeter of the lake that made sampling difficult in 2021. The size structure of sunfish and bass was vastly different between the 2017 and 2019 samples as indicated in the PSD index, but settled towards a more balanced fishery in the 2021 sample (Figure 8). The overall catch rate of bluegill in 2021 (104.8 fish/hr) was considerably lower than the long-term mean (252.5 fish/hr), with the majority of bluegill in the 3.0 – 5.9 in length group (Table 21). Redear sunfish were stocked in 2018 to establish a population. The catch rate in 2021 was low (27.0 fish/hr), with the majority of fish in the ≥ 8.0 in length group. The majority of bass sampled in 2021 were in the 12.0 – 14.9 in length group, with the overall catch rate similar to the long-term mean (Table 22). This lake was a new addition to the FINs program in 2017. A total of 109 largemouth bass between 10 – 14 in were removed after the 2021 sample and moved to a nearby FINs lake in need of a boost to the bass population. This removal of crowded bass should free up some available forage for remaining bass.

Lake Pollywog (Grant County)

There was a substantial fish kill at Lake Pollywog (3.5 acres) in fall 2018 that greatly impacted the fishery. The bluegill, redear sunfish and largemouth bass catch rates were all moderate in 2021 (Table 23). Redear sunfish were stocked in the fall of 2018 after the fish kill to establish a population, with fish in 3 – 8 in classes sampled in 2021. While the bluegill catch rate was moderate (245.5 fish/hr), it was drastically reduced from the long-term mean (876.8 fish/hr; Table 24). Bluegill were nearly evenly distributed through the < 3.0 , 3.0 – 5.9 and 6.0 – 7.9 in length groups. The majority of redear sunfish sampled were in the ≥ 8.0 in length group. Largemouth bass in the 8.0 – 11.9 in length group made up the highest proportion of the catch in 2021, while the sample was devoid of any fish in the ≥ 15.0 in length group (Table 25). The overall catch rate for bass in 2021 (239.5 fish/hr) was near the long-term mean (255.8 fish/hr). The PSD indicates the fishery shifted after the fall 2018 fish kill with the number of larger bass as well as 3.0 – 5.9 in bluegill reduced (Figure 9). The fishery went from being bass balanced in 2013-17, to skewing towards low numbers of large bass, while the proportion of larger sunfish has continued to increase.

Leary Lake (Grant County)

Bluegill up to the 8 in class and redear sunfish up to the 9 in class were present in the 2021 sample at Leary Lake (4.6 acres; Table 26). The bluegill catch rate in 2021 (449.1 fish/hr) was comparable to the 2019 sample (488.0 fish/hr) and above the long-term average (339.9 fish/hr; Table 27). The majority of the bluegill catch rate was fish in the 6.0 – 7.9 in length group. Redear sunfish were stocked in 2018 to establish a population, with fish in ≥ 8.0 in length group making up the majority of the catch in the 2021 sample. The largemouth bass 2021 overall catch rate (158.7 fish/hr) was comparable to the 2019 sample (122.8 fish/hr), but well below the long-term mean (354.8 fish/hr; Table 28). The PSD index indicates a fishery with abundant large sunfish, with a stunted bass population in 2016 and 2017, shifting to a balanced bass population in 2019-21 (Figure 10).

Kingdom Come State Park Lake (Harlan County)

Kingdom Come State Park Lake (2.5 acres) had redbreast sunfish up to the 8 in class and bluegill sampled up to the 7 in class (Table 29). The lake is located in eastern Kentucky and has low fertility

compared to many of the other lakes in the FINs program. The lake was fertilized in the spring from 2017-21 to increase productivity. Bluegill were most abundant in the 6.0 – 7.9 in length group in 2021 (Table 30). While bluegill numbers were low in 2021, the catch rate (80.8 fish/hr) was still higher than the long-term mean (50.3 fish/hr). The majority of the largemouth bass sampled were in the 8.0 – 11.9 in length group, which is consistent with past samples (Table 31). The 2021 total catch for bass (167.7 fish/hr) was below the long-term mean (228.1 fish/hr). The bass population continues to be crowded with limited forage. Largemouth bass ≥ 20 in are surveyed most years that pass through the growth bottleneck and are able to reach a large size. The PSD index indicates a stunted bass population with a low sample size for bluegill that bounces around from year to year, but trends towards being sunfish balanced (Figure 11). The sunfish PSD in 2021 was the highest observed since sampling began in 2010.

Cherokee Park Lake (Jefferson County)

Bluegill up to the 7 in class and redear sunfish up to the 9 in class were present in the 2021 sample at Cherokee Park Lake (4.2 acres; Table 32). The catch rate of bluegill in 2021 (574.9 fish/hr) was the highest observed since sampling began in 2010 and was well above the long-term average (193.3 fish/hr; Table 33). Bluegill in the 3.0 – 5.9 in length group made up the vast majority of the catch. Redear sunfish catch rates in 2021 (41.9 fish/hr) were slightly above the long-term mean (34.2 fish/hr) with fish in the 3.0 – 5.9 in length group making up the majority of the catch. Largemouth bass numbers have been increasing since the 2015 sample, with the majority of bass sampled in 2021 in the 12.0 – 14.9 in length group (Table 34). There was a significant fish kill during the summer of 2014, with the fishery now looking similar to samples prior to the kill. The PSD index has shifted in recent years, most noticeably in 2015 after the fish kill (Figure 13). The lake has been close to bass balanced from 2011-19; however, the sample size was insufficient in most years to make reliable predictions as catch rates were typically low for both bass and sunfish. The 2021 PSD index indicated few adult sunfish, while large bass were plentiful with low recruitment. Cherokee Park Lake is over 100 years old and in need of renovation to improve the fishery.

Fisherman's Park Lake #3 (Jefferson County)

The catch rate was moderate for both largemouth bass and bluegill in 2021 at Fisherman's Park Lake #3 (1.8 acres; Table 35). The bluegill catch rate in 2021 (245.5 fish/hr) was similar to the long-term average (217.3 fish/hr), with bluegill in the 3.0 – 5.9 in length group making up the majority of the catch, consistent with past samples (Table 36). Redear sunfish were stocked in 2018 to establish a population, with fish in the 4 – 8 in classes sampled in 2021. Largemouth bass in the 8.0 – 11.9 in length group made up the majority of the catch, with a much lower catch rate for bass in the ≤ 8.0 in length group in 2021 (Table 37). The PSD index, while lacking in sample size for largemouth bass in most years tends to point towards a balanced bass population (2010-17) with low numbers of larger sunfish (Figure 13). The 2019 and 2021 largemouth bass PSD values were lower than the 2010-17 samples. Grass carp were stocked in 2010 and 2011 to control curlyleaf pondweed in the lake and are proving successful at containing weed growth to keep bank fishing accessible. The Fisherman's Park lakes are infertile with secchi depths of 6 ft or more and historically yielded low numbers of large fish. Lake fertilization is planned to start in 2022.

Fisherman's Park Lake #4 (Jefferson County)

The catch rate was moderate for largemouth bass at Fisherman's Park Lake #4 (2.4 acres) with bass up to the 19 in class sampled in 2021 (Table 38). The bluegill catch rate in 2021 (407.2 fish/hr) was above the long-term mean (302.8 fish/hr; Table 39.) The increased catch rate for bluegill in the 3.0 – 5.9 in length group in 2021 attributed to the higher overall catch rate, with this length group making up the majority of the catch. Redear sunfish were stocked in 2018 to establish a population, with low numbers of fish sampled in 2019 and 2021. Largemouth bass in the 8.0 – 11.9 and 12.0 – 14.9 in length groups were equally represented in the sample and made up the bulk of the catch (Table 40). The 2021 overall bass catch rate (185.6 fish/hr) was slightly below the long-term mean (224.1 fish/hr). The PSD index for 2021 indicates a bass balanced population with low numbers of large sunfish (Figure 14). Grass carp were stocked in 2010 and 2011 to control curlyleaf pondweed in the lake and are proving successful at containing weed growth to keep bank fishing accessible. The Fisherman's Park lakes are infertile with

secchi depths of 6 ft or more and historically yielded low numbers of large fish. Lake fertilization is planned to start in 2022.

Tom Wallace Park Lake (Jefferson County)

Bluegill up to the 8 in class and largemouth bass up to the 23 in class were sampled in 2021 at Tom Wallace Park Lake (4.8 acres; Table 41). The 2021 bluegill catch rate (86.8 fish/hr), was below the long-term average (116.1 fish/hr), with bluegill in the 3.0 – 5.9 in length group up making up the majority of the catch (Table 42). Redear sunfish were stocked in 2019 to bolster the sunfish population, with the majority of fish sampled in the ≥ 8.0 in length group in 2021. The largemouth bass overall catch rate in 2021 (185.6 fish/hr) was slightly lower than the long-term average (235.2 fish/hr; Table 43). Catch rates for bass in the < 8.0 and $8.0 - 11.9$ in length groups were nearly equal and made up the majority of the catch in the 2021 sample. The PSD clearly shows a fishery with a stunted bass population where a few bass make it through the bottleneck and reach a large size (Figure 15). The sunfish PSD has varied widely over the years with larger sunfish observed some years if the fish were spawning at the time of the sample, but overall numbers consistently low. With secchi readings typically in excess of 5 ft, Tom Wallace Park Lake is infertile. Lake fertilization is planned to start in 2022.

Waverly Park Lake (Jefferson County)

The catch rate for largemouth bass was moderately low at Waverly Park Lake (4.5 acres) with fish up the 19 in class sampled in 2021 (Table 44). The catch rate for bluegill in 2021 (610.8 fish/hr) was nearly double the long-term average (361.3 fish/hr), with fish in the 3.0 – 5.9 in length group making up the vast majority of the sample (Table 45). Redear sunfish were stocked in 2019 to bolster the sunfish population, with the majority of fish sampled in the 6.0 – 7.9 in length group in 2021. The largemouth bass catch rate in 2021 (125.8 fish/hr) was below the long-term mean (195.6 fish/hr), with bass nearly evenly distributed through all length groups (Table 46). This was a shift in the size structure over long-term sampling trends towards larger bass. Gizzard shad were observed for the first time in this lake in fall 2018. The size structure for bluegill and largemouth bass populations has been poor in the past (2011-15), with few adult fish present, indicating possible overfishing (Figure 16). In 2017-19 the sunfish population has shifted to a more balanced population, with the bass PSD improving in 2019 and 2021. However, the recent discovery of gizzard shad further shifted the balance of the fishery towards sunfish crowded and large bass with low recruitment. A gizzard shad eradication was conducted with a light dose of rotenone during February 2022. Grass carp were stocked in 2011 and 2012 to help control aquatic vegetation and keep fishing access open for bank anglers; however, the rotenone treatment likely removed any remaining grass carp. No aquatic vegetation was present at the time of sampling, but vegetation will be monitored to determine if grass carp need to be restocked.

William F. Miles Angler Lake (Jefferson County)

William F. Miles Angler Lake (3.6 acres) had bluegill up to the 7 in class and redear sunfish up to the 8 in class sampled in 2021 (Table 47). Largemouth bass were sampled up to the 21 in class, with several large bass surveyed. Gizzard shad appeared in the lake in the 2013 sample. The catch rate for larger bluegill in the 6.0 – 7.9 in length group in 2021 (12.0 fish/hr) was well below the long-term mean (32.2 fish/hr), while redear in the same 6.0 – 7.9 in length group (68.9 fish/hr) was near the long-term average (64.4 fish/hr; Table 48). Bluegill in the 3.0 – 5.9 in length group made up the vast majority of the catch, while redear sunfish in the 6.0 – 7.9 in length group made up the majority of the redear sunfish sampled. The largemouth bass catch rate in 2021 (119.8 fish/hr) was slightly below the long-term average (139.1 fish/hr; Table 49). The catch rate for largemouth bass in the ≥ 15.0 in length group (32.9 fish/hr) was over double the long-term average (14.1 fish/hr). The PSD index shows a bass fishery that was historically stunted with a few large fish getting through the growth bottleneck, noticeably shifting in recent years towards larger bass with lowered recruitment, likely from the shad introduction (Figure 17). The sunfish population is shifting from relatively balanced in 2013-17 to fewer large sunfish in 2019 and 2021, again likely due to shad being introduced. In observing other lakes where shad have been introduced, the bluegill fishery tends to be more negatively affected compared to the redear sunfish population. A gizzard shad eradication was conducted with a light dose of rotenone during February 2022.

William F. Miles Green Heron Lake (Jefferson County)

The catch rate for bluegill was moderate in 2021 at William F. Miles Green Heron Lake (1.2 acres), with fish up to the 7 in class sampled (Table 50). The overall catch rate for bluegill in 2021 (221.6 fish/hr) was similar to the 2019 sample (263.5 fish/hr) and above the long-term mean (147.7 fish/hr), with fish in the 3.0 – 5.9 in length group making up the majority of the catch (Table 51). The redear sunfish catch rate was low in 2021, with no fish sampled in the 6.0 – 7.9 in length group. Largemouth bass in the 8.0 – 11.9 in length group made up the majority of the catch, similar to past years (Table 52), with bass up to the 19 in class sampled. The PSD index indicates a stunted bass population, with a few fish making it through the growth bottleneck, and the sunfish population nearly balanced in most years (Figure 18).

Middleton Mills Long Pond (Kenton County)

The catch rates were moderate in 2021 for bluegill, redear sunfish and largemouth bass at Middleton Mills Long Pond (1.2 acres; Table 53). Bluegill in the 3.0 – 5.9 in length group made up the majority of the catch, similar to past years (Table 54). The 2021 catch rate of bluegill in the 6.0 – 7.9 in length group (137.7 fish/hr) was well above the long-term average (47.1 fish/hr) and the highest observed since sampling began in 2010. The bluegill catch rate has been highly variable between samples at this pond. Redear sunfish were stocked in 2018 to establish a population, with 7 – 8 in class fish sampled in 2021. The redear sunfish catch was moderate with the majority of the fish in the ≥ 8.0 in length group. The overall bass catch rate in 2021 (221.6 fish/hr) was slightly above the long-term average (190.8 fish/hr; Table 55). The vast majority of the bass catch was < 12 in in 2021, which was similar to the 2020 sample. A total of 50 largemouth bass (4 – 10 in) were stocked in September 2018 to bolster bass numbers and supplement a couple low abundance year classes observed in 2018. The PSD index is also highly variable between years, with the bass sample size lacking some years to make a precise estimate (Figure 19). The 2020 and 2021 samples had a sufficient sample size and indicated low numbers of large bass with plentiful stocker sized fish. However, the sunfish PSD value has been low in every year since sampling began in 2010, with the exception of the 2021 sample where there was considerable number of larger bluegill and redear sunfish sampled.

Middleton Mills Shelterhouse Pond (Kenton County)

Largemouth bass up to the 19 in class were sampled in 2021 at Middleton Mills Shelterhouse Pond (1.2 acres), while the vast majority of sunfish were < 6 in (Table 56). Nearly all bluegill and redear sunfish sampled were small in the < 3.0 and 3.0 – 5.9 in length groups (Table 57). The bluegill and redear sunfish fisheries continue to be poor, while the bass catch rate continues to be low (Table 58). Largemouth bass catch rates have never been high at the lake, but the 2012-21 samples indicate a major issue with recruitment of bass in the lake. Largemouth bass (4 – 14 in) have been stocked nearly annually since 2014 to supplement the population and reduce a crowded sunfish population; however, poor survival of stocked bass or high harvest of bass may be an issue as bass numbers have not increased. Kenton County Parks contracts with ATAC for aquatic vegetation control. After contacting ATAC, we determined they were treating with copper sulfate quite frequently. Cumulatively over many years, the amount of copper sulfate and timing may negatively be affecting the fishery. We plan to increase stocking rates for largemouth bass from 100 fish/acre to 200 fish/acre to see if sunfish numbers can be lowered and increase the chance of seeing some bass recruitment, which has been nearly non-existent in recent samples. The PSD index has consistently indicated a poor sunfish population since sampling began in 2005, while the largemouth bass PSD has bounced around due to low sample sizes for bass every year (Figure 20).

Prisoners Lake (Kenton County)

The catch rate was low for all species sampled in 2021 at Prisoners Lake (3.8 acres; Table 59). Yellow floating heart and filamentous algae were present around the perimeter of the pond in 2021 and made sampling difficult. The bluegill catch rate (29.9 fish/hr) was well below the long-term average (209.6 fish/hr), with no fish sampled in the 6.0 – 7.9 and ≥ 8.0 in length groups (Table 60). Redear sunfish were stocked in 2018 and 2019 to establish a population; however, no redear sunfish were sampled in 2019.

The redear sunfish sampled in 2021 ranged in size from the 3 – 7 in classes. Largemouth bass up to the 20 in class were sampled in 2021, with bass well distributed through all length groups (Table 61). The catch rate for bass in 2021 was similar to the long-term average in most length groups and overall, with the exception of a slight decrease in the catch rate for 8.0 – 11.9 and ≥ 15.0 in length groups. A successful gizzard shad eradication was conducted with a light dose of rotenone during January 2017. The fishery has not positively responded as expected to the shad removal to this point. The PSD index lacks an adequate sample size for assessing bass in all years sampled, with sunfish PSD highly variable between years, but overall tending towards few large sunfish (Figure 21).

Brickyard Pond (Knox County)

A light dose rotenone treatment was conducted at Brickyard Pond (9.5 acres) in January 2017 to remove gizzard shad. However, spring sampling in 2017 revealed this effort was unsuccessful. The lake continues to have a low catch rate for largemouth bass and abundant small sunfish in 2021, both typical for a lake with gizzard shad present (Table 62). The catch rate for bluegill in 2021 (361.3 fish/hr) was below the long-term average (422.9 fish/hr), with bluegill in the 3.0 – 5.9 in length group still making up the vast majority of the catch (Table 63). Redear sunfish catch rates were well below the long-term average in 2021 in all length groups, with the exception of fish in the ≥ 8.0 in length group which were nearly double the long-term mean. Largemouth bass were present in all length groups, with catch rates for bass in the < 8.0 and 8.0 – 11.9 in length groups considerably lower than the long-term mean, while the catch rate of bass in the ≥ 15.0 in length group was the highest observed since sampling began in 2010 (Table 64). To supplement the bass population, 300 largemouth bass (6 – 13 in) were stocked in June 2017. Additional bass may be stocked in the future to further bolster the bass population. The PSD indicated a balanced bass population from 2016-19, shifting towards too many large bass with low recruitment in 2021 (Figure 22). The PSD index has been low for sunfish in all years except 2017 indicating few large sunfish available to anglers.

Logan Hubble Park Lake (Lincoln County)

Logan Hubble Park Lake (9.2 acres) had excellent trophy potential for both largemouth bass and sunfish as indicated by the 2021 sample (Table 65). Largemouth bass up to the 22 in class, bluegill up to the 8 in class and redear sunfish up to the 10 in class were all present in the 2021 sample. The bluegill catch rate in 2021 (112.3 fish/hr) was below the long-term mean (192.1 fish/hr), with fish in the 6.0 – 7.9 in length group making up the majority of the catch (Table 66). The majority of the redear sunfish catch was fish in the ≥ 8.0 in length group. Largemouth bass were well represented in all length groups, with bass in the 12.0 – 14.9 in length group making up the largest proportion of the catch, similar to the previous three samples (Table 67). The 2021 catch rate (244.0 fish/hr) was slightly above the long-term average (216.0 fish/hr), with the catch rate near or slightly above the long-term mean in all length groups. The PSD index indicates a sunfish and bass population with lots of large fish with low recruitment. The lake was added to the FINs program in January 2017.

Whitehall Park Lake (Madison County)

The catch rate was high for largemouth bass in 2021 at Whitehall Park Lake (6.0 acres), with a low catch rate for bluegill (Table 68). The bluegill catch rate has varied drastically between years, with 2021 being on the low end of the spectrum (32.9 fish/hr), well below the long-term average (260.0 fish/hr; Table 69). Redear sunfish were stocked in the fall of 2018 to establish a population, with fish in the 3 – 10 in classes sampled in 2021. The overall catch rate for redear sunfish was much higher in 2021 (290.4 fish/hr) compared to the 2019 sample (59.9 fish/hr), with fish abundant in both the 3.0 – 5.9 and 6.0 – 7.9 in length groups. The majority of bass sampled in 2021 were in the 8.0 – 11.9 in length group (365.3 fish/hr) which was more than double the long-term average (160.2 fish/hr; Table 70). The overall catch rate in 2021 for largemouth bass (643.7 fish/hr) was above the long-term average (477.5 fish/hr). The PSD index varies widely between sampling years (Figure 24). Currently the lake is sunfish balanced after the introduction of redear sunfish, while there are few large bass available to anglers. In June 2019, 100 largemouth bass (4 – 10 in) were removed from Whitehall Park Lake and stocked in another FINs lake. An additional 210 bass (4 – 12 in) were removed after the 2021 sample, with additional bass removals in

the future likely benefiting the fishery. Grass carp have been stocked in recent years to control aquatic vegetation and keep bank fishing access open. Lake fertilization is planned to start in 2022 to increase lake productivity.

Maysville-Mason County Recreation Park Lake (Mason County)

Maysville-Mason County Recreation Park Lake (11.6 acres) had gizzard shad prior to a successful shad eradication conducted in February 2017. The 2021 bluegill catch rate was high, while the largemouth bass catch rate was moderate (Table 71). The 2021 bluegill catch rate (515.0 fish/hr) was slightly below the long-term average (622.2 fish/hr; Table 72). Bluegill in the 3.0 – 5.9 in length group continued to make up the vast majority of the catch. The rotenone treatment in 2017 resulted in some incidental non-target fish mortality, resulting in the lowered 2017 bluegill catch rate. Redear sunfish were stocked in the fall of 2018 to establish a population, with low numbers of fish in the 3 – 8 in classes sampled in 2021. The largemouth bass catch rate in 2021 (143.7 fish/hr) was slightly above the long-term average (115.4 fish/hr; Table 73). The 2021 bass catch rate was above average in every length group, except fish in the 8.0 – 11.9 in length group. The lake received a stocking of 400 largemouth bass (5 in) in October 2015. However, these fish failed to show up in subsequent sampling efforts. Another 425 largemouth bass (4 – 10 in) were stocked in March 2018 to bolster the bass population and in hopes of curtailing sunfish numbers. These fish did show up in the 2019 and 2021 samples. An additional 150 (4 – 14 in) bass were stocked after the 2021 sample. The PSD index indicates the bass population has lots of large fish in 2021 with low recruitment (Figure 25). The bass population has bounced around from this category to being bass balanced. Hopefully, with the increase in bass numbers and size structure, improvements to the sunfish size structure will be forthcoming. However, the lake continues to have low numbers of large sunfish.

Carlson Lake (Fort Knox; Meade County)

The catch rates for bluegill, redear sunfish and largemouth bass were moderate in 2021 at Carlson Lake (Fort Knox 14.0 acres; Table 74). Bluegill were present up to the 8 in class and redear up to the 9 in class. The bluegill catch rate consisted predominantly of fish in the 3.0 – 5.9 in length group (Table 75). The catch rate for redear sunfish in 2021 was near the long-term mean for all length groups, with good distribution through all length groups. Largemouth bass in the 8.0 – 11.9 in length group made up the majority of the catch, with the 2021 overall catch rate (247.5 fish/hr), near the long-term mean (266.8 fish/hr; Table 76). The PSD index indicates a balanced sunfish population from 2013-21, with the bass population being nearly balanced from 2015-19 and bass stunted in 2011-13 and 2021 (Figure 26). The bass population would benefit from removing crowded fish in the 8 – 12 in classes. Grass carp were stocked in 2014 to control aquatic vegetation and keep bank fishing access open. The lake was clear of vegetation in 2021.

Easy Walker Park Pond (Montgomery County)

In late August 2019, a near complete fish kill occurred at Easy Walker Park Pond (1.6 acres), due to low oxygen after a lake turnover. Adult bluegill, redear sunfish and bass were restocked in October 2019 to restore a fish population. The catch rate for bluegill was low in the 2021 sample, while the catch rate for largemouth bass and redear sunfish was high (Table 77). The 2021 bluegill catch rate (107.8 fish/hr) was greatly reduced from the long-term mean (269.5 fish/hr; Table 78). The 2021 redear sunfish catch rate (407.2 fish/hr) was high and well above the numbers sampled in 2019 (89.8 fish/hr). Redear sunfish in the 6.0 – 7.9 in length group made up the vast majority of the catch in the 2021 sample. The 2021 largemouth bass catch rate (437.1 fish/hr) was high and above the long-term average (320.4 fish/hr), with bass in the < 8.0 in length group making up the majority of the catch (Table 79). A total of 40 largemouth bass in the 4 – 12 in classes were removed after the 2021 sample after no small sunfish were observed in 2021. The PSD index in 2021 indicates a bass population with few large fish, while the sunfish population has abundant large fish with low recruitment (Figure 27). The PSD index will likely shift as the fish population becomes reestablished in the coming years.

TANDEM HOOP NET SAMPLING

Tandem hoop net sampling for channel catfish and channel/blue hybrid catfish was conducted at 17 FINs lakes in October 2021. Tandem hoop net sets consisted of three nets per set, each 11 ft long with one-inch bar mesh and seven fiberglass hoops with the throats constricted. Three tandem sets per lake were soaked for 72-hr before checking. Each net was baited with 1/3 of a commercially prepared cheese log (about 2-lbs per net) from The Fish Net Company or 1-bar Zote soap (0.5 lb). Care was taken not to set nets below the thermocline. Catfish were measured to the nearest 0.1 in, and weighed to the nearest 0.01 pound. Relative weight (W_r) was used to determine condition of catfish at each lake. However, differentiating between channel catfish and channel/blue hybrid catfish was difficult and time consuming in the field. Therefore, channel catfish and the hybrid catfish were grouped together for analysis and the channel catfish relative weight equation was used.

Millennium Park Lake (Boyle County)

The catch rate was low for channel/hybrid catfish at Millennium Park Lake (2.2 acres) with only 30 catfish sampled in 2021 (10.0 fish/set; Table 80). The 2021 catch rate was drastically reduced from the 2018 catch rate of 105.7 fish/set, but similar to the 2012 and 2015 samples (13.7 and 3.7 fish/set respectively). The size structure of catfish netted in 2021 was also very different compared to the 2018 sample with fewer large catfish sampled in 2021. In 2018, 29% of the catch was catfish ≥ 18 in, whereas in 2021 that was only one fish or 3% of the catch. Catfish in the 11.0 – 15.9 in length group made up the vast majority of the catch in 2021 and had a relative weight of 94, while catfish in the 16.0 – 23.9 in length group had an exceptional relative weight of 114 (Table 81). The overall relative weight of 96 indicated catfish were in good condition. Relative weights for catfish were improved in all length groups compared to the 2018 sample. Millennium Park Lake is a primary FINs lake and receives 1,600 catfish annually, with an additional 327 surplus catfish stocked in 2021.

Panther Creek Park Lake (Daviess County)

The catfish catch rate was low in 2021 at Panther Creek Park Lake (3.8 acres) with 34 catfish sampled (11.3 fish/set), ranging in size from the 11 – 19 in classes (Table 82). The 2021 catch rate was between the high of 32.7 fish/set sampled in 2019 and the low of 4.3 fish/set in 2016. Catfish in the 11.0 – 15.9 in length group made up the majority of the catch in 2021, with a relative weight of 83 (Table 83). The relative weight of catfish in the 16.0 – 23.9 in length group was slightly higher at 86. The relative weights had been consistent from 2013-19, ranging from the low 90's to low 100's for all length groups. However, the relative weights were considerably lower in 2021. Panther Creek Park Lake is a primary FINs lake and receives 3,200 catfish annually, but received an additional 1,000 surplus catfish in 2021. These surplus catfish didn't increase catch rates in the 2021 sample but may have negatively impacted catfish condition. A gizzard shad eradication was conducted with a light dose of rotenone during February 2022.

Yellow Creek Park Lake (Daviess County)

The catch rate of channel/hybrid catfish at Yellow Creek Park Lake (3.1 acres) was moderate in 2021 (57.3 fish/set; Table 84). The catfish catch rate in 2021 was nearly identical to the 2013 catch rate of 61.0 fish/set, and considerably higher than the 4.7 fish/set sampled in 2016. The length distribution of catfish sampled has been consistent since sampling began in 2013. Relative weights were only 81 for catfish in the 11.0 – 15.9 and 16.0 – 23.9 in length groups, indicating catfish in poor condition (Table 85). Catfish in the 7.0 – 10.9 in length group had a slightly higher relative weight of 89. The relative weights were considerably lower in 2021 for all length groups compared to past years and should be closely monitored. Yellow Creek is a primary FINs lake and is stocked with 2,400 catfish annually, with an additional 600 surplus catfish stocked in 2021. These surplus catfish didn't increase catch rates considerably in the 2021 sample but may have negatively impacted catfish condition.

Kentucky Horse Park Rolex Lake (Fayette County)

The catch rate of catfish has continued to decline at Kentucky Horse Park Rolex Lake (5.6 acres) but is still high with 114.0 fish/set sampled in 2021 (Table 86). A total of 800 (8 – 11 in) catfish were removed in November 2017 after the sample, another 559 catfish (8 – 12 in) after the 2018 sample and 250 catfish (9 – 14 in) after the 2021 sample. The majority (61%) of catfish sampled in 2021 were small (< 13 in), which has improved from the 82% and 76% of catfish sampled in 2017 and 2018 respectively but is still less than desirable. Catfish stockings at the lake as part of the FINs program began in 2016. Either the park manager had been overstocking the lake for years, or natural reproduction of channel catfish was occurring. The park manager was contacted and questioned about fish stocking history; but did not have any stocking records for the lake and indicated recent turnover with the position. Small catfish are being removed to help improve growth and condition of remaining catfish. Relative weights of catfish in the 11.0 – 15.9 and 16.0 – 23.9 in length groups was 80, indicating limited food availability and catfish in poor condition (Table 87). The relative weights have continued to decline for all length groups since sampling began in 2017. Kentucky Horse Park Rolex Lake was a primary FINs lake receiving 4,400 catfish annually, but was switched to a secondary lake in 2021 and receives 2,200 fish annually.

Flemingsburg Old Reservoir (Fleming County)

The catch rate of channel/hybrid catfish was low at Flemingsburg Old Reservoir (10.8 acres) in 2021 with 23 catfish netted (7.7 fish/set; Table 88). The 2019 sample at the lake only yielded three catfish in the tandem net sets. Catfish sampled in 2021 ranged in size from the 11 – 20 in classes. Catfish in the 11.0 – 15.9 in length group had a relative weight of 94, while catfish in the 16.0 – 23.9 in length group had a relative weight of 90, indicating catfish were in good condition (Table 89). Flemingsburg Old Reservoir was added to the FINs program in 2017 and receives 2,200 catfish annually as a secondary FINs lake, but received an additional 1,436 surplus catfish in 2021. The catch rate, size structure, and relative weights of catfish indicate a population of catfish that appears to be harvested relatively quickly after stocking with no stockpiling occurring.

Lake Pollywog (Grant County)

The catch rate of channel/hybrid catfish at Lake Pollywog (3.5 acres) was moderate with 54.0 fish/set netted in 2021 (Table 90). The 2021 catch rate was the highest observed since sampling began in 2012 with catfish present up to the 20 in class. In 2021, 28% of catfish sampled were < 12 in, compared to 81% in 2012, 54% in 2015 and 6% of catfish sampled in 2018. Catfish in the 7.0 – 10.9 in length group had a relative weight of 81, while catfish in the 11.0 – 15.9 and 16.0 – 23.9 in length groups had relative weights of 78 and 79 respectively (Table 91). The relative weights have continued to decline since 2015 and should be closely monitored as catfish seem to have limited forage and appeared skinny. The lake is still recovering from a substantial fish kill in Fall 2018 after a turnover event. Lake Pollywog is a secondary lake and receives two stockings annually totaling 1,400 catfish, with an additional 1,000 surplus catfish stocked in 2021. These surplus catfish may account for a slight increase in the 2021 catfish catch rate and the reduced relative weights.

Leary Lake (Grant County)

Leary Lake (4.6 acres) was sampled for the first time in 2021 with 59 channel/hybrid catfish netted (19.7 fish/set; Table 92). Catfish ranged in size from the 10 – 21 in classes. Relative weights decreased with fish size, with catfish in the 7.0 – 10.9 in length group having a relative weight of 93, compared to 80 and 75 for catfish in the 11.0 – 15.9 and 16.0 – 23.9 in length groups respectively (Table 93). Relative weights for catfish in the 11.0 – 15.9 and 16.0 – 23.9 in length groups indicate catfish in poor condition. The lake is a secondary FINs lake and receives 1,800 catfish annually, but received an additional 1,000 surplus catfish in 2021. Surplus catfish should not be stocked at this lake until the condition of catfish improves.

James D. Beville Park Lake (Grayson County)

The catch rate of channel/hybrid catfish was considerably higher in 2021 (110.0 fish/set) at James D. Beville Park Lake (3.1 acres) compared to the 2015 and 2019 samples (56.0 and 12.0 fish/set respectively; Table 94). A total of 330 catfish were netted in 2021, ranging in size from the 8 – 23 in classes. Seventy-two percent of the catfish were in the 12 – 16 in class range. The overall relative weight was 78, much lower than relative weights observed in 2015 and 2019 of 88 and 87 respectively (Table 95). Catfish appeared skinny and in poor condition in all length groups. James D. Beville Park Lake is a primary FINs lake and receives 2,400 catfish annually, with an additional 1,000 surplus catfish stocked in 2021. Surplus catfish should not be stocked at this lake until the condition of catfish improves. The stocking rate may also need to be reduced in the short-term. These surplus catfish may account for the increased catfish catch rate in 2021 and the reduced relative weights.

Cherokee Park Lake (Jefferson County)

The catch rate of channel/hybrid catfish at Cherokee Park Lake (4.2 acres) was moderate in 2021 (42.0 fish/set) and much higher than the 2015 and 2018 catch rates (5.3 and 2.7 fish/set respectively) with catfish ranging in size from the 11 – 26 in classes (Table 96). The size structure was excellent with 62% of the catfish netted ≥ 15 in. Relative weights were similar to the 2012 and 2015 samples with an overall relative weight in the high 80's (Table 97). The 2019 survey was a very small sample size for relative weights and appears to be an outlier with relative weights exceptionally high. Cherokee Park Lake is a secondary FINs lake and receives 1,600 catfish annually, but received an additional 400 surplus catfish in 2021.

Tom Wallace Park Lake (Jefferson County)

Catfish ranging in size from the 9 – 19 in classes were sampled at Tom Wallace Park Lake (4.8 acres) in 2021 (Table 98). A total of 94 catfish (31.3 fish/set) were sampled in three tandem net sets in 2021. Relative weights were moderate for catfish in the 11.0 – 15.9 and 16.0 – 23.9 in length groups with both groups having a value of 87, compared to catfish in the 7.0 – 10.9 in length group in excellent condition (101; Table 99). The relative weights in 2021 were comparable to the 2018 sample. The catch rate, size structure, and relative weights of catfish indicate a population of catfish that appears to be harvested relatively quickly after stocking with no stockpiling occurring. Tom Wallace Park Lake is a primary FINs lake and receives four catfish stockings annually, totaling 4,000 catfish, but received an additional 1,260 surplus catfish in 2021.

Waverly Park Lake (Jefferson County)

Waverly Park Lake (4.5 acres) had a slightly higher catch rate in 2021 of 22.7 fish/set, compared to the 2012, 2015 and 2018 samples (11.0, 13.3 and 10.0 fish/set respectively; Table 100). The size structure had shifted back to smaller catfish in 2021 with only 15% of catfish sampled in ≥ 15 compared to 63% of the catch in 2018. Sixty-eight percent of the catfish sampled were < 13 in in 2021. Relative weights decreased with fish size, ranging from 100 for catfish in the 7.0 – 10.9 in length group to 91 for catfish in the 16.0 – 23.9 in length group, indicating fish were in good condition (Table 101). The catch rate, size structure, and relative weights of catfish indicate a population of catfish that appears to be harvested relatively quickly after stocking with no stockpiling occurring. Waverly Park Lake is stocked as a primary FINs lake with 3,600 catfish annually, but received an additional 1,180 surplus catfish in 2021. A gizzard shad eradication was conducted with a light dose of rotenone during February 2022.

Prisoners Lake (Kenton County)

The catch rate of channel/hybrid catfish at Prisoners Lake (3.8 acres) was moderate in 2021 with a total of 165 catfish sampled (55.0 fish/set; Table 102). Catfish netted in 2021 ranged in size from the 7 – 22 in classes. The size structure of catfish in 2021 ran slightly smaller compared to the 2019 sample with 43% of catfish sampled < 13 in in 2021, compared to only 27% in 2019. In the 2013 and 2016 samples 83% and 69% of catfish sampled were < 13 in respectively. Relative weights decreased with fish size, ranging

from 99 for catfish in the 7.0 – 10.9 in length group to 78 for catfish in the 16.0 – 23.9 in length group (Table 103). Relative weights for catfish in the 11.0 – 15.9 and 16.0 – 23.9 in length groups were low and comparable to the 2019 sample. Prisoners Lake is a secondary FINs lake and receives 1,600 catfish annually, with an additional 200 surplus catfish stocked in 2021. Due to the low relative weights of catfish in 2019 and 2021, surplus catfish should not be stocked in this lake until the condition of catfish improves. The stocking rate may also need to be reduced in the short-term as forage appears to be limited.

Logan Hubble Park Lake (Lincoln County)

A total of 121 channel/hybrid catfish were caught in two tandem hoop sets (60.5 fish/set) in 2021 at Logan Hubble Park Lake (9.2 acres; Table 104). One of the net sets was tampered with and did not fish correctly and was excluded from the sample. This catch rate was comparable to the 85.7 fish/set sampled in 2018. Sampled catfish ranged in size from the 11 – 21 in classes. There was an abundance of larger catfish with 84% of the catfish sampled ≥ 13 in, and 48% ≥ 15 in. The relative weight was a marginal 84 for both the 11.0 – 15.9 and 16.0 – 23.9 in length groups which was considerably lower than the 2018 sample (Table 105). Logan Hubble Park Lake is a secondary FINs lakes and receives 3,600 catfish annually, with an additional 600 surplus catfish stocked in 2021.

Maysville-Mason County Recreation Park Lake (Mason County)

A total of 134 channel/hybrid catfish were caught in two tandem hoop sets (67.0 fish/set) in 2021 at Maysville-Mason County Recreation Park Lake (11.6 acres; Table 106). One of the net sets was missing and assumed stolen after a lengthy unsuccessful search. The 2021 catch rate was considerably higher than the 2016 and 2019 samples (3.0 and 9.3 fish/set respectively). Exactly 50% of the catfish netted were in the 12 – 16 in class range. The relative weight was marginal at 86 for catfish in the 11.0 – 15.9 and 16.0 – 23.9 in length groups (Table 107). The overall relative weight of 87 in 2021 was slightly improved from 2016 (81) and 2019 (85). Maysville-Mason County Recreation Park Lake receives 2,300 catfish annually as a secondary FINs lake but received an additional 290 surplus catfish in 2021.

Carlson Lake (Fort Knox; Meade County)

The catch rate of channel/hybrid catfish at Carlson Lake (Fort Knox; 14.0 acres) was high with a total of 412 catfish sampled in 2021 (137.3 fish/set; Table 108). Catfish ranged in size from the 8 – 27 in classes in 2021 with 39% of the fish sampled being < 13 in, identical to the 2018 sample. Relative weights were good for catfish in the ≥ 24.0 in length group (93); marginal for catfish in 7.0 – 11.9 in length group (86); and low for catfish in the 11.0 – 15.9 and 16.0– 23.9 in length groups (81; Table 109). Carlson Lake receives 5,600 catfish annually as a primary FINs lake. However, overall relative weights have continued to decline since sampling began in 2015. The lake was switched to a secondary lake in 2022 to receive 2,800 catfish annually due to high catch rates and low relative weights in the last two samples.

Bloomfield Park Lake (Nelson County)

The catch rate of channel/hybrid catfish at Bloomfield Park Lake (2.4 acres) was moderate (67.3 fish/set) in 2021 and very similar to the 2012 and 2015 samples (59.7 and 64.3 fish/set respectively; Table 110). There was abundant submerged vegetation present in 2018, which likely impacted sampling with only 5.3 fish/set sampled. Nearly 70% of catfish sampled were in the 12 – 16 class range in 2021. The condition of catfish was poor with an overall relative weight of 80 (Table 111). The relative weights of catfish in all length groups in 2021 were the lowest observed since sampling began in 2012. Bloomfield Park Lake is a secondary FINs lake and only receives two stockings of catfish per year totaling 1,000 catfish, but received an additional 692 surplus catfish in 2021. Surplus catfish should not be stocked at this lake until the condition of catfish improve. These surplus catfish didn't increase catch rates considerably in the 2021 sample but may have negatively impacted catfish condition.

Three Springs Lake (Warren County)

The catch rate of channel/hybrid catfish was moderate at Three Springs Lake (28.9 acres) with 38.3 fish/set sampled in 2021 and was very similar to the 40.0 fish/set sampled in 2018 (Table 112). The size structure of catfish was good with 44% of catfish sampled ≥ 15 in and catfish present up to the 29 in class. Catfish in the 11.0 – 15.9 and 16.0 – 23.9 in length groups had marginally low relative weights of 83 and 84 respectively which were both the lowest observed since sampling began in 2011 (Table 113). Conversely, small catfish in the 7.0 – 10.9 in length group and large catfish in the ≥ 24 in length group had relative weights in the 90's (small sample sizes). Three Springs Lake currently receives 5,800 annually as a primary FINs lake, but received an additional 1,260 surplus catfish in 2021. These surplus catfish didn't increase catch rates considerably in the 2021 sample but may have negatively impacted catfish condition.

Table 1. 2021 yearly summary of sampling conditions by waterbody and date.

Waterbody	Date	Time (24-hr)	Weather	Water temp (F)	Water level	Secchi (in)	Lake conditions/pertinent sampling information
Anderson County Community Park Lake	5/2/2021	800	Cloudy	65	Full	48	Some curlyleaf pondweed, subsequently treated with herbicide and grass carp stocked
Millennium Park Pond	5/2/2021	900	Rainy	65	Full	18	Good color, some duckweed starting, subsequently treated with herbicide
Logan Hubble Park Lake	5/2/2021	1000	Cloudy	65	Full	48	Fishery looked great, nice bass, bluegill and redear sunfish
Middleton Mills Long Pond	5/4/2021	1000	Rainy	65	Full	24	Some cattails and black willows limit bank access
Middleton Mills Shelterhouse Pond	5/4/2021	1100	Rainy	67	Full	20	Minimal amount of water primrose and algae present
Robert J. Barth Park Lake	5/4/2021	1300	Cloudy	67	Full	24	Aquashade was used, removed crowded bass (5-12 in, 71) and common carp (17)
Waverly Park Lake	5/5/2021	900	Cloudy	66	Full	18	No vegetation, shad abundant
Tom Wallace Park Lake	5/5/2021	1000	Cloudy	64	Full	24	No vegetation, lake turbid from recent rain
Carlson Lake	5/5/2021	1200	Cloudy	67	Full	36	Lake turbid from recent rain, crowded bass, no sunfish on beds yet
Whitehall Park Lake	5/6/2021	800	Sunny	64	Full	36	Curlyleaf and Illinois pondweed present, but not bad yet, removed 209 crowded bass (4-12 in)
Jacobson Park Lake	5/6/2021	1000	Cloudy	65	Full	15	Turbid, hard to see fish, lots of common carp
Brickyard Pond	5/7/2021	1000	Sunny	66	Full	12	No vegetation, shad and common carp present and abundant, turbid
Kingdom Come State Park Lake	5/7/2021	1200	Sunny	62	Full	72	Very clear, no vegetation, fertilized while there
Leary Lake	5/11/2021	1100	Cloudy	62	Full	48	No duckweed or watermeal, blue-green algae bloom, good sunfish population
William F. Miles Angler Lake	5/12/2021	800	Sunny	61	Full	60	Water willow and filamentous algae present, abundant gizzard shad
William F. Miles Green Heron Lake	5/12/2021	900	Sunny	63	Full	81	Water willow and water crowfoot present limiting bank access
Fisherman's Park Lake #3	5/12/2021	1000	Sunny	64	Full	72	Water willow, cattails and filamentous algae around perimeter, lots of trash
Fisherman's Park Lake #4	5/12/2021	1100	Sunny	64	Full	60	Water willow, cattails and filamentous algae around perimeter, lots of trash
Cherokee Park Lake	5/12/2021	1200	Sunny	66	Full	26	Cattails around perimeter, no submerged vegetation, good color, needs renovation, bass fry observed
Easy Walker Park Pond	5/13/2021	800	Sunny	64	Full	40	No vegetation, good color, lots of bass fry, removed 38 bass (4-12 in), recovering from Fall 2019 fish kill
Flemingsburg Old Reservoir	5/13/2021	1000	Sunny	64	Full	48	Ring of nald and filamentous algae around perimeter of lake, aquashade was used, removed 109 bass (11-14 in)
Maysville-Mason County Rec Park Lake	5/13/2021	1100	Sunny	65	Full	27	No shad present, no vegetation, several common carp observed, stocked 147 bass (4-14 in)
Lake Pollywog	5/14/2021	800	Sunny	64	Full	26	No vegetation, color looked good, recovering from Fall 2018 fish kill
Prisoners Lake	5/14/2021	1000	Sunny	63	Full	30	Yellow floating heart and filamentous algae around perimeter limits bank access and made sampling difficult
Southgate Lake	5/14/2021	1100	Sunny	63	Full	18	Limited curlyleaf pondweed observed, turbid, five common carp removed
Camp Ernst Lake	5/14/2021	1300	Sunny	68	Full	42	No vegetation, several common carp observed, crowded bass, good sunfish
Kentucky Horse Park Rolex Lake	10/7/2021	900	Cloudy	71	Full		No vegetation, still a high abundance of small catfish, bait bags were empty
Maysville-Mason County Rec Park Lake	10/7/2021	1200	Cloudy	73	Full		One net set missing, was set near bank and tampered with, bait bags were empty
Flemingsburg Old Reservoir	10/7/2021	1400	Cloudy	74	Full		No vegetation, lots of turtle bycatch, 25+ white crappie $\geq 12"$, nice redear sunfish $\geq 10"$
Lake Pollywog	10/8/2021	900	Cloudy	72	Full		No vegetation, some decent redear sunfish
Leary Lake	10/8/2021	1000	Cloudy	71	Full		No vegetation, no turtles, nice redear sunfish and bluegill
Prisoners Lake	10/8/2021	1100	Cloudy	72	Full		No vegetation, not much bycatch, few small black crappie
Bloomfield Park Lake	10/14/2021	800	Sunny	72	Full		No vegetation, nice redear sunfish and bluegill
Three Spring Lake	10/14/2021	1100	Sunny	76	Full		No vegetation, stunted small black crappie, good size structure on catfish
Panther Creek Park Lake	10/15/2021	800	Cloudy	75	Full		No vegetation, lots of turtle bycatch, plentiful small white crappie
Yellow Creek Park Lake	10/15/2021	900	Cloudy	75	Full		No vegetation, some decent redear sunfish, lots of nice black crappie 9-10"
James D. Beville Park Lake	10/15/2021	1200	Cloudy	74	Full		No vegetation, water brown tannic color, catfish appeared thin
Cherokee Park Lake	10/21/2021	900	Cloudy	65	Full		No vegetation, some decent bluegill, white crappie 7-10"
Tom Wallace Park Lake	10/21/2021	1000	Cloudy	66	Full		No vegetation, not much bycatch, few nice redear sunfish and bluegill
Waverly Park Lake	10/21/2021	1100	Cloudy	66	Full		No vegetation, stunted small white crappie, small bluegill
Carlson Lake	10/21/2021	1300	Sunny	68	Full		Abundant nald out to 8', abundant catfish appearing thin
Millennium Park Pond	10/22/2021	900	Sunny	66	Full		Some filamentous algae, clear water, really nice redear sunfish, bluegill, and black crappie
Logan Hubble Park Lake	10/22/2021	1000	Sunny	64	Full		No vegetation, caught two otters, 20 turtles, one net set tampered with by angler

Table 2. Length frequency and CPUE (fish/hr) of fish collected in one, 10-min electrofishing run at Anderson County Community Park Lake on 2 May 2021. Standard errors were not calculated because only one sampling run could be completed.

	Inch class																											
Species	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	Total	CPUE	
Bluegill	8	13	25	15	21	3																				85	509.0	
Largemouth bass		1					1	1	12	5	3	11	4													38	227.5	
Channel catfish																			1						1	2	12.0	
Redear sunfish				1	3	4	3	1	1																	13	77.8	

uftg05ac.d21

Table 3. Electrofishing CPUE data (fish/hr) for each length group of bluegill (2010-21) and redear sunfish (2019-21) collected at Anderson County Community Park Lake. Redear sunfish were first stocked in 2018. Standard errors are in parentheses.

	Length group (in)				
Year	< 3.0	3.0 - 5.9	6.0 - 7.9	≥ 8.0	Total
Bluegill					
2010	12.0	191.6	24.0	6.0	
2012	473.1	77.8	12.0		562.9
2013		640.7			640.7
2015	12.0	29.9	12.0		53.9
2017	65.9	287.4	95.8		449.1
2019			65.9		65.9
2021	47.9	317.4	143.7		509.0
Mean	87.3 (65.0)	220.7 (84.0)	50.5 (20.2)	0.9 (0.9)	359.3 (90.8)
Redear					
2019		6.0	137.7	12.0	155.7
2021		6.0	41.9	29.9	77.8
Mean		6.0 (0.0)	89.8 (47.9)	21.0 (9.0)	116.8 (38.9)

uftg05ac.d10, uftg04ac.d12, uftg05ac.d13-d21

Table 4. Electrofishing CPUE data (fish/hr) for each length group of largemouth bass collected at Anderson County Community Park Lake from 2010-21. Standard errors are in parentheses.

Year	Length group (in)				Total
	< 8.0	8.0 - 11.9	12.0 - 14.9	≥ 15.0	
2010	18.0	53.9	47.9	107.8	227.5
2012	131.7	41.9	24.0	53.9	251.5
2013	149.7	41.9	41.9	89.8	323.4
2015	107.8	113.8	71.9	35.9	329.3
2017	125.8	143.7	71.9		341.3
2019	12.0	125.8	125.8		263.5
2021	6.0	113.8	107.8		227.5
Mean	78.7 (24.1)	90.7 (16.3)	70.2 (13.8)	41.1 (17.0)	280.6 (18.7)

uftg05ac.d10, uftg04ac.d12, uftg05ac.d13-d21

Table 5. Length frequency and CPUE (fish/hr) of fish collected in three, 10-min electrofishing runs at Camp Ernst Lake on 14 May 2021.

Species	Inch class																		Total	CPUE	Std. error
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
Bluegill	2	9	11	4	39	26													91	181.6	26.4
Largemouth bass		17	57	21	6	9	60	42	31	10	2	1	1					1	258	515.0	139.8
Channel catfish								1		2	2	2	2	2	4	1		1	17	33.9	10.0
Redear sunfish		2				1	9												12	24.0	18.3
Longear sunfish			1	1															2	4.0	2.0
Warmouth				1															1	2.0	2.0

uftg05ce.d21

Table 6. Electrofishing CPUE data (fish/hr) for each length group of bluegill (2011-21) and redear sunfish (2019-21) collected at Camp Ernst Lake. Redear sunfish were first stocked in 2018. Standard errors are in parentheses.

Year	Length group (in)				Total
	< 3.0	3.0 - 5.9	6.0 - 7.9	≥ 8.0	
Bluegill					
2011	27.9 (14.4)	331.3 (10.6)	155.7 (72.6)	2.0 (2.0)	517.0 (73.0)
2013	8.0 (4.0)	89.8 (27.7)	8.0 (5.3)		105.8 (68.2)
2015	12.0 (0.0)	110.8 (62.9)	6.0 (6.0)		128.4 (68.9)
2017	22.0 (11.1)	289.4 (55.9)	215.6 (44.9)		527.0 (93.6)
2019		55.9 (5.3)	107.8 (27.4)		163.7 (32.1)
2021		43.9 (23.0)	85.8 (20.3)	51.9 (13.1)	181.6 (26.4)
Mean	11.6 (3.9)	156.0 (31.3)	101.8 (23.0)	9.5 (5.3)	299.8 (58.7)
Redear					
2019		10.0 (2.0)	8.0 (2.0)		18.0 (3.5)
2021		4.0 (4.0)		20.0 (14.4)	24.0 (18.3)
Mean		7.0 (2.4)	4.0 (2.0)	10.0 (7.8)	21.0 (8.4)

uftg05ce.d11, uftg04ce.d13, uftg05ce.d15-21

Table 7. Electrofishing CPUE data (fish/hr) for each length group of largemouth bass collected at Camp Ernst Lake from 2011-21. Standard errors are in parentheses.

Year	Length group (in)				Total
	< 8.0	8.0 - 11.9	12.0 - 14.9	≥ 15.0	
2011	97.8 (38.1)	63.9 (12.1)	75.9 (15.6)	22.0 (5.3)	259.5 (39.8)
2013	227.5 (22.7)	107.8 (33.0)	49.9 (14.0)	18.0 (0.0)	403.2 (68.2)
2015	32.9 (3.0)	68.9 (15.0)	83.8 (24.0)		185.6 (41.9)
2017	45.9 (26.0)	61.9 (11.1)	41.9 (0.0)	10.0 (4.0)	159.7 (40.1)
2019	311.4 (12.0)	143.7 (48.8)	37.9 (12.1)	20.0 (2.0)	513.0 (57.5)
2021	201.6 (43.2)	283.4 (91.6)	26.0 (10.6)	4.0 (2.0)	515.0 (139.8)
Mean	159.9 (27.0)	124.7 (25.7)	50.7 (6.6)	13.0 (2.3)	348.4 (44.8)

uftg05ce.d11, uftg04ce.d13, uftg05ce.d15-21

Table 8. Length frequency and CPUE (fish/hr) of fish collected in one, 10-min electrofishing run at Millennium Park Pond on 2 May 2021. Standard errors were not calculated because only one sampling run could be completed.

Species	Inch class																	Total	CPUE
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
Bluegill	11	7	14	6	3													41	245.5
Largemouth bass					1	1	4	2		1	10	8	1	3	1	1	1	34	203.6
Redear sunfish			3	1	4	15	7											30	179.6

uftg05mi.d21

Table 9. Electrofishing CPUE data (fish/hr) for each length group of bluegill and redear sunfish collected at Millennium Park Pond from 2011-21. Standard errors are in parentheses.

	Length group (in)				
Year	< 3.0	3.0 - 5.9	6.0 - 7.9	≥ 8.0	Total
Bluegill					
2011	431.1	1,197.6	95.8		1,724.6
2013	359.3	1,173.7	59.9		1,592.8
2015	12.0	251.5	772.5		1,035.9
2017		604.8	53.9		658.7
2019	6.0	335.3	77.8		419.2
2021		107.8	119.8	18.0	245.5
Mean	134.7 (82.9)	611.8 (193.2)	196.6 (115.6)	3.0 (3.0)	946.1 (250.6)
Redear					
2011		155.7		6.0	161.7
2013		12.0	65.9	6.0	83.8
2015			6.0	35.9	41.9
2017		18.0	83.8	6.0	107.8
2019		6.0	18.0	24.0	47.9
2021			24.0	155.7	179.6
Mean		31.9 (24.9)	32.9 (13.9)	38.9 (23.9)	103.8 (23.4)

uftg05mi.d11-21

Table 10. Electrofishing CPUE data (fish/hr) for each length group of largemouth bass collected at Millennium Park Pond from 2011-21. Standard errors are in parentheses.

Year	Length group (in)				Total
	< 8.0	8.0 - 11.9	12.0 - 14.9	≥ 15.0	
2011	95.8	41.9	29.9	12.0	179.6
2013	95.8	59.9	41.9	6.0	203.6
2015	35.9	89.8	71.9	47.9	245.5
2017	41.9	137.7	18.0	47.9	245.5
2019		95.8	119.8	12.0	227.5
2021		47.9	65.9	89.8	203.6
Mean	44.9 (17.6)	78.8 (14.8)	57.9 (15.0)	35.9 (13.2)	217.6 (10.8)

uftg05mi.d11-d21

Table 11. Length frequency and CPUE (fish/hr) of fish collected in two, 10-min electrofishing runs at Robert J. Barth Park Lake on 4 May 2021.

Species	Inch class												Total	CPUE	Std. error
	2	3	4	5	6	7	8	9	10	11	12				
Bluegill	1	3	10	14	7							35	104.8	62.9	
Largemouth bass				1	5	1	7	28	21	6	2	71	212.6	15.0	
Longear sunfish				1								1	3.0	3.0	
Green sunfish					1							1	3.0	3.0	
White bass											1	1	3.0	3.0	
Yellow bullhead								1				1	3.0	3.0	

uftg05rb.d21

Table 12. Electrofishing CPUE data (fish/hr) for each length group of bluegill collected at Robert J. Barth Park Lake in 2021. Standard errors are in parentheses.

Year	Length group (in)				Total
	< 3.0	3.0 - 5.9	6.0 - 7.9	≥ 8.0	
2021	3.0 (3.0)	80.8 (56.9)	21.0 (3.0)		104.8 (62.9)

uftg05rb.d21

Table 13. Electrofishing CPUE data (fish/hr) for each length group of largemouth bass collected at Robert J. Barth Park Lake in 2021. Standard errors are in parentheses.

Year	Length group (in)				Total
	< 8.0	8.0 - 11.9	12.0 - 14.9	≥ 15.0	
2021	21.0 (3.0)	185.6 (18.0)	6.0 (0.0)		212.6 (15.0)

uftg05rb.d21

Table 14. Length frequency and CPUE (fish/hr) of fish collected in one, 10-min electrofishing run at Southgate Lake on 14 May 2021. Standard errors were not calculated because only one sampling run could be completed.

Species	Inch class																	Total	CPUE
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		
Bluegill	4	15	15	8	10													52	311.4
Largemouth bass	1	1					5	5	1	2	4	1	1	1				22	131.7
Redear sunfish		1			3	3	2											9	53.9
Channel catfish											1				3		2	6	35.9
Brown bullhead												1						1	6.0
Green sunfish	3	4	5	3	1													16	95.8
White crappie			1				2											3	18.0

uftg05sg.d21

Table 15. Electrofishing CPUE data (fish/hr) for each length group of bluegill (2010-21) and redear sunfish (2019-21) collected at Southgate Lake. Redear sunfish were first stocked in 2018. Standard errors are in parentheses.

	Length group (in)				
Year	< 3.0	3.0 - 5.9	6.0 - 7.9	≥ 8.0	Total
Bluegill					
2010		652.7	35.9		688.6
2012	24.0	538.9	12.0		574.9
2013		269.5	47.9		317.4
2015		107.8	29.9		137.7
2017		83.8	215.6		299.4
2019		24.0	89.8		113.8
2021	24.0	227.5	59.9		311.4
Mean	6.8 (4.4)	272.0 (90.3)	70.2 (26.0)		349.0 (80.4)
Redear					
2019		77.8	41.9		119.8
2021		6.0	35.9	12.0	53.9
Mean		41.9 (35.9)	38.9 (3.0)	6.0 (6.0)	86.8 (32.9)
uftg05sg.d10, uftg04sg.d12-d13, uftg05sg.d15-d21					

Table 16. Electrofishing CPUE data (fish/hr) for each length group of largemouth bass collected at Southgate Lake from 2010-21. Standard errors are in parentheses.

Year	Length group (in)				Total
	< 8.0	8.0 - 11.9	12.0 - 14.9	≥ 15.0	
2010	29.9	29.9	53.9	35.9	149.7
2012	71.9	12.0	35.9	12.0	131.7
2013	12.0	53.9	47.9	24.0	137.7
2015		29.9	35.9	12.0	77.8
2017	41.9	47.9	18.0	6.0	113.8
2019	59.9	95.8	24.0	6.0	185.6
2021	12.0	77.8	35.9	6.0	131.7
Mean	32.5 (10.1)	49.6 (11.1)	35.9 (4.7)	14.5 (4.3)	132.6 (12.4)

uftg05sg.d10, uftg04sg.d12-d13, uftg05sg.d15-d21

Table 17. Length frequency and CPUE (fish/hr) of fish collected in four, 10-min electrofishing runs at Jacobson Park Lake on 6 May 2021.

Species	Inch class																		Total	CPUE	Std. error
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19			
Bluegill	19	70	178	109	7	1													384	574.9	147.7
Largemouth bass				3	3	12	4	3	6	6	1	4	8	3	1	4	1	1	60	89.8	45.8
Channel catfish															1	1	1	1	4	6.0	4.2
Brown bullhead							1	2	2	2									7	10.5	6.2
Green sunfish	1	7	3	1															12	18.0	7.3
Redear sunfish				1															1	1.5	1.5
Longear sunfish	9	8	28	2															47	70.4	26.1
Warmouth		1		2	1	1													5	7.5	4.5
White crappie			1					1	1										3	4.5	2.9
Black crappie						1													1	1.5	1.5

uftg05jp.d21

Table 18. Electrofishing CPUE data (fish/hr) for each length group of bluegill collected at Jacobson Park Lake from 2013-21. Standard errors are in parentheses.

Year	Length group (in)				Total
	< 3.0	3.0 - 5.9	6.0 - 7.9	≥ 8.0	
2013	16.8 (6.4)	1,121.0 (213.4)	79.0 (14.8)		1,216.8 (227.5)
2015	2.0 (2.0)	415.2 (205.7)	57.9 (31.4)		475.1 (235.8)
2017	4.0 (4.0)	195.6 (36.6)	12.0 (3.5)		211.6 (42.7)
2019	27.9 (13.1)	499.0 (83.4)	35.9 (9.2)		562.9 (73.6)
2021	28.4 (8.9)	534.4 (133.7)	12.0 (6.5)		574.9 (147.7)
Mean	16.6 (4.0)	615.1 (105.8)	42.3 (9.1)		674.0 (114.1)

uftg05jp.d13-d21

Table 19. Electrofishing CPUE data (fish/hr) for each length group of largemouth bass collected at Jacobson Park Lake from 2001-21. Standard errors are in parentheses.

Year	Length group (in)				Total
	< 8.0	8.0 - 11.9	12.0 - 14.9	≥ 15.0	
2001	14.4 (3.0)	38.4 (6.3)	16.0 (4.6)	17.6 (6.5)	86.4 (17.0)
2003	11.0 (5.5)	24.0 (4.9)	13.0 (5.7)	2.0 (1.2)	50.0 (12.9)
2004	5.0 (3.8)	23.0 (5.8)	17.0 (1.0)	5.0 (3.0)	50.0 (9.6)
2005	21.5 (6.3)	23.0 (5.2)	24.5 (2.9)	18.0 (3.9)	87.0 (5.3)
2006	24.0 (5.9)	21.0 (4.1)	23.0 (10.5)	22.0 (8.4)	90.0 (22.4)
2007	12.0 (0.0)	14.0 (3.5)	13.0 (1.9)	13.0 (4.1)	52.0 (7.5)
2008	13.3 (4.8)	6.7 (2.7)	20.0 (2.3)	16.0 (4.6)	56.0 (4.6)
2009	6.0 (2.6)	14.0 (1.2)	8.0 (1.6)	2.0 (1.2)	30.0 (3.5)
2011	2.7 (1.3)	8.0 (2.3)	5.3 (1.3)	9.3 (3.5)	25.3 (7.1)
2013	15.6 (5.6)	35.9 (6.3)	55.1 (11.4)	27.5 (4.9)	134.1 (14.7)
2015	12.0 (3.5)	10.0 (7.2)	18.0 (6.0)	22.0 (7.2)	61.9 (19.0)
2017	6.0 (3.5)	35.9 (6.0)	18.0 (6.0)	35.9 (15.1)	95.8 (21.6)
2019	16.0 (2.0)	27.9 (7.2)	22.0 (10.0)	33.9 (13.1)	99.8 (31.0)
2021	27.0 (11.1)	28.4 (14.5)	19.5 (13.7)	15.0 (9.3)	89.8 (45.8)
Mean	12.8 (1.5)	23.9 (2.1)	20.2 (2.4)	16.9 (2.1)	73.9 (6.2)

bbrpsjac.d01, cfdpsjac.d03-d11, uftg05jp.d13-d21

Table 20. Length frequency and CPUE (fish/hr) of fish collected in two, 10-min electrofishing runs at Flemingsburg Old Reservoir on 13 May 2021.

	Inch class																Std.
Species	2	3	4	5	6	7	8	9	10	11	12	13	14	Total	CPUE	error	
Bluegill	1		12	11	7	2	2							35	104.8	27.0	
Largemouth bass							1	5	9	20	18	12	9	74	221.6	65.9	
Redear sunfish					1	2			6					9	27.0	21.0	
Green sunfish			3	1	3									7	21.0	9.0	
White crappie									1					1	3.0	3.0	

uftg05fo.d21

Table 21. Electrofishing CPUE data (fish/hr) for each length group of bluegill (2017-21) and redear sunfish (2019-21) collected at Flemingsburg Old Reservoir. Redear sunfish were first stocked in 2018. Standard errors are in parentheses.

Year	Length group (in)				Total
	< 3.0	3.0 - 5.9	6.0 - 7.9	≥ 8.0	
Bluegill					
2017		329.3 (95.8)	32.9 (27.0)	27.0 (3.0)	389.2 (125.8)
2019	3.0 (3.0)	95.8 (35.9)	137.7 (24.0)	27.0 (9.0)	263.5 (47.9)
2021	3.0 (3.0)	68.9 (21.0)	27.0 (3.0)	6.0 (6.0)	104.8 (27.0)
Mean	2.0 (1.3)	164.7 (58.9)	65.9 (24.6)	20.0 (5.3)	252.5 (63.0)
Redear					
2019		29.9 (12.0)	27.0 (3.0)		56.9 (15.0)
2021			9.0 (3.0)	18.0 (18.0)	27.0 (21.0)
Mean		15.0 (9.9)	18.0 (5.5)	9.0 (9.0)	41.9 (13.6)

uftg05fo.d17-d21

Table 22. Electrofishing CPUE data (fish/hr) for each length group of largemouth bass collected at Flemingsburg Old Reservoir from 2017-21. Standard errors are in parentheses.

Year	Length group (in)				Total
	< 8.0	8.0 - 11.9	12.0 - 14.9	≥ 15.0	
2017	50.9 (38.9)	24.0 (0.0)	119.8 (29.9)	3.0 (3.0)	197.6 (71.9)
2019	32.9 (3.0)	164.7 (3.0)	27.0 (9.0)	12.0 (6.0)	236.5 (21.0)
2021		104.8 (44.9)	116.8 (21.0)		221.6 (65.9)
Mean	27.9 (13.8)	97.8 (28.3)	87.8 (21.6)	5.0 (2.9)	218.6 (26.7)

uftg05fo.d17-d21

Table 23. Length frequency and CPUE (fish/hr) of fish collected in one, 10-min electrofishing run at Lake Pollywog on 14 May 2021. Standard errors were not calculated because only one sampling run could be completed.

Completed:															Total	CPUE
Species	Inch class															
	2	3	4	5	6	7	8	9	10	11	12	13	14			
Bluegill	13	6	3	6	9	4								41	245.5	
Largemouth bass			2	4	7	2	1	3	5	8	4	2	2	40	239.5	
Redear sunfish		2	2			17	26							47	281.4	
Green sunfish	1	2	4	4										11	65.9	
White crappie								3	1					4	24.0	

uftg05lp.d21

Table 24. Electrofishing CPUE data (fish/hr) for each length group of bluegill (2010-21) and redear sunfish (2019-21) collected at Lake Pollywog. Redear sunfish were first stocked in 2018. Standard errors are in parentheses.

2010: Standard errors are in parentheses.					
Year	Length group (in)				Total
	< 3.0	3.0 - 5.9	6.0 - 7.9	≥ 8.0	
Bluegill					
2010	251.5	383.2	167.7		802.4
2011	449.1	1,574.9	215.6		2,239.5
2013	113.8	377.3	89.8		580.8
2015	29.9	634.7	323.4		988.0
2017	12.0	910.2	95.8		1,018.0
2019		47.9	215.6		263.5
2021	77.8	89.8	77.8		245.5
Mean	133.5 (61.8)	574.0 (201.5)	169.4 (33.8)		876.8 (256.2)

Redear

2019		263.5	24.0		287.4
2021		24.0	101.8	155.7	281.4
Mean		143.7 (119.8)	62.9 (38.9)	77.8 (77.8)	284.4 (3.0)

uftg05lp.d10-d11, uftg04lp.d13, uftg05lp.d15-d21

Table 25. Electrofishing CPUE data (fish/hr) for each length group of largemouth bass collected at Lake Pollywog from 2010-21. Standard errors are in parentheses.

Year	Length group (in)				Total
	< 8.0	8.0 - 11.9	12.0 - 14.9	≥ 15.0	
2010	113.8	179.6	24.0	24.0	341.3
2011	179.6	263.5	83.8	6.0	532.9
2013	65.9	59.9	71.9	6.0	203.6
2015	35.9	29.9	24.0	24.0	113.8
2017	18.0	59.9	71.9	6.0	155.7
2019	83.8	107.8	6.0	6.0	203.6
2021	89.8	101.8	47.9		239.5
Mean	83.8 (20.2)	114.6 (30.8)	47.1 (11.3)	10.3 (3.6)	255.8 (53.5)

uftg05lp.d10-d11, uftg04lp.d13, uftg05lp.d15-d21

Table 26. Length frequency and CPUE (fish/hr) of fish collected in two, 10-min electrofishing runs at Leary Lake on 11 May 2021.

Species	Inch class																	Total	CPUE	Std. error
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19			
Bluegill	1	17	43	51	35	3												150	449.1	83.8
Largemouth bass		1			1		1	11	13	16	5	3					2	53	158.7	62.9
Channel catfish														3				3	9.0	3.0
Redear sunfish	1	3	1			1	7											13	38.9	9.0
Green sunfish		1																1	3.0	3.0
White crappie				1														1	3.0	3.0

uftg05le.d21

Table 27. Electrofishing CPUE data (fish/hr) for each length group of bluegill (2016-21) and redear sunfish (2019-21) collected at Leary Lake. Redear sunfish were first stocked in 2018. Standard errors are in parentheses.

Year	Length group (in)				Total
	< 3.0	3.0 - 5.9	6.0 - 7.9	≥ 8.0	
Bluegill					
2016	8.0 (8.0)	85.3 (7.1)	90.7 (27.8)	21.3 (7.1)	205.3 (34.7)
2017		92.8 (38.9)	113.8 (47.9)	77.8 (29.9)	284.4 (116.8)
2019	3.0 (3.0)	239.5 (12.0)	242.5 (110.8)	3.0 (3.0)	488.0 (128.7)
2021		182.6 (9.0)	257.5 (83.8)	9.0 (9.0)	449.1 (83.8)
Mean	3.3 (2.7)	142.9 (23.7)	166.6 (37.0)	27.1 (11.4)	339.9 (54.0)
Redear					
2019		68.9 (21.0)	21.0 (3.0)		89.8 (18.0)
2021		15.0 (9.0)		24.0 (0.0)	38.9 (9.0)
Mean		41.9 (18.1)	10.5 (6.2)	12.0 (6.9)	64.4 (16.8)

uftg04le.d16, uftg05le.d17-d21

Table 28. Electrofishing CPUE data (fish/hr) for each length group of largemouth bass collected at Leary Lake from 2016-21. Standard errors are in parentheses.

Year	Length group (in)				Total
	< 8.0	8.0 - 11.9	12.0 - 14.9	≥ 15.0	
2016	128.0 (21.2)	338.7 (46.7)	181.3 (47.4)	13.3 (2.7)	661.3 (93.5)
2017	35.9 (6.0)	242.5 (92.8)	35.9 (0.0)	9.0 (3.0)	323.4 (89.8)
2019	47.9 (12.0)	32.9 (3.0)	38.9 (3.0)	3.0 (3.0)	122.8 (9.0)
2021	6.0 (6.0)	74.9 (27.0)	71.9 (41.9)	6.0 (0.0)	158.7 (62.9)
Mean	62.6 (18.3)	190.7 (49.9)	93.1 (27.3)	8.4 (1.8)	354.8 (87.0)

uftg04le.d16, uftg05le.d17-d21

Table 29. Length frequency and CPUE (fish/hr) of fish collected in two, 10-min electrofishing runs at Kingdom Come State Park Lake on 7 May 2021.

	Inch class																						Std.	
Species	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Total	CPUE	error			
Bluegill	3	4	5	11	4														27	80.8	38.9			
Largemouth bass	3	1	2		6	1		14	17	7		2	1		1			1	56	167.7	35.9			
Channel catfish											1								1	3.0	3.0			
Green sunfish	1	1																	2	6.0	0.0			
Redbreast sunfish	3	7	7	3	2	1													23	68.9	9.0			
uftg05kc.d21																								

Table 30. Electrofishing CPUE data (fish/hr) for each length group of bluegill collected at Kingdom Come State Park Lake from 2010-21. Standard errors are in parentheses.

Year	Length group (in)				Total
	< 3.0	3.0 - 5.9	6.0 - 7.9	≥ 8.0	
2010	3.0 (3.0)	12.0 (12.0)	9.0 (3.0)		24.0 (15.0)
2012	2.9 (2.9)	20.6 (2.9)	2.9 (2.9)	2.9 (2.9)	29.4 (5.9)
2014		15.0 (9.0)	12.0 (6.0)		27.0 (3.0)
2016		29.9	18.0		47.9
2018	6.0	119.8	6.0		131.7
2021		35.9 (18.0)	44.9 (21.0)		80.8 (38.9)
Mean	1.8 (0.9)	31.7 (10.8)	16.2 (6.0)	0.6 (0.6)	50.3 (13.0)

uftg04kc.d10, uftg05kc.d12-d21

Table 31. Electrofishing CPUE data (fish/hr) for each length group of largemouth bass collected at Kingdom Come State Park Lake from 2010-21. Standard errors are in parentheses.

Year	Length group (in)				Total
	< 8.0	8.0 - 11.9	12.0 - 14.9	≥ 15.0	
2010	15.0 (3.0)	158.7 (27.0)	9.0 (3.0)	3.0 (3.0)	185.6 (29.9)
2012	94.1 (29.4)	164.7 (0.0)	8.8 (2.9)	8.8 (2.9)	276.5 (23.5)
2014	38.9 (3.0)	125.8 (24.0)	24.0 (6.0)	12.0 (0.0)	200.6 (15.0)
2016	35.9	185.6		24.0	245.5
2018	113.8	245.5		6.0	365.3
2021	35.9 (6.0)	95.8 (41.9)	27.0 (3.0)	9.0 (3.0)	167.7 (35.9)
Mean	52.1 (12.2)	152.7 (16.4)	13.8 (3.6)	9.6 (2.0)	228.1 (21.9)

uftg04kc.d10, uftg05kc.d12-d21

Table 32. Length frequency and CPUE (fish/hr) of fish collected in one, 10-min electrofishing run at Cherokee Park Lake on 12 May 2021. Standard errors were not calculated because only one sampling run could be completed.

On 12 May 2021, standard errors were not calculated because only one sampling run could be completed.

Species	Inch class																				Total	CPUE
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
Bluegill	9	29	41	8	6	3															96	574.9
Largemouth bass		5	6	3	6	1				4	21	8	2		1	1			1		59	353.3
Channel catfish											1										1	6.0
Green sunfish				3	1																4	24.0
Redear sunfish		4						1	2												7	41.9
Warmouth					1																1	6.0

uftg05cp.d21

Table 33. Electrofishing CPUE data (fish/hr) for each length group of bluegill and redear sunfish collected at Cherokee Park Lake from 2010-21. Standard errors are in parentheses.

	Length group (in)				
Year	< 3.0	3.0 - 5.9	6.0 - 7.9	≥ 8.0	Total
Bluegill					
2010	29.9	65.9	41.9		137.2
2011	77.8	12.0	18.0		107.8
2013		53.9	77.8		131.7
2015		113.8			113.8
2017		113.8	59.9		173.7
2019		65.9	47.9		113.8
2021	53.9	467.1	53.9		574.9
Mean	23.1 (12.1)	127.5 (58.2)	42.8 (9.9)		193.3 (64.1)
Redear					
2010				18.0	18.0
2011					0.0
2013			12.0	6.0	18.0
2015		29.9	6.0		35.9
2017			65.9		65.9
2019		41.9		18.0	59.9
2021		24.0		18.0	41.9
Mean		13.7 (6.8)	12.0 (9.2)	8.6 (3.4)	34.2 (9.0)

uftg05cp.d10-121

Table 34. Electrofishing CPUE data (fish/hr) for each length group of largemouth bass collected at Cherokee Park Lake from 2010-21. Standard errors are in parentheses.

Year	Length group (in)				Total
	< 8.0	8.0 - 11.9	12.0 - 14.9	≥ 15.0	
2010	29.9	29.9	143.7	12.0	215.6
2011	101.8	65.9	35.9	18.0	221.6
2013	24.0	95.8	41.9	71.9	233.5
2015	29.9	6.0	6.0		41.9
2017	95.8	53.9	12.0	35.9	197.6
2019	131.7	71.9	41.9		245.5
2021	125.8	24.0	185.6	18.0	353.3
Mean	77.0 (18.0)	49.6 (11.8)	66.7 (26.3)	22.2 (9.5)	215.6 (34.7)

uftg05cp.d10-d21

Table 35. Length frequency and CPUE (fish/hr) of fish collected in one, 10-min electrofishing run at Fisherman's Park Lake #3 on 12 May 2021. Standard errors were not calculated because only one sampling run could be completed.

Species	Inch class																		Total	CPUE
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		
Bluegill	1	11	13	13	3														41	245.5
Largemouth bass			1				1	6	11	5	3	1	1	2	1			1	33	197.6
Channel catfish																1			1	6.0
Brown bullhead									1		1								2	12.0
Redear sunfish			1	4	2	1	2												10	59.9
Longear sunfish		1	5	3															9	53.9
Warmouth			1																1	6.0
Black crappie								1	1										2	12.0

uftg05fp.d21

Table 36. Electrofishing CPUE data (fish/hr) for each length group of bluegill (2010-21) and redear sunfish (2019-21) collected at Fisherman's Park Lake #3. Redear sunfish were first stocked in 2018. Standard errors are in parentheses.

	Length group (in)				
Year	< 3.0	3.0 - 5.9	6.0 - 7.9	≥ 8.0	Total
Bluegill					
2010	71.9	161.7	35.9		269.5
2011	83.8	203.6	35.9		323.4
2013	6.0	179.6	35.9		221.6
2015		119.8	29.9		149.7
2017	6.0	161.7	29.9		197.6
2019		89.8	24.0		113.8
2021	6.0	221.6	18.0		245.5
Mean	24.8 (13.8)	162.5 (17.3)	29.9 (2.6)		217.3 (26.9)
Redear					
2019		24.0	6.0	6.0	35.9
2021		29.9	18.0	12.0	59.9
Mean		27.0 (3.0)	12.0 (6.0)	9.0 (3.0)	47.9 (12.0)

uftg05fp.d10-d21

Table 37. Electrofishing CPUE data (fish/hr) for each length group of largemouth bass collected at Fisherman's Park Lake #3 from 2010-21. Standard errors are in parentheses.

Year	Length group (in)				Total
	< 8.0	8.0 - 11.9	12.0 - 14.9	≥ 15.0	
2010	18.0	107.8	101.8	41.9	269.5
2011	77.8	155.7	59.9	47.9	341.3
2013	24.0	131.7	35.9	53.9	245.5
2015	29.9	65.9	35.9	18.0	149.7
2017	77.8	35.9	24.0	29.9	167.7
2019	95.8	107.8	12.0	18.0	233.5
2021	6.0	137.7	29.9	24.0	197.6
Mean	47.1 (13.5)	106.1 (15.9)	42.8 (11.3)	33.4 (5.5)	229.3 (24.7)

uftg05fp.d10-d21

Table 38. Length frequency and CPUE (fish/hr) of fish collected in one, 10-min electrofishing run at Fisherman's Park Lake #4 on 12 May 2021. Standard errors were not calculated because only one sampling run could be completed.

Species	Inch class																				Total	CPUE
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
Bluegill	8	28	19	9	4															68	407.2	
Largemouth bass			1	2	1		1	7	2	2	7	3	2	1		1		1		31	185.6	
Channel catfish																			1	1	6.0	
Brown bullhead													1							1	6.0	
Redear sunfish							2													2	12.0	
Longear sunfish			1																	1	6.0	
Warmouth			1	4			1													6	35.9	
Black crappie							2													2	12.0	

uftg05fl.d21

Table 39. Electrofishing CPUE data (fish/hr) for each length group of bluegill (2010-21) and redear sunfish (2019-21) collected at Fisherman's Park Lake #4. Redear sunfish were first stocked in 2018. Standard errors are in parentheses.

first stocked in 2010. Standard errors are in parentheses.					
	Length group (in)				
Year	< 3.0	3.0 - 5.9	6.0 - 7.9	≥ 8.0	Total
Bluegill					
2010	29.9	179.6	101.8		311.4
2011	65.9	251.5	65.9		383.2
2013		353.3	29.9		383.2
2015		215.6			215.6
2017	6.0	197.6	47.9		251.5
2019	6.0	101.8	59.9		167.7
2021	47.9	335.3	24.0		407.2
Mean	22.2 (9.9)	233.5 (33.4)	47.1 (12.5)		302.8 (35.3)
Redear					
2019		6.0	18.0		24.0
2021				12.0	12.0
Mean		3.0 (3.0)	9.0 (9.0)	6.0 (6.0)	18.0 (6.0)

uftg05fl.d10-d21

Table 40. Electrofishing CPUE data (fish/hr) for each length group of largemouth bass collected at Fisherman's Park Lake #4 from 2010-21. Standard errors are in parentheses.

Year	Length group (in)				Total
	< 8.0	8.0 - 11.9	12.0 - 14.9	≥ 15.0	
2010	6.0	35.9	83.8	6.0	131.7
2011	65.9	89.8	83.8	18.0	257.5
2013	59.9	113.8	29.9	6.0	209.6
2015	65.9	137.7	18.0	24.0	245.5
2017	53.9	131.7	65.9	24.0	275.5
2019	47.9	113.8	89.8	12.0	263.5
2021	24.0	71.9	71.9	18.0	185.6
Mean	46.2 (8.6)	99.2 (13.6)	63.3 (10.7)	15.4 (2.9)	224.1 (19.5)

uftg05fl.d10-d21

Table 41. Length frequency and CPUE (fish/hr) of fish collected in two, 10-min electrofishing runs at Tom Wallace Park Lake on 5 May 2021.

Species	Inch class																							Total	CPUE	Std. error
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23					
Bluegill	1	11	7	2	4	4																	29	86.8	3.0	
Largemouth bass		7	1	4	15	13	3	5	4	1	2	2	2						2		1		62	185.6	71.9	
Channel catfish						1				2	1	1	1	1	2	1	2						12	35.9	18.0	
Green sunfish		1																					1	3.0	3.0	
Redear sunfish				1	2	10	1																14	41.9	29.9	
Warmouth				1																			1	3.0	3.0	

uftg05tw.d21

Table 42. Electrofishing CPUE data (fish/hr) for each length group of bluegill (2005-21) and redear sunfish (2021) collected at Tom Wallace Park Lake. Redear sunfish were stocked in 2019. Standard errors are in parentheses.

	Length group (in)				
Year	< 3.0	3.0 - 5.9	6.0 - 7.9	≥ 8.0	Total
Bluegill					
2005	73.8 (36.3)	186.3 (23.8)			260.0 (60.0)
2006	39.2 (19.9)	63.3 (21.7)	27.1 (7.6)		129.5 (41.8)
2007	4.0 (4.0)	32.1 (4.0)	16.1 (16.1)		52.2 (22.4)
2010	35.9	6.0	41.9		83.8
2011		116.8 (27.0)	18.0 (12.0)	6.0 (6.0)	140.7 (32.9)
2013		74.9 (3.0)	21.0 (15.0)	12.0 (6.0)	107.8 (18.0)
2015		68.9 (27.0)	12.0 (6.0)		80.8 (32.9)
2017		9.0 (9.0)	18.0 (0.0)	38.9 (3.0)	65.9 (6.0)
2019		53.9 (6.0)	71.9 (18.0)	29.9 (24.0)	155.7 (47.9)
2021		56.9 (21.0)	18.0 (6.0)	12.0 (12.0)	86.8 (3.0)
Mean	16.0 (6.6)	67.7 (11.3)	23.5 (4.8)	9.0 (3.4)	116.1 (15.4)
Redear					
2021			9.0 (3.0)	32.9 (27.0)	41.9 (29.9)

ufrpstom.d05, ufr05tom.d06-d07, uftg05tw.d10-d21

Table 43. Electrofishing CPUE data (fish/hr) for each length group of largemouth bass collected at Tom Wallace Park Lake from 2005-21. Standard errors are in parentheses.

Year	Length group (in)				Total
	< 8.0	8.0 - 11.9	12.0 - 14.9	≥ 15.0	
2005	153.8 (16.3)	116.3 (3.8)	18.8 (18.8)		288.8 (1.3)
2006	60.2 (19.1)	105.4 (18.7)	18.1 (11.5)	6.0 (3.5)	189.8 (44.6)
2007	68.3 (38.3)	164.7 (32.9)	32.1 (14.5)	8.0 (8.0)	273.1 (47.4)
2010	71.9	119.8	24.0	35.9	251.5
2011	80.8 (9.0)	95.8 (12.0)	12.0 (6.0)	6.0 (6.0)	194.6 (32.9)
2013	146.7 (27.0)	113.8 (12.0)	18.0 (12.0)	6.0 (6.0)	284.4 (3.0)
2015	92.8 (9.0)	98.8 (32.9)	21.0 (3.0)	12.0 (6.0)	224.6 (27.0)
2017	71.9 (18.0)	197.6 (29.9)	9.0 (3.0)	3.0 (3.0)	281.4 (12.0)
2019	92.8 (15.0)	98.8 (3.0)	3.0 (3.0)	18.0 (0.0)	212.6 (15.0)
2021	80.8 (15.0)	74.9 (38.9)	15.0 (9.0)	15.0 (9.0)	185.6 (71.9)
Mean	89.0 (9.1)	119.4 (9.8)	17.5 (3.5)	9.3 (2.2)	235.2 (13.9)

ufrpstom.d05, ufr05tom.d06-d07, uftg05tw.d10-d21

Table 44. Length frequency and CPUE (fish/hr) of fish collected in two, 10-min electrofishing runs at Waverly Park Lake on 5 May 2021.

Species	Inch class																		Total	CPUE	Std. error
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19			
Bluegill	25	52	104	18	4	1													204	610.8	269.5
Largemouth bass	1	4	6	1	2		2	6	2		1	4	5	2	3		1	2	42	125.8	35.9
Channel catfish														1	1				2	6.0	0.0
Green sunfish	3	4	3	2															12	35.9	29.9
Redear sunfish		1		1	14	7	3	1											27	80.8	15.0
Longear sunfish	1	1	3	2															7	21.0	21.0
Warmouth	1	3	1		1														6	18.0	18.0
White crappie					2	1						1							4	12.0	0.0

uftg05wp.d21

Table 45. Electrofishing CPUE data (fish/hr) for each length group of bluegill (2010-21) and redear sunfish (2015-21) collected at Waverly Park Lake. Redear sunfish were first stocked in 2013 and again in 2019. Standard errors are in parentheses.

	Length group (in)				
Year	< 3.0	3.0 - 5.9	6.0 - 7.9	≥ 8.0	Total
Bluegill					
2010	6.0	191.6	29.9		227.5
2011	509.0	191.6	6.0		706.6
2013	3.0 (3.0)	239.5 (41.9)	35.9 (12.0)		278.4 (56.9)
2015	29.9	179.6	12.0		221.6
2017	6.0	107.8	35.9		149.7
2019	18.0	125.8	18.0	6.0	167.7
2021	74.9 (62.9)	521.0 (203.6)	15.0 (3.0)		610.8 (269.5)
Mean	80.5 (55.4)	257.5 (62.4)	22.6 (4.4)	0.7 (0.7)	361.3 (85.7)
Redear					
2015		6.0		12.0	18.0
2017		12.0	12.0	6.0	29.9
2019	6.0	6.0	6.0	18.0	35.9
2021		6.0 (6.0)	62.9 (9.0)	12.0 (0.0)	80.8 (15.0)
Mean	1.2 (1.2)	7.2 (2.2)	28.7 (14.4)	12.0 (1.9)	49.1 (14.1)

uftg05wp.d10-d21

Table 46. Electrofishing CPUE data (fish/hr) for each length group of largemouth bass collected at Waverly Park Lake from 2010-21. Standard errors are in parentheses.

Year	Length group (in)				Total
	< 8.0	8.0 - 11.9	12.0 - 14.9	≥ 15.0	
2010	59.9			6.0	65.9
2011	125.8	65.9	12.0		203.6
2013	113.8 (18.0)	89.8 (12.0)	27.0 (15.0)	12.0 (6.0)	242.5 (50.9)
2015	167.7	107.8	18.0	6.0	299.4
2017	89.8	161.7	29.9		281.4
2019	35.9	47.9	83.8	6.0	173.7
2021	41.9 (18.0)	29.9 (0.0)	29.9 (18.0)	24.0 (0.0)	125.8 (35.9)
Mean	87.8 (15.9)	69.2 (16.5)	28.6 (8.6)	10.0 (3.2)	195.6 (28.3)

uftg05wp.d10-d21

Table 47. Length frequency and CPUE (fish/hr) of fish collected in two, 10-min electrofishing runs at William F. Miles Angler Lake on 12 May 2021.

	Inch class																						Std.	
Species	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	Total	CPUE	error		
Bluegill	6	25	15	3	1															50	149.7	12.0		
Largemouth bass		1			2	4	7	7	2	2	1	3		3	2		3	2	1	40	119.8	65.9		
Channel catfish								2			1		2							5	15.0	15.0		
Green sunfish			1																	1	3.0	3.0		
Redear sunfish		3	10	14	9	1														37	110.8	50.9		
uftg05mp.d21																								

uftg05mp.d21

Table 48. Electrofishing CPUE data (fish/hr) for each length group of bluegill and redear sunfish collected at William F. Miles Angler Lake from 2005-21. Standard errors are in parentheses.

parentheses.

	Length group (in)				
Year	< 3.0	3.0 - 5.9	6.0 - 7.9	≥ 8.0	Total
Bluegill					
2005	4.0 (4.0)	57.7 (31.4)	52.9 (26.5)		114.6 (59.0)
2006	18.1 (6.0)	36.1 (12.1)	42.2 (30.1)		96.4 (48.2)
2007	21.1 (7.6)	105.4 (37.9)	33.1 (16.6)		159.6 (60.1)
2010	27.0 (3.0)	122.8 (9.0)	32.9 (27.0)		182.6 (38.9)
2011	28.9 (21.0)	182.6 (98.8)	21.0 (3.0)		242.5 (122.8)
2013	3.0 (3.0)	128.7 (44.9)	62.9 (32.9)		194.6 (9.0)
2015	3.0 (3.0)	80.8 (3.0)	18.0 (6.0)		101.8 (6.0)
2017	9.0 (3.0)	242.5 (74.9)	21.0 (3.0)		272.5 (80.8)
2019	6.0 (0.0)	140.7 (21.0)	15.0 (3.0)		161.7 (18.0)
2021		137.7 (18.0)	12.0 (6.0)		149.7 (12.0)
Mean	13.3 (3.1)	119.1 (16.0)	32.2 (6.1)		164.6 (18.8)
Redear					
2005		2.8 (1.4)	34.5 (15.7)	4.2 (2.5)	41.5 (18.9)
2006		18.1 (18.1)	18.1 (18.1)		36.1 (36.1)
2007		39.2 (23.8)	9.0 (3.0)	3.0 (3.0)	51.2 (27.6)
2010		18.0 (0.0)	125.8 (24.0)	9.0 (3.0)	152.7 (21.0)
2011		107.8 (59.9)	65.9 (29.9)		173.7 (89.8)
2013		27.0 (15.0)	98.8 (32.9)	6.0 (6.0)	131.7 (53.9)
2015		32.9 (15.0)	62.9 (3.0)	6.0 (6.0)	101.8 (12.0)
2017	3.0 (3.0)	83.8 (12.0)	122.8 (56.9)	9.0 (3.0)	218.6 (44.9)
2019		41.9 (6.0)	107.8 (53.9)	6.0 (6.0)	155.7 (53.9)
2021		38.9 (15.0)	68.9 (32.9)	3.0 (3.0)	110.8 (50.9)
Mean	0.3 (0.3)	39.2 (8.4)	64.4 (11.0)	4.5 (1.1)	108.3 (16.1)

ufrpsmi4.d05, ufr05mi4.d06-d07, uftg05mp.d10-d21

Table 49. Electrofishing CPUE data (fish/hr) for each length group of largemouth bass collected at William F. Miles Angler Lake from 2005-21. Standard errors are in parentheses.

Year	Length group (in)				Total
	< 8.0	8.0 - 11.9	12.0 - 14.9	≥ 15.0	
2005	30.3 (16.3)	62.8 (38.2)			93.1 (54.3)
2006	12.1 (0.0)	90.4 (54.2)	6.0 (6.0)	6.0 (6.0)	114.5 (42.2)
2007	27.1 (5.8)	42.2 (22.8)	18.1 (3.5)	3.0 (3.0)	90.4 (26.7)
2010	27.0 (3.0)	89.8 (0.0)	21.0 (3.0)	18.0 (6.0)	155.7 (12.0)
2011	80.8 (56.9)	128.7 (21.0)	56.9 (9.0)	12.0 (12.0)	278.4 (15.0)
2013	12.0 (6.0)	101.8 (6.0)	18.0 (0.0)	12.0 (0.0)	143.7 (0.0)
2015	21.0 (15.0)	98.8 (15.0)	35.9 (6.0)	18.0 (12.0)	173.7 (12.0)
2017	35.9 (12.0)	47.9 (29.9)	18.0 (0.0)	18.0 (0.0)	119.8 (41.9)
2019	59.9 (12.0)	44.9 (3.0)	29.9 (12.0)	38.9 (27.0)	173.7 (6.0)
2021	9.0 (9.0)	59.9 (29.9)	18.0 (18.0)	32.9 (9.0)	119.8 (65.9)
Mean	31.1 (6.2)	73.1 (9.3)	20.9 (3.6)	14.1 (3.4)	139.1 (14.5)

ufrpsmi4.d05, ufr05mi4.d06-d07, uftg05mp.d10-d21

Table 50. Length frequency and CPUE (fish/hr) of fish collected in one, 10-min electrofishing run at William F. Miles Green Heron Lake on 12 May 2021. Standard errors were not calculated because only one sampling run could be completed.

Species	Inch class																		Total	CPUE
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		
Bluegill	1	7	11	4	7	7													37	221.6
Largemouth bass		3	8	8			2	20	8	5	2							1	57	341.3
Redear sunfish			1	2			1	1											5	29.9

uftg05mg.d21

Table 51. Electrofishing CPUE data (fish/hr) for each length group of bluegill and redear sunfish collected at William F. Miles Green Heron Lake from 2013-21. Standard errors are in parentheses.

in parentheses.

Year	Length group (in)				Total
	< 3.0	3.0 - 5.9	6.0 - 7.9	≥ 8.0	
Bluegill					
2013		185.6	107.8		293.4
2016		29.9	6.0		35.9
2017		59.9	12.0		71.9
2019		131.7	131.7		263.5
2021	6.0	131.7	83.8		221.6
Mean	1.0 (1.0)	89.8 (21.0)	56.9 (19.2)		147.7 (38.1)
Redear					
2013		12.0	18.0	12.0	41.9
2016				6.0	6.0
2017		47.9	53.9		101.8
2019		18.0	18.0	41.9	77.8
2021		18.0		12.0	29.9
Mean		16.0 (7.2)	15.0 (8.6)	12.0 (6.4)	42.9 (16.4)

uftg05mg.d13, uftg04mg.d16, uftg05mg.d17-d21

Table 52. Electrofishing CPUE data (fish/hr) for each length group of largemouth bass collected at William F. Miles Green Heron Lake from 2013-21. Standard errors are in parentheses.

Year	Length group (in)				Total
	< 8.0	8.0 - 11.9	12.0 - 14.9	≥ 15.0	
2013	83.9	287.4		6.0	377.3
2016	65.9	107.8	18.0		191.6
2017	53.9	185.6	41.9	18.0	299.4
2019	29.9	179.6	18.0	12.0	239.5
2021	113.8	209.6	12.0	6.0	341.3
Mean	57.9 (16.3)	161.7 (40.0)	15.0 (6.3)	7.0 (2.9)	241.5 (55.5)

uftg05mg.d13, uftg04mg.d16, uftg05mg.d17-d21

Table 53. Length frequency and CPUE (fish/hr) of fish collected in one, 10-min electrofishing run at Middleton Mills Long Pond on 4 May 2021. Standard errors were not calculated because only one sampling run could be completed.

on 1 May 2021. Standard errors were not calculated because only one sampling run could be completed.

Species	Inch class																						Total	CPUE
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22			
Bluegill	2	10	10	8	20	3																	53	317.4
Largemouth bass			4			1	4	12	6	8				1							1		37	221.6
Channel catfish									1	1	4	3	3	2									14	83.8
Green sunfish		1																					1	6.0
Redear sunfish						11	15																26	155.7
uftg05ml.d21																								

uftg05ml.d21

Table 54. Electrofishing CPUE data (fish/hr) for each length group of bluegill (2010-21) and redear sunfish (2020-21) collected at Middleton Mills Long Pond. Redear sunfish were first stocked in 2018. Standard errors are in parentheses.

first stocked in 2010. Standard errors are in parentheses.					
	Length group (in)				
Year	< 3.0	3.0 - 5.9	6.0 - 7.9	≥ 8.0	Total
Bluegill					
2010	32.4	988.0	24.0		1,335.3
2012	558.8	182.4			741.2
2014	12.0	251.5	29.9		293.4
2016	155.7	359.3	29.9		544.9
2018	47.9	1,065.9	24.0		1,137.7
2020	71.9	263.5	83.8		419.2
2021	12.0	167.7	137.7		317.4
Mean	170.2 (78.3)	468.8 (146.3)	47.1 (17.9)		686.1 (155.2)
Redear					
2020		53.9	119.8	6.0	179.6
2021			65.9	89.8	155.7
Mean		27.0 (27.0)	92.8 (27.0)	47.9 (41.9)	167.7 (12.0)

uftg05ml.d10-d21

Table 55. Electrofishing CPUE data (fish/hr) for each length group of largemouth bass collected at Middleton Mills Long Pond from 2010-21. Standard errors are in parentheses.

Year	Length group (in)				Total
	< 8.0	8.0 - 11.9	12.0 - 14.9	≥ 15.0	
2010	24.0	185.6	47.9		257.5
2012	123.5	58.8	23.5	29.4	235.3
2014	209.6		29.9	6.0	245.5
2016	12.0	59.9	65.9	6.0	143.7
2018		6.0	12.0	35.9	53.9
2020	77.8	83.8	6.0	6.0	173.7
2021	29.9	179.6		12.0	221.6
Mean	68.4 (28.7)	82.1 (28.4)	26.5 (8.9)	13.7 (5.2)	190.8 (27.6)

uftg05ml.d10-d21

Table 56. Length frequency and CPUE (fish/hr) of fish collected in one, 10-min electrofishing run at Middleton Mills Shelterhouse Pond on 4 May 2021. Standard errors were not calculated because only one sampling run could be completed.

Species	Inch class																		Total	CPUE
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		
Bluegill	28	26	32	5	2	1													94	562.9
Largemouth bass										1	3	1	2	1	1		1	1	11	65.9
Channel catfish									1		1	1	1						4	24.0
Redear sunfish	1	2	8	26	4	1													42	251.5
White crappie						1													1	6.0

uftg05ms.d21

Table 57. Electrofishing CPUE data (fish/hr) for each length group of bluegill and redear sunfish collected at Middleton Mills Shelterhouse Pond from 2005-21. Standard errors are in parentheses.

in parentheses.

Year	Length group (in)				Total
	< 3.0	3.0 - 5.9	6.0 - 7.9	≥ 8.0	
Bluegill					
2005	200.0	586.7	13.3		800.0
2006	18.1	168.7	6.0		192.8
2007	12.1	126.5	6.0		144.6
2010	6.0	107.8			113.8
2012	152.9	194.1			347.1
2014		113.8			113.8
2016	71.9	29.9			101.8
2018	41.9	71.9	6.0		119.8
2021	167.7	377.3	18.0		562.9
Mean	63.9 (22.4)	188.7 (48.1)	5.6 (2.1)		258.2 (68.4)
Redear					
2007		114.5	24.1		138.6
2010		1,149.7	18.0		1,167.7
2012	23.5	664.7	52.9		741.2
2014		329.3	12.0		341.3
2016	83.8	221.6	29.9		335.3
2018	6.0	155.7	29.9		191.6
2021	6.0	215.6	29.9		251.5
Mean	10.9 (7.6)	270.7 (106.0)	20.2 (5.3)		301.7 (109.2)

ufrpsmmp.d05, ufr05mmp.d06, ufr05mmp.d07, uftg05ms.d10-d21

Table 58. Electrofishing CPUE data (fish/hr) for each length group of largemouth bass collected at Middleton Mills Shelterhouse Pond from 2005-21. Standard errors are in parentheses.

Year	Length group (in)				Total
	< 8.0	8.0 - 11.9	12.0 - 14.9	≥ 15.0	
2005		6.7	20.0		26.7
2006	30.1	66.3	24.1	36.1	156.6
2007	18.1	60.0	60.0		138.6
2010	83.8	18.0	6.0	24.0	131.7
2012			11.8	5.9	17.8
2014	6.0				6.0
2016			6.0		6.0
2018		6.0		12.0	18.0
2021		6.0	35.9	24.0	65.9
Mean	16.9 (7.7)	26.3 (9.0)	22.6 (6.7)	12.6 (4.8)	78.4 (20.0)

ufrpsmmp.d05, ufr05mmp.d06, ufr05mmp.d07, uftg05ms.d10-d21

Table 59. Length frequency and CPUE (fish/hr) of fish collected in one, 10-min electrofishing run at Prisoners Lake on 14 May 2021. Standard errors were not calculated because only one sampling run could be completed.

Inch class																					
Species	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Total	CPUE
Bluegill	1	1	1	2																5	29.9
Largemouth bass			2	2			1	2	1		1	2	2	1				1	1	16	95.8
Channel catfish													3	1		4	1	2	1	12	71.9
Green sunfish	1																			1	6.0
Redear sunfish		1		5	3	1														10	59.9
Warmouth						1														1	6.0
Black crappie					1	1														2	12.0

uftg05pl.d21

Table 60. Electrofishing CPUE data (fish/hr) for each length group of bluegill (2010-21) and redear sunfish (2021) collected at Prisoners Lake. Redear sunfish were first stocked in 2018. Standard errors are in parentheses.

	Length group (in)				
Year	< 3.0	3.0 - 5.9	6.0 - 7.9	≥ 8.0	Total
Bluegill					
2010	18.0	185.6	29.9	6.0	239.5
2012	6.0	604.8	18.0		628.4
2014		59.9	24.0		83.8
2016	12.0	227.5	12.0		251.5
2017	6.0	113.8	41.9		161.7
2019		29.9	41.9		71.9
2021	6.0	24.0			29.9
Mean	6.8 (2.4)	177.9 (76.9)	24.0 (5.8)	0.9 (0.9)	209.6 (76.8)
Redear					
2021		35.9	24.0		59.9
uftg05pl.d10, uftg04pl.d12, uftg05pl.d14-d21					

Table 61. Electrofishing CPUE data (fish/hr) for each length group of largemouth bass collected at Prisoners Lake from 2010-21. Standard errors are in parentheses.

Year	Length group (in)				Total
	< 8.0	8.0 - 11.9	12.0 - 14.9	≥ 15.0	
2010	12.0	71.9	77.8	53.9	215.6
2012		35.9	6.0	41.9	83.8
2014	6.0	35.9	41.9	24.0	107.8
2016	24.0		18.0	18.0	59.9
2017	35.9	41.9	12.0	18.0	107.8
2019	18.0	59.9	24.0	35.9	137.7
2021	24.0	24.0	29.9	18.0	95.8
Mean	17.1 (4.6)	38.5 (8.9)	29.9 (9.2)	29.9 (5.4)	115.5 (19.0)

uftg05pl.d10, uftg04pl.d12, uftg05pl.d14-d21

Table 62. Length frequency and CPUE (fish/hr) of fish collected in three, 10-min electrofishing runs at Brickyard Pond on 7 May 2021.

Species	Inch class																		Total	CPUE	Std. error
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19			
Bluegill	3	29	90	49	10														181	361.3	83.4
Largemouth bass		2	1		2	1	5	4	1	6	8	8	3	6	3		2	3	55	109.8	16.0
Channel catfish										1	2		1	3					7	14.0	8.7
Brown bullhead													1						1	2.0	2.0
Redear sunfish		1			4	10	9	1											25	49.9	7.2
Green sunfish	4	14	9	3	2														30	59.9	12.0
Longear sunfish		1	1	2															4	8.0	4.0
Warmouth	1		1	3	2	1													8	16.0	10.0
White crappie					2							1		1					4	8.0	8.0
Black crappie					10	1													11	22.0	13.1

uftg05bp.d21

Table 63. Electrofishing CPUE data (fish/hr) for each length group of bluegill and redear sunfish collected at Brickyard Pond from 2010-21. Standard errors are in parentheses.

Year	Length group (in)				Total
	< 3.0	3.0 - 5.9	6.0 - 7.9	≥ 8.0	
Bluegill					
2010	93.8 (2.0)	491.0 (126.2)	16.0 (7.2)		600.8 (121.4)
2012	24.0 (6.0)	131.1 (55.6)	22.0 (8.7)		477.1 (58.9)
2014	33.9 (7.2)	271.5 (40.4)	24.0 (18.0)		329.3 (35.1)
2016	22.0 (12.1)	457.1 (67.9)	37.9 (13.1)		517.0 (76.9)
2017	8.0 (2.0)	291.4 (49.7)	63.9 (22.2)		363.3 (73.0)
2019	47.9 (15.9)	247.5 (71.7)	16.0 (13.1)		311.4 (98.9)
2021	6.0 (3.5)	335.3 (73.2)	20.0 (10.6)		361.3 (83.4)
Mean	33.7 (6.8)	360.7 (30.9)	28.5 (5.7)		422.9 (34.5)
Redear					
2010		10.0 (5.3)	4.0 (2.0)	12.0 (6.9)	26.0 (8.0)
2012	4.0 (4.0)	173.7 (36.4)	55.9 (8.7)		233.5 (31.1)
2014	2.0 (2.0)	117.8 (38.1)	157.7 (61.9)		277.5 (91.8)
2016		31.9 (2.0)	159.7 (34.8)	2.0 (2.0)	193.6 (38.1)
2017			79.8 (27.7)	8.0 (5.3)	87.8 (32.9)
2019		4.0 (2.0)	6.0 (3.5)	35.9 (12.5)	45.9 (12.1)
2021		2.0 (2.0)	27.9 (5.3)	20.0 (2.0)	49.9 (7.2)
Mean	0.9 (0.6)	48.5 (15.7)	70.2 (16.5)	11.1 (3.3)	130.6 (24.9)

uftg04bp.d10, uftg05bp.d12-d21

Table 64. Electrofishing CPUE data (fish/hr) for each length group of largemouth bass collected at Brickyard Pond from 2010-21. Standard errors are in parentheses.

Year	Length group (in)				Total
	< 8.0	8.0 - 11.9	12.0 - 14.9	≥ 15.0	
2010	81.8 (23.0)	87.8 (16.3)	49.9 (12.1)	12.0 (6.0)	231.5 (38.1)
2012	59.9 (6.0)	183.6 (31.0)	39.9 (10.6)	18.0 (3.5)	301.4 (46.9)
2014	26.0 (7.2)	155.7 (12.5)	39.9 (13.1)	6.0 (3.5)	227.5 (33.0)
2016	18.0 (9.2)	93.8 (20.3)	57.9 (11.1)	26.0 (7.2)	195.6 (37.0)
2017	8.0 (2.0)	65.9 (9.2)	35.9 (13.8)	14.0 (8.0)	123.8 (12.1)
2019	10.0 (5.3)	43.9 (16.3)	27.9 (8.7)	10.0 (2.0)	91.8 (22.2)
2021	12.0 (6.0)	31.9 (10.0)	37.9 (5.3)	27.9 (2.0)	109.8 (16.0)
Mean	30.8 (6.8)	94.7 (13.0)	41.4 (4.0)	16.3 (2.3)	183.1 (18.8)

uftg04bp.d10, uftg05bp.d12-d21

Table 65. Length frequency and CPUE (fish/hr) of fish collected in four, 10-min electrofishing runs at Logan Hubble Park Lake on 2 May 2021.

Inch class																							Std.
Species	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	Total	CPUE	error
Bluegill	1	15	12	25	18	4															75	112.3	15.0
Largemouth bass	2	12	18	4	1	5	11	13	22	26	20	13	9		2	1				4	163	244.0	24.5
Redear sunfish				3	2	9	15	3													32	47.9	12.9
White crappie								4													4	6.0	6.0

uftg05lh.d21

Table 66. Electrofishing CPUE data (fish/hr) for each length group of bluegill and redear sunfish collected at Logan Hubble Park Lake from 2016-21. Standard errors are in parentheses.

	Length group (in)				
Year	< 3.0	3.0 - 5.9	6.0 - 7.9	≥ 8.0	Total
Bluegill					
2016	6.0 (3.5)	121.8 (8.7)	24.0 (9.2)		151.7 (17.1)
2017	24.0 (12.5)	169.7 (56.3)	119.8 (51.2)	75.9 (8.7)	389.2 (56.9)
2019	8.0 (8.0)	77.8 (45.7)	41.9 (13.8)	14.0 (4.0)	141.7 (66.9)
2021		41.9 (10.1)	64.4 (9.9)	6.0 (3.5)	112.3 (15.0)
Mean	8.8 (3.9)	98.1 (20.3)	62.6 (14.8)	22.6 (8.8)	192.1 (36.3)
Redear					
2016		2.0 (2.0)	8.0 (4.0)	16.0 (4.0)	26.0 (8.7)
2017		2.0 (2.0)	2.0 (2.0)	18.0 (10.4)	22.0 (8.7)
2019		4.0 (2.0)	16.0 (4.0)	4.0 (2.0)	24.0 (6.9)
2021			7.5 (2.9)	40.4 (11.3)	47.9 (12.9)
Mean		1.8 (0.8)	8.3 (2.0)	21.2 (5.5)	31.3 (5.6)

uftg06lh.d16, uftg05lh.d17-d21

Table 67. Electrofishing CPUE data (fish/hr) for each length group of largemouth bass collected at Logan Hubble Park Lake from 2016-21. Standard errors are in parentheses.

Year	Length group (in)				Total
	< 8.0	8.0 - 11.9	12.0 - 14.9	≥ 15.0	
2016	18.0 (6.0)	37.9 (4.0)	67.9 (16.3)	18.0 (3.5)	141.7 (23.0)
2017	31.9 (4.0)	37.9 (4.0)	81.8 (14.4)	26.0 (10.6)	177.6 (22.2)
2019	47.9 (15.1)	73.9 (16.0)	145.7 (22.2)	24.0 (18.0)	291.4 (17.4)
2021	55.4 (14.1)	76.4 (17.4)	88.3 (4.5)	24.0 (7.3)	244.0 (24.5)
Mean	39.6 (6.6)	58.0 (8.0)	95.4 (10.3)	23.0 (4.7)	216.0 (19.0)

uftg06lh.d16, uftg05lh.d17-d21

Table 68. Length frequency and CPUE (fish/hr) of fish collected in two, 10-min electrofishing runs at Whitehall Park Lake on 6 May 2021.

Lake on 6 May 2021.

Species	Inch class															Total	CPUE	Std. error
	2	3	4	5	6	7	8	9	10	11	12	13	14	15				
Bluegill	3	1	2	4	1										11	32.9	3.0	
Largemouth bass			16	47	20	2	5	60	49	8	2	5		1	215	643.7	44.9	
Redear sunfish		4	20	24	25	13	2	2	7						97	290.4	50.9	
Green sunfish			2	4	4										10	29.9	6.0	
White crappie											1				1	3.0	3.0	

uftg05wh.d21

uftg05wh.d21

Table 69. Electrofishing CPUE data (fish/hr) for each length group of bluegill (2011-21) and redear sunfish (2019-21) collected at Whitehall Park Lake. Redear sunfish were first stocked in 2018. Standard errors are in parentheses.

stocked in 2010. Standard errors are in parentheses.

Year	Length group (in)				Total
	< 3.0	3.0 - 5.9	6.0 - 7.9	≥ 8.0	
Bluegill					
2011	371.3	167.7	95.8		634.7
2012	320.6 (202.9)	247.1 (5.9)	47.1 (41.2)	2.9 (2.9)	617.4 (152.9)
2014	3.0 (3.0)	77.8 (12.0)			80.8 (9.0)
2015		77.8			77.8
2017		341.3 (191.6)	74.9 (56.9)		416.2 (248.5)
2019	6.0 (6.0)	12.0 (12.0)	21.0 (15.0)	6.0 (6.0)	44.9 (27.0)
2021	9.0 (3.0)	21.0 (3.0)	3.0 (3.0)		32.9 (3.0)
Mean	88.3 (51.0)	137.7 (43.8)	32.4 (13.4)	1.5 (1.1)	260.0 (83.8)
Redear					
2019	3.0 (3.0)	21.0 (9.0)	35.9 (35.9)		59.9 (41.9)
2021		143.7 (24.0)	113.8 (53.9)	32.9 (21.0)	290.4 (50.9)
Mean	1.5 (1.5)	82.3 (36.9)	74.9 (34.7)	16.5 (12.8)	175.2 (71.8)

uftg05wh.d11-d12, uftg04wh.d14, uftg05wh.d15-d21

Table 70. Electrofishing CPUE data (fish/hr) for each length group of largemouth bass collected at Whitehall Park Lake from 2011-21. Standard errors are in parentheses.

Year	Length group (in)				Total
	< 8.0 in	8.0 - 11.9 in	12.0 - 14.9 in	≥ 15.0 in	
2011	227.5	77.8	137.7	6.0	449.1
2012	214.7 (55.9)	185.3 (26.5)	26.5 (2.9)	14.7 (2.9)	441.2 (23.5)
2014	128.7 (21.0)	227.5 (59.9)	167.7 (24.0)	9.0 (3.0)	532.9 (101.8)
2015	173.7	47.9	89.8	18.0	329.3
2017	275.5 (59.9)	6.0 (0.0)	9.0 (3.0)	3.0 (3.0)	293.4 (59.9)
2019	434.1 (128.7)	110.8 (32.9)	9.0 (3.0)	3.0 (3.0)	556.9 (155.7)
2021	254.5 (21.0)	365.3 (6.0)	21.0 (21.0)	3.0 (3.0)	643.7 (44.9)
Mean	252.0 (34.3)	160.2 (36.7)	57.9 (19.0)	7.5 (1.8)	477.5 (43.3)

uftg05wh.d11-d12, uftg04wh.d14, uftg05wh.d15-21

Table 71. Length frequency and CPUE (fish/hr) of fish collected in three, 10-min electrofishing runs at Maysville-Mason County Recreation Park Lake on 13 May 2021.

Species	Inch class																				Total	CPUE	Std. error
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21			
Bluegill	8	103	17	92	37	1															258	515.0	55.3
Largemouth bass		15		1	3	2		2	1	2	6	11	10	7	5	2	1	2		2	72	143.7	21.6
Green sunfish	11	46	22	7																	86	171.7	78.4
Redear sunfish		1			5	2	1														9	18.0	9.2
Longear sunfish		1	4	3																	8	16.0	10.6
White crappie					7	18	1														26	51.9	12.1
Black crappie					6	14	2														22	43.9	11.1
Hybrid sunfish		1	9	7	1																18	35.9	12.0

uftg05ma.d21

Table 72. Electrofishing CPUE data (fish/hr) for each length group of bluegill (2014-21) and redear sunfish (2019-21) collected at Maysville-Mason County Recreation Park Lake. Redear sunfish were first stocked in 2018. Standard errors are in parentheses.

	Length group (in)				
Year	< 3.0	3.0 - 5.9	6.0 - 7.9	≥ 8.0	Total
Bluegill					
2014	67.9 (33.2)	682.6 (129.7)	135.7 (29.0)		886.2 (181.2)
2015	16.0 (5.3)	437.1 (88.2)	47.9 (21.6)		501.0 (100.9)
2016	24.0 (6.0)	928.1 (251.5)	9.0 (9.0)		961.1 (266.5)
2017	9.0 (3.0)	158.7 (50.9)	32.9 (15.0)		200.6 (38.9)
2019	47.9 (24.0)	547.9 (302.4)	56.9 (44.9)	6.0 (6.0)	652.7 (323.4)
2021	16.0 (2.0)	423.2 (41.3)	75.9 (17.1)		515.0 (55.3)
Mean	30.7 (8.5)	526.6 (75.5)	65.1 (13.6)		622.4 (84.7)
Redear					
2019		44.9 (15.0)	6.0 (0.0)		50.9 (15.0)
2021		2.0 (2.0)	14.0 (8.7)	2.0 (2.0)	18.0 (9.2)
Mean		19.2 (11.6)	10.8 (5.2)	1.2 (1.2)	31.1 (10.6)

uftg05ma.d14-d15, uftg04ma.d16, uftg05ma.d17-d21

Table 73. Electrofishing CPUE data (fish/hr) for each length group of largemouth bass collected at Maysville-Mason County Recreation Park Lake from 2014-21. Standard errors are in parentheses.

Year	Length group (in)				Total
	< 8.0	8.0 - 11.9	12.0 - 14.9	≥ 15.0	
2014	14.0 (2.0)	55.9 (10.6)	14.0 (5.3)	22.0 (16.3)	105.8 (21.1)
2015	12.0 (0.0)	37.9 (10.6)	27.9 (10.6)	16.0 (13.1)	93.8 (33.2)
2016	12.0 (0.0)	18.0 (6.0)	47.9 (6.0)	18.0 (6.0)	95.8 (18.0)
2017	6.0 (0.0)	12.0 (6.0)	15.0 (3.0)	27.0 (21.0)	59.9 (24.0)
2019	15.0 (3.0)	83.8 (18.0)	62.9 (9.0)	32.9 (3.0)	194.6 (15.0)
2021	41.9 (15.8)	10.0 (5.3)	53.9 (10.4)	37.9 (4.0)	143.7 (21.6)
Mean	18.0 (4.3)	35.9 (7.5)	35.9 (5.8)	25.6 (4.7)	115.4 (13.4)

uftg05ma.d14-d15, uftg04ma.d16, uftg05ma.d17-d21

Table 74. Length frequency and CPUE (fish/hr) of fish collected in three, 10-min electrofishing runs at Carlson Lake (Ft. Knox) on 5 May 2021.

Lake (T. L. Knox) on 5 May 2021.																					
Species	Inch class																		Total	CPUE	Std. error
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18				
Bluegill	31	46	23	6	4	4	1											115	229.5	75.1	
Largemouth bass			5	3	1	1	27	31	15	7	20	10	1	2	1			124	247.5	35.3	
Channel catfish															1	3	1	5	10.0	2.0	
Redear sunfish	5	21	14	16	16	15	26	7										120	239.5	3.5	

uftg05cl.d21

Table 75. Electrofishing CPUE data (fish/hr) for each length group of bluegill and redear sunfish collected at Carlson Lake (Ft. Knox) from 2011-21. Standard errors are in parentheses.

parentfishes.

	Length group (in)				
Year	< 3.0	3.0 - 5.9	6.0 - 7.9	≥ 8.0	Total
Bluegill					
2011	201.6 (125.2)	203.6 (120.2)	119.8 (85.0)	6.0 (6.0)	530.9 (180.4)
2013	4.0 (2.0)	10.0 (5.3)	8.0 (2.0)		22.0 (8.0)
2015	111.8 (85.0)	105.8 (70.2)	43.9 (20.8)		261.5 (137.3)
2017	67.9 (22.2)	323.4 (15.8)	51.9 (5.3)		443.1 (33.0)
2019	127.7 (62.4)	403.2 (102.6)	20.0 (17.1)		550.9 (152.9)
2021	61.9 (23.0)	149.7 (53.2)	16.0 (2.0)	2.0 (2.0)	229.5 (75.1)
Mean	95.8 (27.7)	199.3 (40.8)	43.3 (15.5)	1.3 (1.0)	339.7 (60.6)
Redear					
2011	16.0 (13.1)	51.9 (16.3)	26.0 (2.0)	109.8 (19.7)	203.6 (12.0)
2013		91.8 (19.0)	37.9 (17.7)	14.0 (7.2)	143.7 (36.1)
2015	6.0 (3.5)	95.8 (24.9)	89.8 (44.9)	4.0 (4.0)	195.6 (32.9)
2017	2.0 (2.0)	103.8 (20.3)	63.9 (27.7)	47.9 (22.7)	217.6 (19.0)
2019	49.9 (27.9)	277.5 (40.5)	91.8 (31.9)	161.7 (52.3)	580.8 (92.2)
2021	10.0 (5.3)	101.8 (21.0)	61.9 (5.3)	65.9 (12.5)	239.5 (3.5)
Mean	14.0 (6.0)	120.4 (19.5)	61.9 (10.8)	67.2 (15.9)	263.5 (38.2)

uftg05cl.d11, uftg04cl.d13, uftg05cl.d15-d21

Table 76. Electrofishing CPUE data (fish/hr) for each length group of largemouth bass collected at Carlson Lake (Ft. Knox) from 2011-21. Standard errors are in parentheses.

Year	Length group (in)				Total
	< 8.0	8.0 - 11.9	12.0 - 14.9	≥ 15.0	
2011	201.6 (35.3)	171.7 (35.0)	20.0 (5.3)	8.0 (4.0)	401.2 (63.1)
2013	10.0 (7.2)	125.8 (12.0)	49.9 (20.8)	2.0 (2.0)	187.6 (7.2)
2015	53.9 (24.9)	61.9 (4.0)	101.8 (21.0)		217.6 (13.1)
2017	27.9 (2.0)	143.7 (24.2)	143.7 (18.3)	10.0 (7.2)	325.4 (20.0)
2019	22.0 (5.3)	67.9 (17.1)	125.8 (33.0)	6.0 (0.0)	221.6 (50.9)
2021	20.0 (10.0)	159.7 (16.3)	61.9 (17.1)	6.0 (6.0)	247.5 (35.3)
Mean	55.9 (17.3)	121.8 (12.5)	83.8 (12.8)	5.3 (1.7)	266.8 (22.0)

uftg05cl.d11, uftg04cl.d13, uftg05cl.d15-d21

Table 77. Length frequency and CPUE (fish/hr) of fish collected in one, 10-min electrofishing run at Easy Walker Park Pond on 13 May 2021. Standard errors were not calculated because only one sampling run could be completed.

Species	Inch class											Total	CPUE
	3	4	5	6	7	8	9	10	11	12	13		
Bluegill	1	4	3	9	1							18	107.8
Largemouth bass	1	11	17	14	1	2	9	9	4	3	2	73	437.1
Redear sunfish	1	3		1	53	10						68	407.2
Green sunfish			1	1								2	12.0

uftg05ew.d21

Table 78. Electrofishing CPUE data (fish/hr) for each length group of bluegill (2010-21) and redear sunfish (2019-21) collected at Easy Walker Park Pond. Redear sunfish were first stocked in 2018. Standard errors are in parentheses.

first stocked in 2010. Standard errors are in parentheses.					
	Length group (in)				
Year	< 3.0	3.0 - 5.9	6.0 - 7.9	≥ 8.0	Total
Bluegill					
2010	59.9	179.6	12.0		251.5
2012		64.7	123.5		188.2
2014		107.8	89.8		197.6
2016		209.6	35.9		245.5
2019		335.3	287.4		622.8
2021		47.9	59.9		107.8
Mean	10.0 (10.0)	157.7 (43.9)	101.8 (40.6)		269.5 (73.7)
Redear					
2019		77.8	12.0		89.8
2021		24.0	323.4	59.9	407.2
Mean		50.9 (27.0)	167.7 (155.7)	29.9 (29.9)	248.5 (158.7)
uftg04ew.d10-d12, uftg05ew.d14, uftg04ew.d16, uftg05ew.d19-d21					

Table 79. Electrofishing CPUE data (fish/hr) for each length group of largemouth bass collected at Easy Walker Park Pond from 2010-21. Standard errors are in parentheses.

Year	Length group (in)				Total
	< 8.0	8.0 - 11.9	12.0 - 14.9	≥ 15.0	
2010	233.5	263.5	12.0		509.0
2012	17.7	335.3	64.7	5.9	423.5
2014	24.0	83.3	47.9		155.7
2016	101.8	179.6	29.9	29.9	341.3
2019	6.0		6.0	35.9	47.9
2021	263.5	143.7	29.9		437.1
Mean	107.8 (46.7)	168.7 (50.1)	31.9 (9.1)	12.0 (6.7)	320.4 (73.8)

uftg04ew.d10-d12, uftg05ew.d14, uftg04ew.d16, uftg05ew.d19-d21

Table 80. Length frequency and CPUE (fish/net set) of channel/hybrid catfish collected by baited-tandem hoop nets (three sets; 72-hr soak time) that were set at Millennium Park Pond on 22 October 2021. Additional samples were collected in 2012, 2015 and 2018.

Year	Inch class																			Total	CPUE
	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27		
2012	2	2	14	7	8	1	1	2			1	1	1						1	41	13.7
2015				2	2	6			1											11	3.7
2018			1	14	37	66	48	35	25	18	19	11	18	13	5	5	2			317	105.7
2021			2	4	11	4	5	2	1	1										30	10.0

ufcf10mi.d12-d21

Table 81. Number of fish and the relative weight (Wr) for each length group of channel/hybrid catfish collected by baited-tandem hoop nets (three sets; 72-hr soak time) that were set at Millennium Park Pond from 2012-21. Standard errors are in parentheses.

Year	Length group (in)								Total	
	7.0 - 10.9		11.0 - 15.9		16.0 - 23.9		≥ 24			
	No.	Wr	No.	Wr	No.	Wr	No.	Wr	No.	Wr
2012	4	74 (5)	31	89 (2)	5	93 (5)	1	84	41	88 (2)
2015			10	94 (2)	1	106			11	95 (2)
2018			94	86 (1)	63	89 (1)	2	98 (3)	159	87 (1)
2021			26	94 (3)	4	114 (7)			30	96 (3)

ufcf10mi.d12-d21

Table 82. Length frequency and CPUE (fish/net set) of channel/hybrid catfish collected by baited-tandem hoop nets (three sets; 72-hr soak time) that were set at Panther Creek Park Lake on 15 October 2021. Additional samples were collected in 2013, 2016 and 2019.

Year	Inch class																			Total	CPUE
	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25		
2013				2	11	20	17	13	10	4	2	1		1		1				82	27.3
2016					1	3		3	1	1	2		1	1						13	4.3
2019	1	1	7	7	3	13	15	13	8	9	3	8	4	2		1		2	1	98	32.7
2021					2	2	11	6	3	4	2	3	1							34	11.3

ufcf09pc.d13, ufcf10pc.d16-d21

Table 83. Number of fish and the relative weight (Wr) for each length group of channel/hybrid catfish collected by baited-tandem hoop nets (three sets; 72-hr soak time) that were set at Panther Creek Park Lake from 2013-21. Standard errors are in parentheses.

Year	Length group (in)								Total	
	7.0 - 10.9		11.0 - 15.9		16.0 - 23.9		≥ 24			
	No.	Wr	No.	Wr	No.	Wr	No.	Wr	No.	Wr
2013	2	101 (4)	71	90 (1)	9	95 (5)			82	91 (1)
2016			8	90 (3)	5	99 (5)			13	93 (3)
2019	16	96 (3)	52	92 (1)	27	97 (3)	3	105 (11)	98	94 (1)
2021			24	83 (1)	10	86 (3)			34	84 (1)

ufcf09pc.d13, ufcf10pc.d16-d21

Table 84. Length frequency and CPUE (fish/net set) of channel/hybrid catfish collected by baited-tandem hoop nets (three sets; 72-hr soak time) that were set at Yellow Creek Park Lake on 15 October 2021. Additional samples were collected in 2013, 2016 and 2019.

Inch class																			Total	CPUE
Year	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23				
2013		1	9	24	54	46	25	12	6	3		1	1			1	183	61.0		
2016				1	2	3	1	1	2	1		1					14	4.7		
2019	2	7	4	13	17	20	23	11	4	5	2	1		1	1		111	37.0		
2021			7	19	39	44	27	11	13	6	2	2	1			1	172	57.3		

ufcf09yc.d13, ufcf10yc.d16-d21

Table 85. Number of fish and the relative weight (Wr) for each length group of channel/hybrid catfish collected by baited-tandem hoop nets (three sets; 72-hr soak time) that were set at Yellow Creek Park Lake from 2013-21. Standard errors are in parentheses.

Year	Length group (in)								Total	
	7.0 - 10.9		11.0 - 15.9		16.0 - 23.9		≥ 24			
	No.	Wr	No.	Wr	No.	Wr	No.	Wr	No.	Wr
2013	10	98 (3)	160	89 (1)	12	87 (2)			182	89 (1)
2016	1	100	8	92 (3)	4	99 (6)			13	95 (3)
2019	13	106 (3)	84	93 (2)	14	98 (3)			111	95 (2)
2021	6	89 (4)	89	81 (1)	25	81 (1)			120	81 (1)

ufcf09yc.d13, ufcf10yc.d16-d21

Table 86. Length frequency and CPUE (fish/net set) of channel/hybrid catfish collected by baited-tandem hoop nets (three sets; 72-hr soak time) that were set at Kentucky Horse Park Rolex Lake on 7 October 2021. Additional samples were collected in 2017 and 2018.

Year	Inch class																	Total	CPUE
	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
2017	3	56	189	421	274	108	108	54	37	13	6	5	7	4	1	1		1,287	437.0
2018		9	44	140	190	176	88	58	19	7	4				1	1		737	245.7
2021		1	13	53	68	74	52	37	18	13	6	6					1	342	114.0

ufcf10rl.d17-d21

Table 87. Number of fish and the relative weight (Wr) for each length group of channel/hybrid catfish collected by baited-tandem hoop nets (three sets; 72-hr soak time) that were set at Kentucky Horse Park Rolex Lake from 2017-21. Standard errors are in parentheses.

Year	Length group (in)								Total	
	7.0 - 10.9		11.0 - 15.9		16.0 - 23.9		≥ 24			
	No.	Wr	No.	Wr	No.	Wr	No.	Wr	No.	Wr
2017	90	98 (3)	108	85 (1)	18	85 (2)			216	90 (1)
2018	36	94 (2)	148	84 (1)	13	82 (3)			197	86 (1)
2021	67	86 (1)	249	80 (0)	26	80 (2)			342	81 (0)

ufcf10rl.d17-d21

Table 88. Length frequency and CPUE (fish/net set) of channel/hybrid catfish collected by baited-tandem hoop nets (three sets; 72-hr soak time) that were set at Flemingsburg Old Reservoir on 7 October 2021. An additional sample was collected in 2019.

Year	Inch class															Total	CPUE
	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25		
2019							1						1		1	3	1.0
2021	2	4	5	2	3		3		1	3						23	7.7

ufcf09fo.d19, ufcf10fo.d21

Table 89. Number of fish and the relative weight (Wr) for each length group of channel/hybrid catfish collected by baited-tandem hoop nets (three sets; 72-hr soak time) that were set at Flemingsburg Old Reservoir in 2021. Standard errors are in parentheses.

Year	Length group (in)								Total	
	7.0 - 10.9		11.0 - 15.9		16.0 - 23.9		≥ 24			
	No.	Wr	No.	Wr	No.	Wr	No.	Wr	No.	Wr
2021			16	94 (3)	7	90 (3)			23	93 (2)
ufcf10fo.d21										

ufcf10fo.d21

Table 90. Length frequency and CPUE (fish/net set) of channel/hybrid catfish collected by baited-tandem hoop nets (three sets; 72-hr soak time) that were set at Lake Pollywog on 8 October 2021. Additional samples were collected in 2012, 2015 and 2018.

Year	Inch class																Total	CPUE
	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22			
2012		9	14	12	1	2	2	2							1	43	14.3	
2015	1	10	17	20	18	10	6	4	2	1						89	29.7	
2018			1	1	1	7	3	4	6	4	3	2				32	10.7	
2021	1	5	12	27	29	18	24	24	8	6	3	2	3			162	54.0	

ufcf10lp.d12-d21

Table 91. Number of fish and the relative weight (Wr) for each length group of channel/hybrid catfish collected by baited-tandem hoop nets (three sets; 72-hr soak time) that were set at Lake Pollywog from 2012-21. Standard errors are in parentheses.

Year	Length group (in)								Total	
	7.0 - 10.9		11.0 - 15.9		16.0 - 23.9		≥ 24			
	No.	Wr	No.	Wr	No.	Wr	No.	Wr	No.	Wr
2012	23	90 (2)	19	84 (2)					42	87 (1)
2015	28	106 (2)	58	95 (1)	3	103 (5)			89	99 (1)
2018	1	96	15	84 (2)	15	79 (2)			31	82 (1)
2021	18	81 (4)	122	78 (1)	22	79 (2)			162	78 (1)

ufcf10lp.d12-d21

Table 92. Length frequency and CPUE (fish/net set) of channel/hybrid catfish collected by baited-tandem hoop nets (three sets; 72-hr soak time) that were set at Leary Lake on 8 October 2021.

Year	Inch class												Total	CPUE
	10	11	12	13	14	15	16	17	18	19	20	21		
2021	2	6	6	8	12	8	6	1	5	3	1	1	59	19.7

ufcf10le.d21

Table 93. Number of fish and the relative weight (Wr) for each length group of channel/hybrid catfish collected by baited-tandem hoop nets (three sets; 72-hr soak time) that were set at Leary Lake in 2021. Standard errors are in parentheses.

Year	Length group (in)								Total	
	7.0 - 10.9		11.0 - 15.9		16.0 - 23.9		≥ 24			
	No.	Wr	No.	Wr	No.	Wr	No.	Wr	No.	Wr
2021	2	93 (0)	40	80 (4)	17	75 (2)			59	79 (3)

ufcf10le.d21

Table 94. Length frequency and CPUE (fish/net set) of channel/hybrid catfish collected by baited-tandem hoop nets (three sets; 72-hr soak time) that were set at James D. Beville Park Lake on 15 October 2021. Additional samples were collected in 2015 and 2019.

Year	Inch class																Total	CPUE
	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
2015		1	1	8	30	45	42	21	16	3			1				168	56.0
2019			1		2	6	4	8	8	4		2	1				36	12.0
2021	1	15	26	37	63	55	52	39	29	9	1	1	1			1	330	110.0

ufcf10jb.d15-d21

Table 95. Number of fish and the relative weight (Wr) for each length group of channel/hybrid catfish collected by baited-tandem hoop nets (three sets; 72-hr soak time) that were set at James D. Beville Park Lake from 2015-21. Standard errors are in parentheses.

Year	Length group (in)								Total	
	7.0 - 10.9		11.0 - 15.9		16.0 - 23.9		≥ 24			
	No.	Wr	No.	Wr	No.	Wr	No.	Wr	No.	Wr
2015	2	90 (13)	146	87 (1)	19	89 (2)			167	88 (1)
2019	1	87	20	85 (3)	15	90 (3)			36	87 (2)
2021	31	82 (1)	112	77 (1)	32	79 (1)			175	78 (1)

ufcf10jb.d15-d21

Table 96. Length frequency and CPUE (fish/net set) of channel/hybrid catfish collected by baited-tandem hoop nets (three sets; 72-hr soak time) that were set at Cherokee Park Lake on 21 October 2021. Additional samples were collected in 2012, 2015 and 2018.

Year	Inch class																				Total	CPUE
	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26		
2012	2	7	23	21	14	15	10	3	6	8	2	5	3								119	39.7
2015							2	4	3	3	1	1	1	1							16	5.3
2018								1		2		1	2	2							8	2.7
2021					4	14	10	22	19	22	16	3	9		3	2		2	1	1	126	42.0

ufcf10cp.d12-d21

Table 97. Number of fish and the relative weight (Wr) for each length group of channel/hybrid catfish collected by baited-tandem hoop nets (three sets; 72-hr soak time) that were set at Cherokee Park Lake from 2012-21. Standard errors are in parentheses.

Year	Length group (in)								Total	
	7.0 - 10.9		11.0 - 15.9		16.0 - 23.9		≥ 24			
	No.	Wr	No.	Wr	No.	Wr	No.	Wr	No.	Wr
2012	53	93 (2)	48	85 (1)	18	84 (2)			119	88 (1)
2015			9	86 (3)	7	88 (3)			16	87 (2)
2018			1	112	4	108 (4)			5	109 (4)
2021			68	88 (1)	54	88 (1)	4	97 (6)	126	88 (1)

ufcf10cp.d12-d21

Table 98. Length frequency and CPUE (fish/net set) of channel/hybrid catfish collected by baited-tandem hoop nets (three sets; 72-hr soak time) that were set at Tom Wallace Park Lake on 21 October 2021. Additional samples were collected in 2015 and 2018.

Year	Inch class												Total	CPUE
	9	10	11	12	13	14	15	16	17	18	19	20		
2015				1	1	1			1	1			5	1.7
2018			5	6	6	2	10	7	7	2	3	1	49	16.3
2021	5	7	12	14	17	15	14	5	2	1	2		94	31.3

ufcf10tw.d15-d21

Table 99. Number of fish and the relative weight (Wr) for each length group of channel/hybrid catfish collected by baited-tandem hoop nets (three sets; 72-hr soak time) that were set at Tom Wallace Park Lake from 2015-21. Standard errors are in parentheses.

Year	Length group (in)								Total	
	7.0 - 10.9		11.0 - 15.9		16.0 - 23.9		≥ 24			
	No.	Wr	No.	Wr	No.	Wr	No.	Wr	No.	Wr
2015			3	96 (7)	2	94 (1)			5	95 (4)
2018			29	86 (1)	20	90 (2)			49	88 (1)
2021	12	101 (4)	72	87 (1)	10	87 (5)			94	89 (1)

ufcf10tw.d15-d21

Table 100. Length frequency and CPUE (fish/net set) of channel/hybrid catfish collected by baited-tandem hoop nets (three sets; 72-hr soak time) that were set at Waverly Park Lake on 21 October 2021. Additional samples were collected in 2012, 2015 and 2018.

	Inch class														
Year	9	10	11	12	13	14	15	16	17	18	19	20	21	Total	CPUE
2012	5	3	4	1	1	5	2	1						22	11.0
2015			5	8	8	12	3	3	1					40	13.3
2018				2	1	8	6	4	1	5	2		1	30	10.0
2021	3	8	15	20	8	4	3	3	1	1		2		68	22.7

ufcf10wp.d12-d21

Table 101. Number of fish and the relative weight (Wr) for each length group of channel/hybrid catfish collected by baited-tandem hoop nets (three sets; 72-hr soak time) that were set at Waverly Park Lake from 2012-21. Standard errors are in parentheses.

Year	Length group (in)								Total	
	7.0 - 10.9		11.0 - 15.9		16.0 - 23.9		≥ 24			
	No.	Wr	No.	Wr	No.	Wr	No.	Wr	No.	Wr
2012	8	85 (4)	13	81 (1)	1	81			22	82 (2)
2015			36	92 (2)	4	91 (7)			40	92 (2)
2018			17	90 (2)	12	90 (2)			29	90 (1)
2021	11	100 (3)	50	97 (1)	7	91 (6)			68	97 (1)

ufcf10wp.d12-d21

Table 102. Length frequency and CPUE (fish/net set) of channel/hybrid catfish collected by baited-tandem hoop nets (three sets; 72-hr soak time) that were set at Prisoners Lake on 8 October 2021. Additional samples were collected in 2013, 2016 and 2019.

Year	Inch class																	Total	CPUE
	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22			
2013	1	2	23	16	14	12	5	4		2	1	1		1			82	27.3	
2016		2	2	22	10	6	9	6	2		2						61	20.3	
2019		3	14	15	25	31	71	56	40	20	18	17	10	4	1	3	328	109.3	
2021	3	6	9	18	12	23	32	17	19	10	8	4	3			1	165	55.0	

ufcf10pl.d13-d21

Table 103. Number of fish and the relative weight (Wr) for each length group of channel/hybrid catfish collected by baited-tandem hoop nets (three sets; 72-hr soak time) that were set at Prisoners Lake from 2013-21. Standard errors are in parentheses.

Year	Length group (in)								Total	
	7.0 - 10.9		11.0 - 15.9		16.0 - 23.9		≥ 24			
	No.	Wr	No.	Wr	No.	Wr	No.	Wr	No.	Wr
2013	42	91 (2)	35	84 (2)	15	81 (6)			82	88 (1)
2016	25	98 (3)	33	86 (2)	2	100 (0)			60	92 (2)
2019	25	82 (2)	92	77 (1)	63	82 (1)			180	80 (1)
2021	36	99 (5)	103	81 (2)	26	78 (1)			165	85 (2)

ufcf10pl.d13-d21

Table 104. Length frequency and CPUE (fish/net set) of channel/hybrid catfish collected by baited-tandem hoop nets (two sets; 72-hr soak time) that were set at Logan Hubble Park Lake on 22 October 2021. An additional sample was collected in 2018.

Year	Inch class																Total	CPUE
	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
2018	1	5	5	19	21	43	29	33	33	19	17	15	6	6	4	1	257	85.7
2021			7	12	20	24	26	8	13	6	4		1				121	60.5

ufcf10lh.d18-d21

Table 105. Number of fish and the relative weight (Wr) for each length group of channel/hybrid catfish collected by baited-tandem hoop nets (two sets; 72-hr soak time) that were set at Logan Hubble Park Lake from 2018-21. Standard errors are in parentheses.

Year	Length group (in)								Total	
	7.0 - 10.9		11.0 - 15.9		16.0 - 23.9		≥ 24			
	No.	Wr	No.	Wr	No.	Wr	No.	Wr	No.	Wr
2018	4	108 (5)	45	97 (1)	35	92 (1)			84	95 (1)
2021			89	84 (1)	32	84 (2)			121	84 (1)
ufcf10lh.d18-d21										

ufcf10lh.d18-d21

Table 106. Length frequency and CPUE (fish/net set) of channel/hybrid catfish collected by baited-tandem hoop nets (two sets; 72-hr soak time) that were set at Maysville-Mason County Recreation Park Lake on 7 October 2021. Additional samples were collected in 2016 and 2019.

Year	Inch class																Total	CPUE
	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22			
2016					1	1	3	1	2				1				9	3.0
2019						3	8	7	8	1			1				28	9.3
2021	2	8	11	22	23	18	12	14	9	4	5	2	1	2	1		134	67.0

ufcf10ma.d16, ufcf09ma.d19, ufcf10ma.d21

Table 107. Number of fish and the relative weight (Wr) for each length group of channel/hybrid catfish collected by baited-tandem hoop nets (two sets; 72-hr soak time) that were set at Maysville-Mason County Recreation Park Lake from 2016-21. Standard errors are in parentheses.

Year	Length group (in)								Total	
	7.0 - 10.9		11.0 - 15.9		16.0 - 23.9		≥ 24			
	No.	Wr	No.	Wr	No.	Wr	No.	Wr	No.	Wr
2016			6	83 (3)	3	79 (1)			9	81 (2)
2019			18	82 (3)	10	90 (8)			28	85 (3)
2021	21	93 (2)	89	86 (1)	24	86 (2)			134	87 (1)

ufcf10ma.d16, ufcf09ma.d19, ufcf10ma.d21

Table 108. Length frequency and CPUE (fish/net set) of channel/hybrid catfish collected by baited-tandem hoop nets (three sets; 72-hr soak time) that were set at Carlson Lake (Ft. Knox) on 21 October 2021. Additional samples were collected in 2015 and 2018.

Year	Inch class																				Total	CPUE	
	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27			
2015			2	3	5	7	3	1													21	7.0	
2018		11	26	60	92	104	60	30	32	31	11	9	3	7	3		2				481	160.3	
2021	4	18	38	52	48	70	67	52	23	19	6	6	2	3	2					1	1	412	137.3

ufcf10cl.d15-d21

Table 109. Number of fish and the relative weight (Wr) for each length group of channel/hybrid catfish collected by baited-tandem hoop nets (three sets; 72-hr soak time) that were set at Carlson Lake (Ft. Knox) from 2015-21. Standard errors are in parentheses.

Year	Length group (in)								Total	
	7.0 - 10.9		11.0 - 15.9		16.0 - 23.9		≥ 24			
	No.	Wr	No.	Wr	No.	Wr	No.	Wr	No.	Wr
2015	2	102 (17)	19	82 (3)					21	84 (3)
2018	7	93 (6)	147	82 (1)	56	84 (2)	2	82 (7)	212	83 (1)
2021	30	86 (2)	117	81 (1)	41	81 (1)	2	93 (6)	190	82 (1)

ufcf10cl.d15-d21

Table 110. Length frequency and CPUE (fish/net set) of channel/hybrid catfish collected by baited-tandem hoop nets (three sets; 72-hr soak time) that were set at Bloomfield Park Lake on 14 October 2021. Additional samples were collected in 2012, 2015 and 2018.

Year	Inch class																				Total	CPUE
	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25				
2012	1	10	35	29	34	26	15	11	4	4	6	2			1	1					179	59.7
2015	1	4	11	24	49	43	33	9	10	1	3	5									193	64.3
2018							1	5	2	4	2	1			1						16	5.3
2021			10	29	18	34	36	27	24	6	8	4	1	2	1	1			1		202	67.3

ufcf10bl.d12-d21

Table 111. Number of fish and the relative weight (Wr) for each length group of channel/hybrid catfish collected by baited-tandem hoop nets (three sets; 72-hr soak time) that were set at Bloomfield Park Lake from 2012-21. Standard errors are in parentheses.

Year	Length group (in)								Total	
	7.0 - 10.9		11.0 - 15.9		16.0 - 23.9		≥ 24			
	No.	Wr	No.	Wr	No.	Wr	No.	Wr	No.	Wr
2012	46	90 (1)	115	86 (2)	18	89 (3)			179	87 (1)
2015	15	88 (4)	158	86 (1)	19	82 (3)			192	85 (1)
2018			6	95 (4)	10	99 (3)			16	98 (3)
2021	10	84 (2)	144	79 (0)	47	81 (1)	1	95	202	80 (0)

ufcf10bl.d12-d21

Table 112. Length frequency and CPUE (fish/net set) of channel/hybrid catfish collected by baited-tandem hoop nets (three sets; 72-hr soak time) that were set at Three Springs Lake on 14 October 2021. Additional samples were collected in 2011, 2015 and 2018.

Year	Inch class																													Total	CPUE
	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29								
2011	1	33	49	41	66	120	122	62	30	15	10	6	3				1											559	186.3		
2015									3	2	2	1	2	1	2	1	1											15	5.0		
2018						2	9	26	22	20	14	7	4	2	5	2	3		1	1	1	1					120	40.0			
2021				1	3	9	23	28	14	11	9	5	6	2		1	1						1	1			115	38.3			

ufcf10ts.d11-d21

Table 113. Number of fish and the relative weight (Wr) for each length group of channel/hybrid catfish collected by baited-tandem hoop nets (three sets; 72-hr soak time) that were set at Three Springs Lake from 2011-21. Standard errors are in parentheses.

Year	Length group (in)								Total	
	7.0 - 10.9		11.0 - 15.9		16.0 - 23.9		≥ 24			
	No.	Wr	No.	Wr	No.	Wr	No.	Wr	No.	Wr
2011	38	95 (1)	127	87 (1)	34	88 (2)			199	89 (1)
2015			3	106 (7)	12	108 (2)			15	108 (2)
2018			59	90 (2)	57	91 (1)	4	93 (3)	120	90 (1)
2021	1	93	77	83 (1)	35	84 (1)	2	99 (2)	115	84 (1)

ufcf10ts.d11-d21

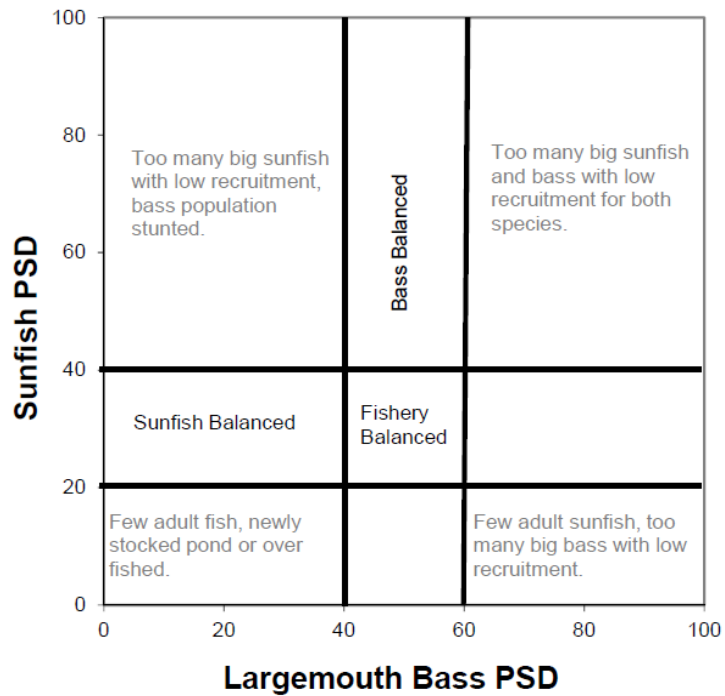


Figure 1. Generally accepted proportional stock density (PSD) index ranges for sunfish (bluegill and redear sunfish, weighted) and largemouth bass populations in small impoundments.

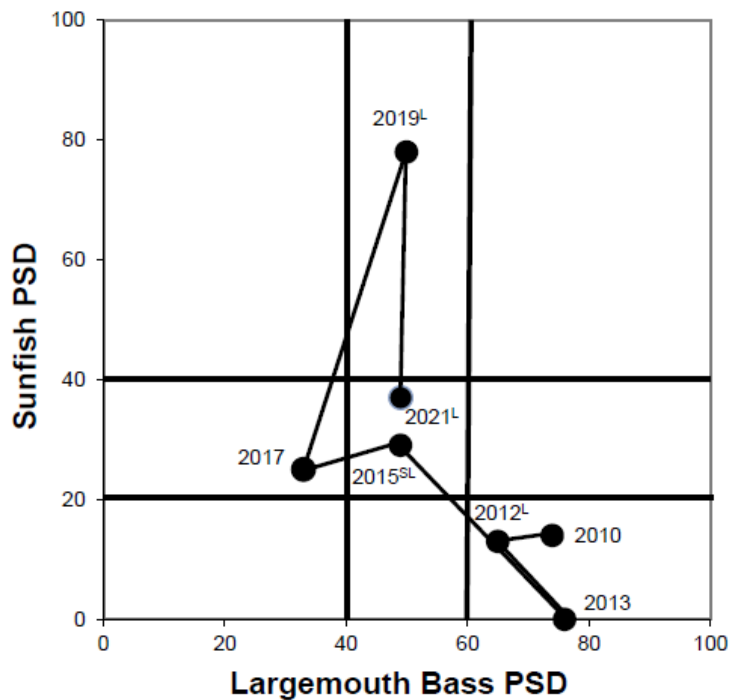


Figure 2. Proportional stock density (PSD) index for sunfish (weighted) and largemouth bass populations at Anderson County Community Park Lake from 2010-21. Superscripts denote occasions where sample size of either sunfish (^S) or largemouth bass (^L) was insufficient to estimate PSD with 90% confidence of being in one of three intervals (0-39, 40-60, 61-100).

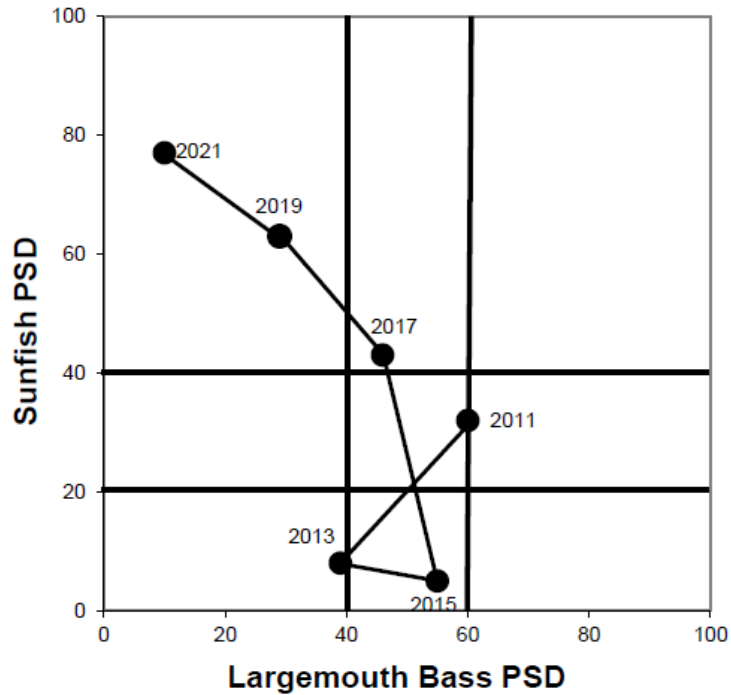


Figure 3. Proportional stock density (PSD) index for sunfish (weighted) and largemouth bass populations at Camp Ernst Lake from 2011-21.

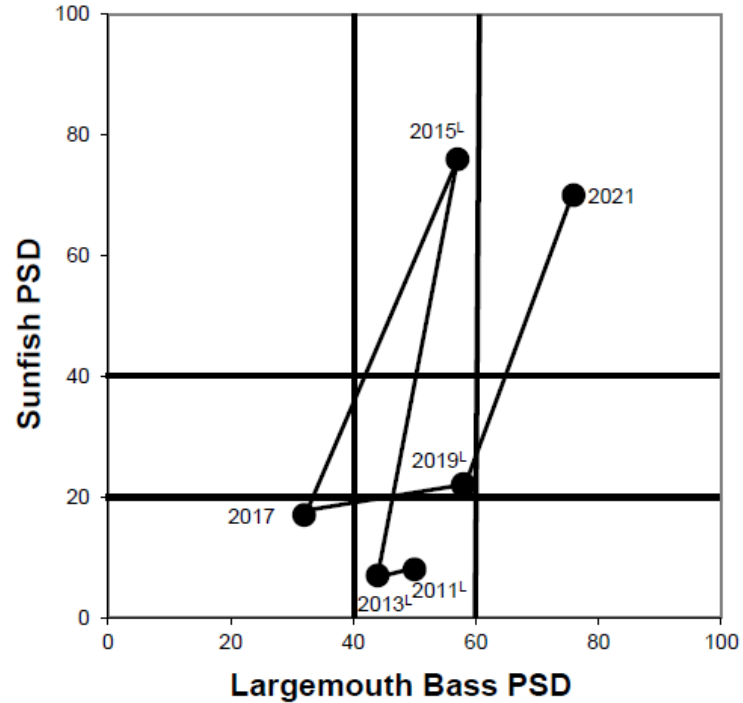


Figure 4. Proportional stock density (PSD) index for sunfish (weighted) and largemouth bass populations at Millennium Park Pond from 2011-21. Superscripts denote occasions where sample size of either sunfish (^S) or largemouth bass (^L) was insufficient to estimate PSD with 90% confidence of being in one of three intervals (0-39, 40-60, 61-100).

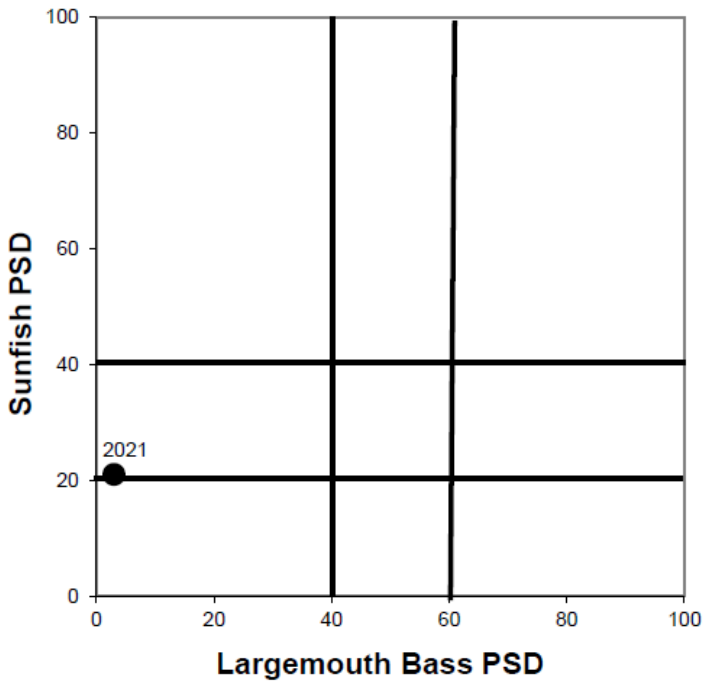


Figure 5. Proportional stock density (PSD) index for sunfish (weighted) and largemouth bass populations at Robert J. Barth Park Lake in 2021.

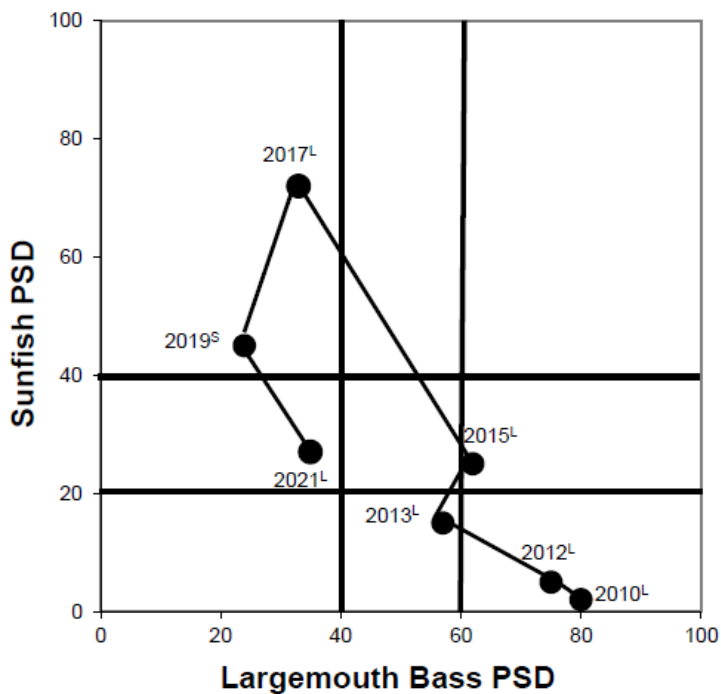


Figure 6. Proportional stock density (PSD) index for sunfish (weighted) and largemouth bass populations at Southgate Park Lake from 2010-21. Superscripts denote occasions where sample size of either sunfish (^S) or largemouth bass (^L) was insufficient to estimate PSD with 90% confidence of being in one of three intervals (0-39, 40-60, 61-100).

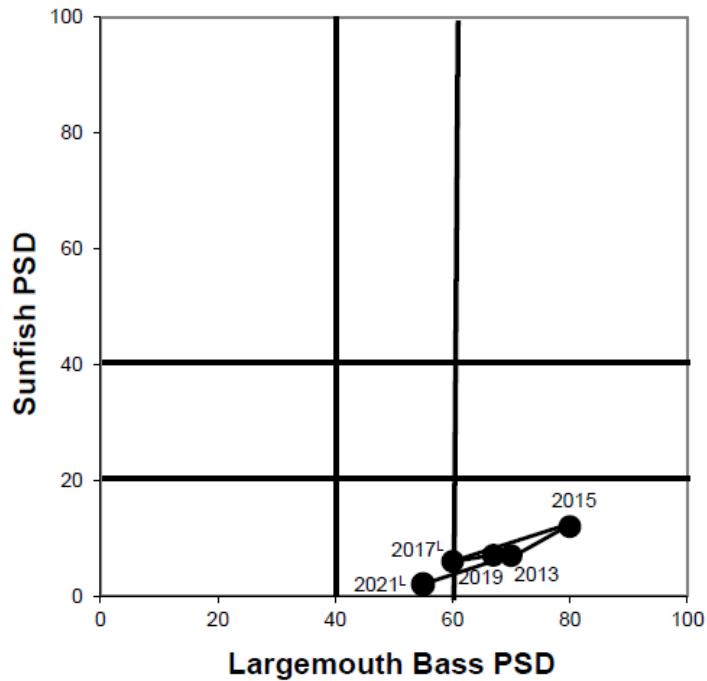


Figure 7. Proportional stock density (PSD) index for sunfish (weighted) and largemouth bass populations at Jacobson Park Lake from 2013-21. Superscripts denote occasions where sample size of either sunfish (^S) or largemouth bass (^L) was insufficient to estimate PSD with 90% confidence of being in one of three intervals (0-39, 40-60, 61-100).

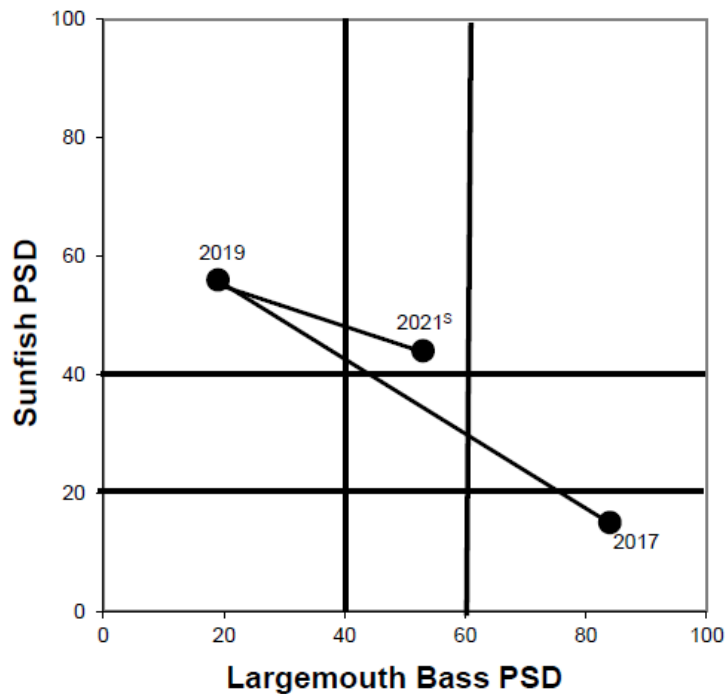


Figure 8. Proportional stock density (PSD) index for sunfish (weighted) and largemouth bass populations at Flemingsburg Old Reservoir from 2017-21. Superscripts denote occasions where sample size of either sunfish (^S) or largemouth bass (^L) was insufficient to estimate PSD with 90% confidence of being in one of three intervals (0-39, 40-60, 61-100).

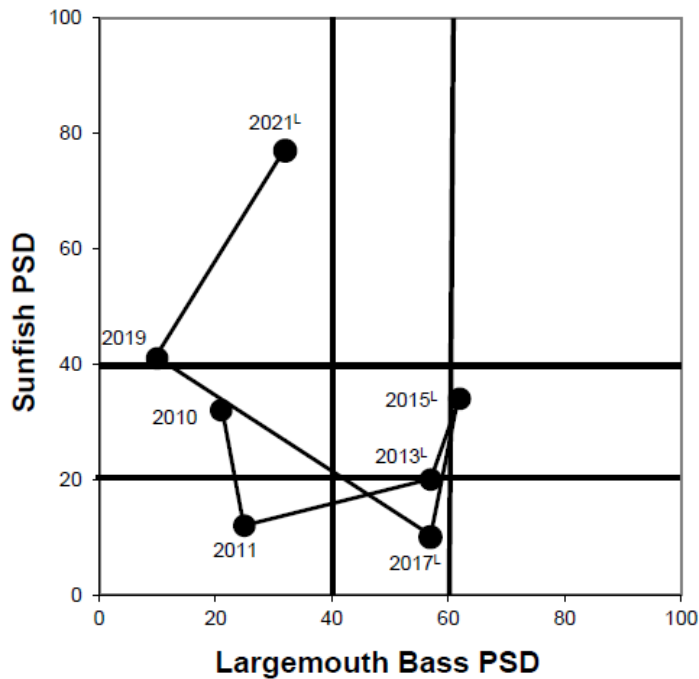


Figure 9. Proportional stock density (PSD) index for sunfish (weighted) and largemouth bass populations at Lake Pollywog from 2010-21. Superscripts denote occasions where sample size of either sunfish (^S) or largemouth bass (^L) was insufficient to estimate PSD with 90% confidence of being in one of three intervals (0-39, 40-60, 61-100).

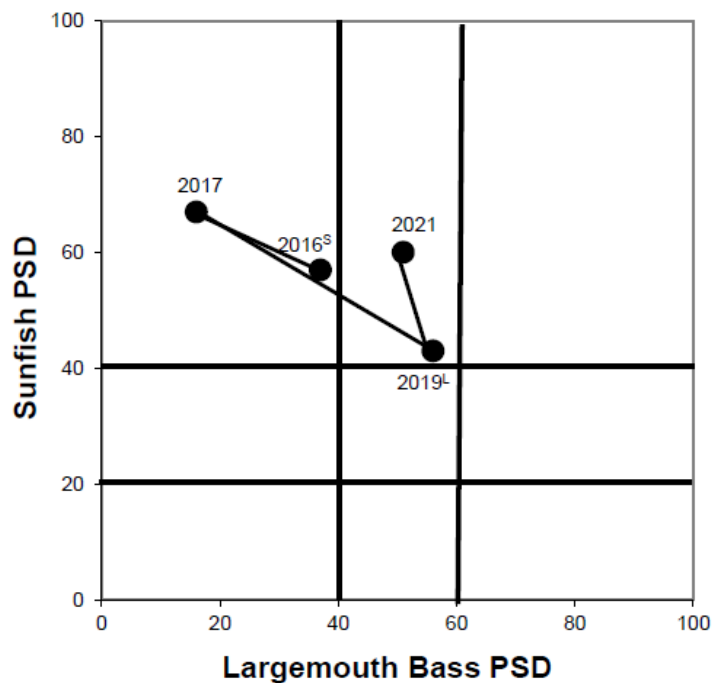


Figure 10. Proportional stock density (PSD) index for sunfish (weighted) and largemouth bass populations at Leary Lake from 2016-21. Superscripts denote occasions where sample size of either sunfish (^S) or largemouth bass (^L) was insufficient to estimate PSD with 90% confidence of being in one of three intervals (0-39, 40-60, 61-100).

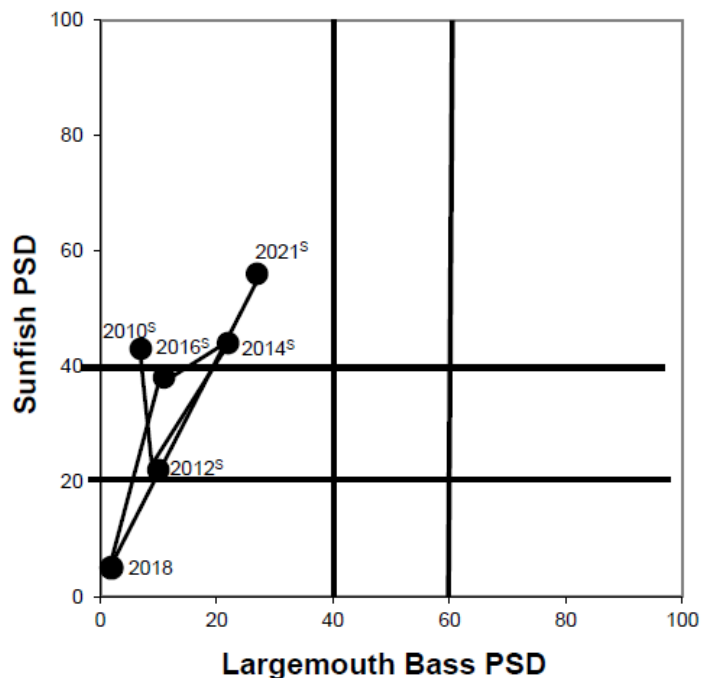


Figure 11. Proportional stock density (PSD) index for sunfish (weighted) and largemouth bass populations at Kingdom Come State Park Lake from 2010-21. Superscripts denote occasions where sample size of either sunfish (^S) or largemouth bass (^L) was insufficient to estimate PSD with 90% confidence of being in one of three intervals (0-39, 40-60, 61-100).

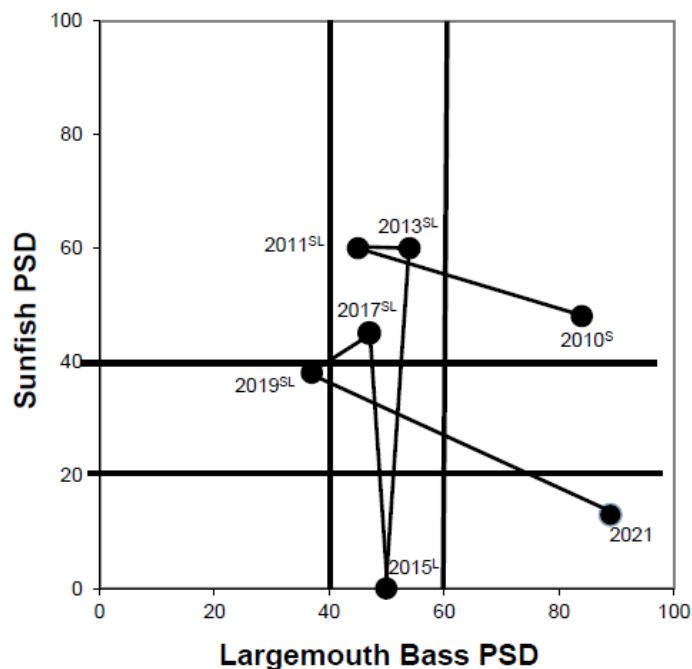


Figure 12. Proportional stock density (PSD) index for sunfish (weighted) and largemouth bass populations at Cherokee Park Lake from 2010-21. Superscripts denote occasions where sample size of either sunfish (^S) or largemouth bass (^L) was insufficient to estimate PSD with 90% confidence of being in one of three intervals (0-39, 40-60, 61-100).

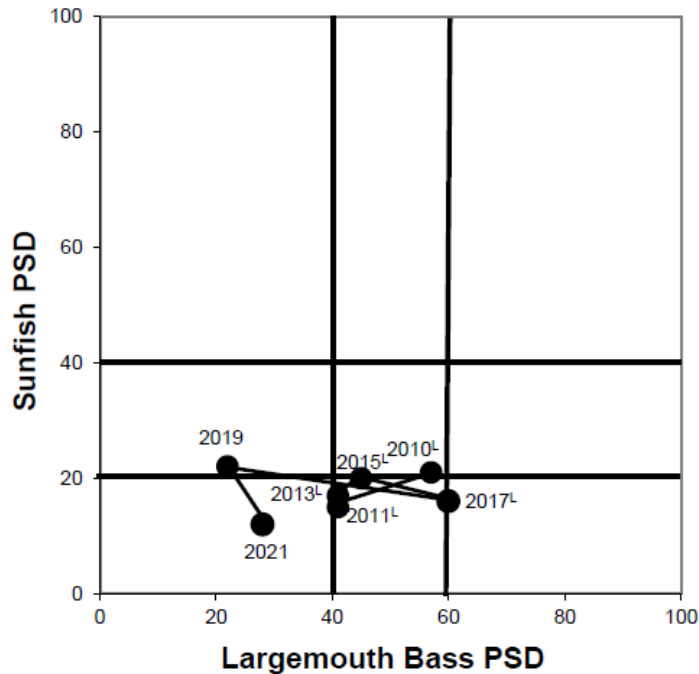


Figure 13. Proportional stock density (PSD) index for sunfish (weighted) and largemouth bass populations at Fisherman's Park Lake #3 from 2010-21. Superscripts denote occasions where sample size of either sunfish (^S) or largemouth bass (^L) was insufficient to estimate PSD with 90% confidence of being in one of three intervals (0-39, 40-60, 61-100).

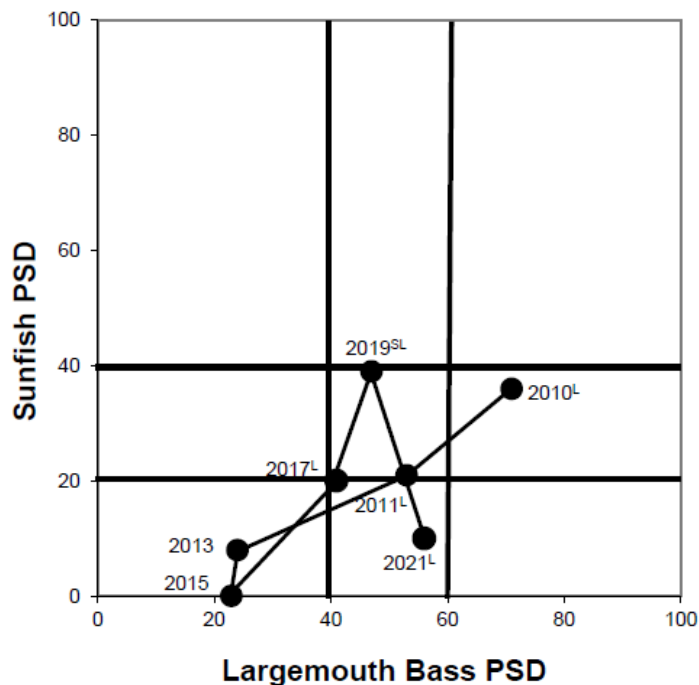


Figure 14. Proportional stock density (PSD) index for sunfish (weighted) and largemouth bass populations at Fisherman's Park Lake #4 from 2010-21. Superscripts denote occasions where sample size of either sunfish (^S) or largemouth bass (^L) was insufficient to estimate PSD with 90% confidence of being in one of three intervals (0-39, 40-60, 61-100).

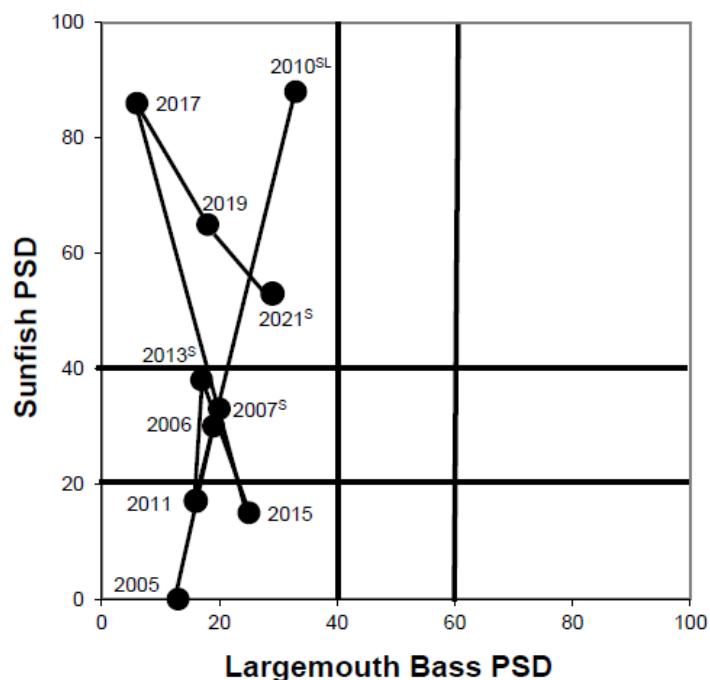


Figure 15. Proportional stock density (PSD) index for sunfish (weighted) and largemouth bass populations at Tom Wallace Park Lake from 2005-21. Superscripts denote occasions where sample size of either sunfish (^S) or largemouth bass (^L) was insufficient to estimate PSD with 90% confidence of being in one of three intervals (0-39, 40-60, 61-100).

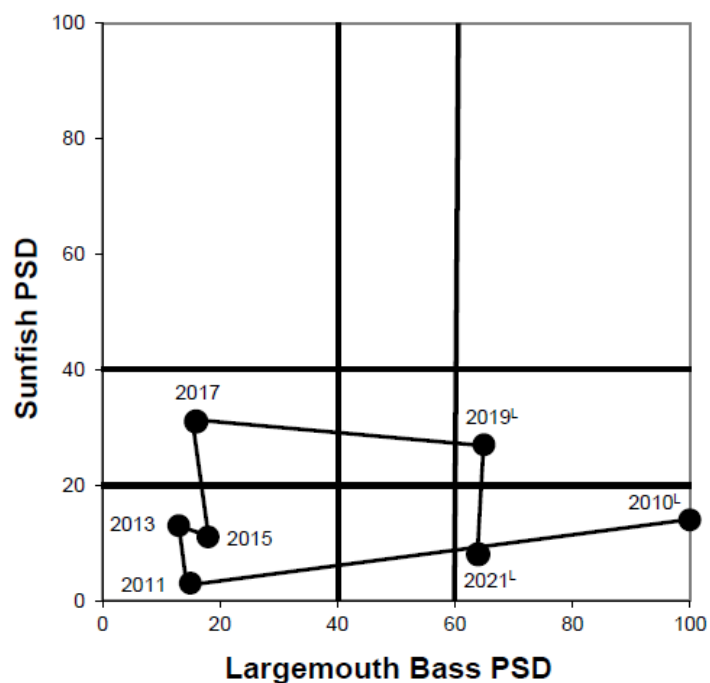


Figure 16. Proportional stock density (PSD) index for sunfish (weighted) and largemouth bass populations at Waverly Park Lake from 2010-21. Superscripts denote occasions where sample size of either sunfish (^S) or largemouth bass (^L) was insufficient to estimate PSD with 90% confidence of being in one of three intervals (0-39, 40-60, 61-100).

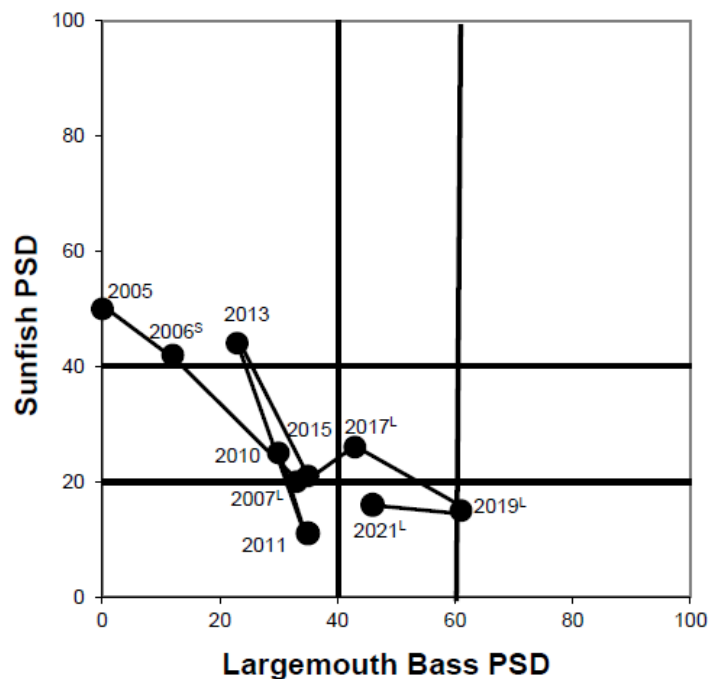


Figure 17. Proportional stock density (PSD) index for sunfish (weighted) and largemouth bass populations at William F. Miles Angler Lake from 2005-21. Superscripts denote occasions where sample size of either sunfish (^S) or largemouth bass (^L) was insufficient to estimate PSD with 90% confidence of being in one of three intervals (0-39, 40-60, 61-100).

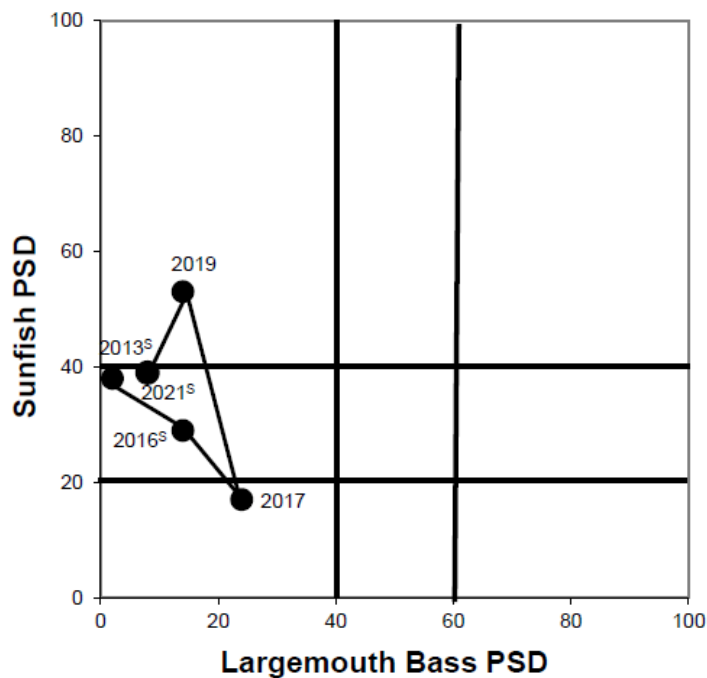


Figure 18. Proportional stock density (PSD) index for sunfish (weighted) and largemouth bass populations at William F. Miles Green Heron Lake from 2013-21. Superscripts denote occasions where sample size of either sunfish (^S) or largemouth bass (^L) was insufficient to estimate PSD with 90% confidence of being in one of three intervals (0-39, 40-60, 61-100).

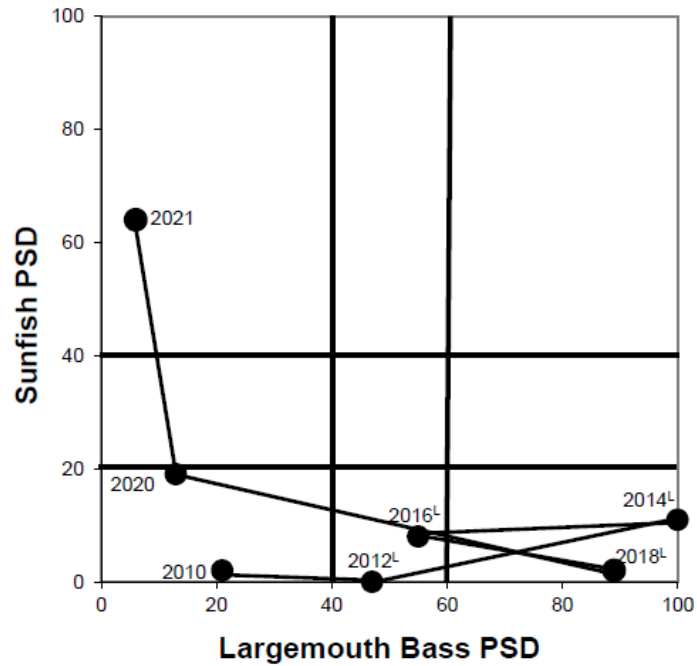


Figure 19. Proportional stock density (PSD) index for sunfish (weighted) and largemouth bass populations at Middleton Mills Long Pond from 2010-21. Superscripts denote occasions where sample size of either sunfish (^S) or largemouth bass (^L) was insufficient to estimate PSD with 90% confidence of being in one of three intervals (0-39, 40-60, 61-100).

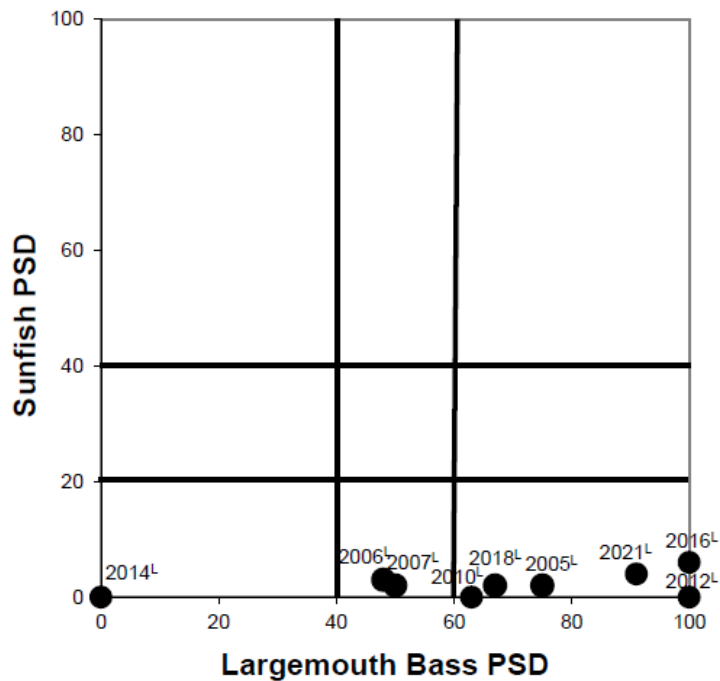


Figure 20. Proportional stock density (PSD) index for sunfish (weighted) and largemouth bass populations at Middleton Mills Shelterhouse Pond from 2005-21. Superscripts denote occasions where sample size of either sunfish (^S) or largemouth bass (^L) was insufficient to estimate PSD with 90% confidence of being in one of three intervals (0-39, 40-60, 61-100).

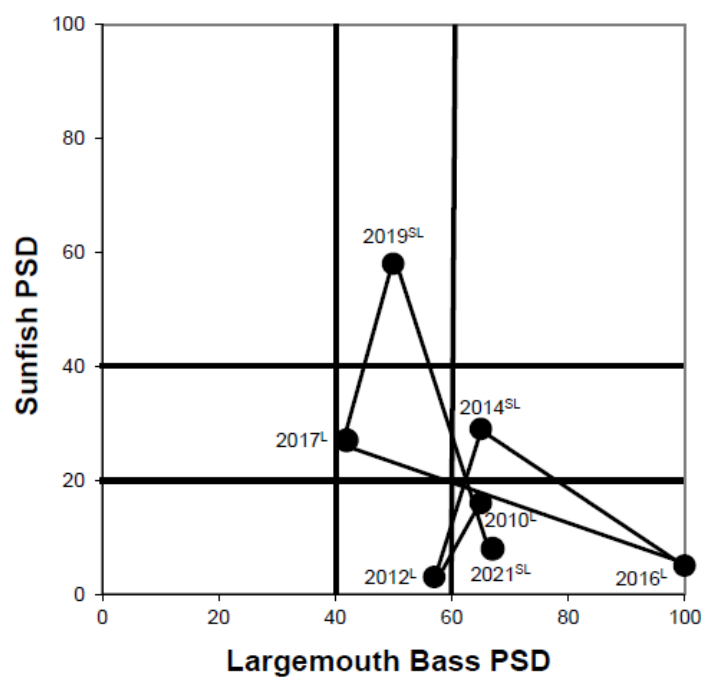


Figure 21. Proportional stock density (PSD) index for sunfish (weighted) and largemouth bass populations at Prisoners Lake from 2010-21. Superscripts denote occasions where sample size of either sunfish (^S) or largemouth bass (^L) was insufficient to estimate PSD with 90% confidence of being in one of three intervals (0-39, 40-60, 61-100).

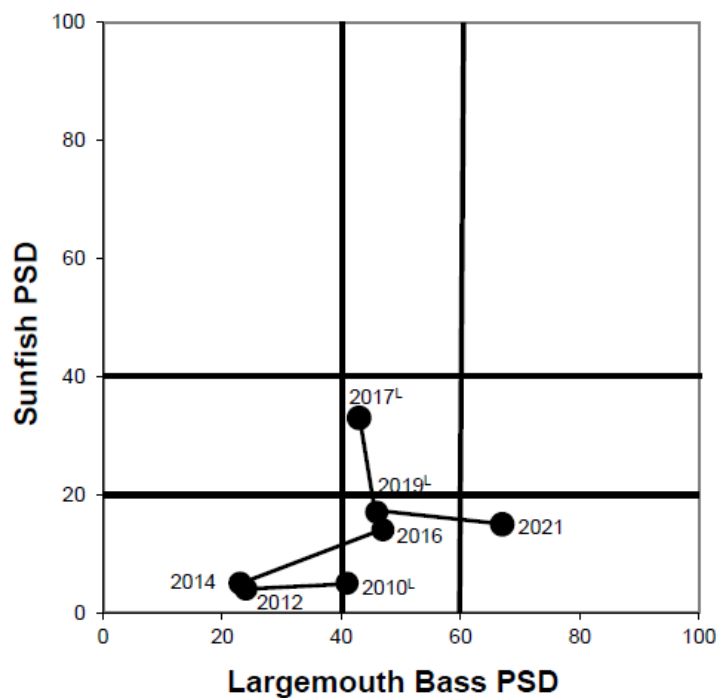


Figure 22. Proportional stock density (PSD) index for sunfish (weighted) and largemouth bass populations at Brickyard Pond from 2010-21. Superscripts denote occasions where sample size of either sunfish (^S) or largemouth bass (^L) was insufficient to estimate PSD with 90% confidence of being in one of three intervals (0-39, 40-60, 61-100).

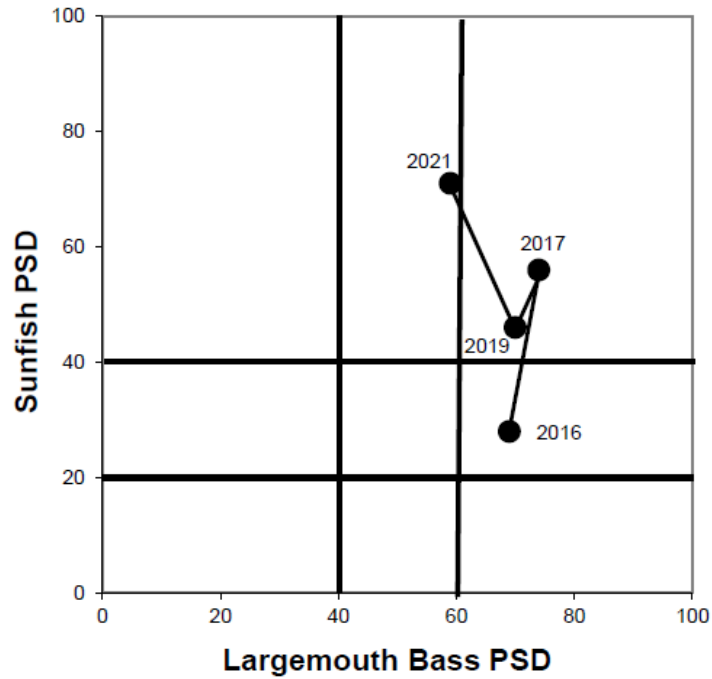


Figure 23. Proportional stock density (PSD) index for sunfish (weighted) and largemouth bass populations at Logan Hubble Park Lake from 2016-21.

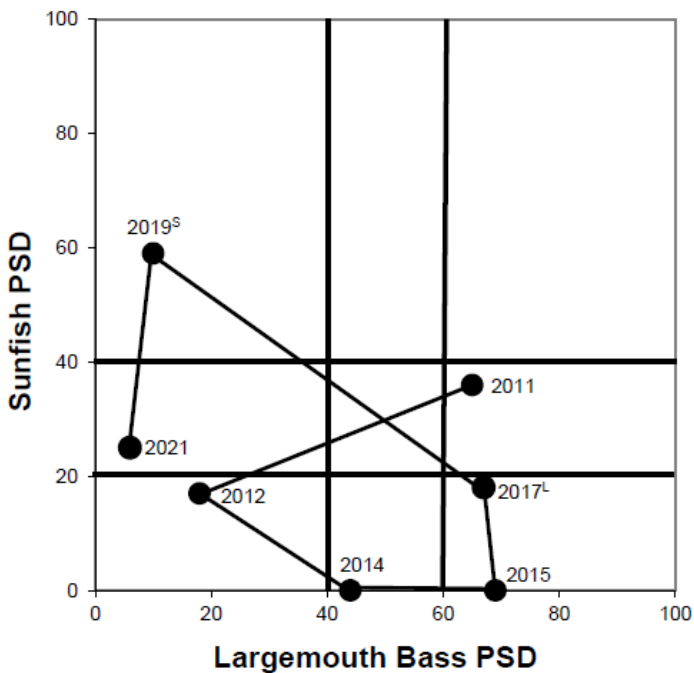


Figure 24. Proportional stock density (PSD) index for sunfish (weighted) and largemouth bass populations at Whitehall Park Lake from 2011-21. Superscripts denote occasions where sample size of either sunfish (^s) or largemouth bass (^L) was insufficient to estimate PSD with 90% confidence of being in one of three intervals (0-39, 40-60, 61-100).

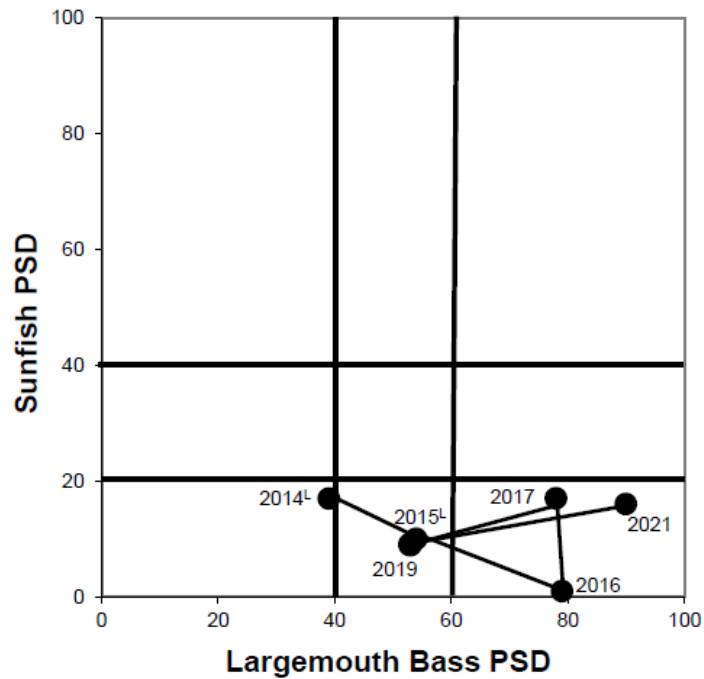


Figure 25. Proportional stock density (PSD) index for sunfish (weighted) and largemouth bass populations at Maysville-Mason County Recreation Park Lake from 2014-21. Superscripts denote occasions where sample size of either sunfish (^S) or largemouth bass (^L) was insufficient to estimate PSD with 90% confidence of being in one of three intervals (0-39, 40-60, 61-100).

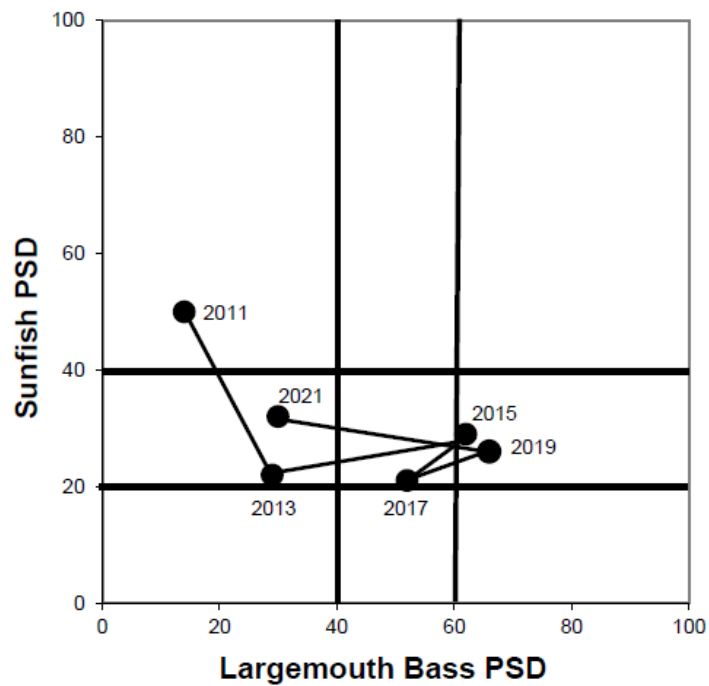


Figure 26. Proportional stock density (PSD) index for sunfish (weighted) and largemouth bass populations at Carlson Lake (Ft. Knox) from 2011-21.

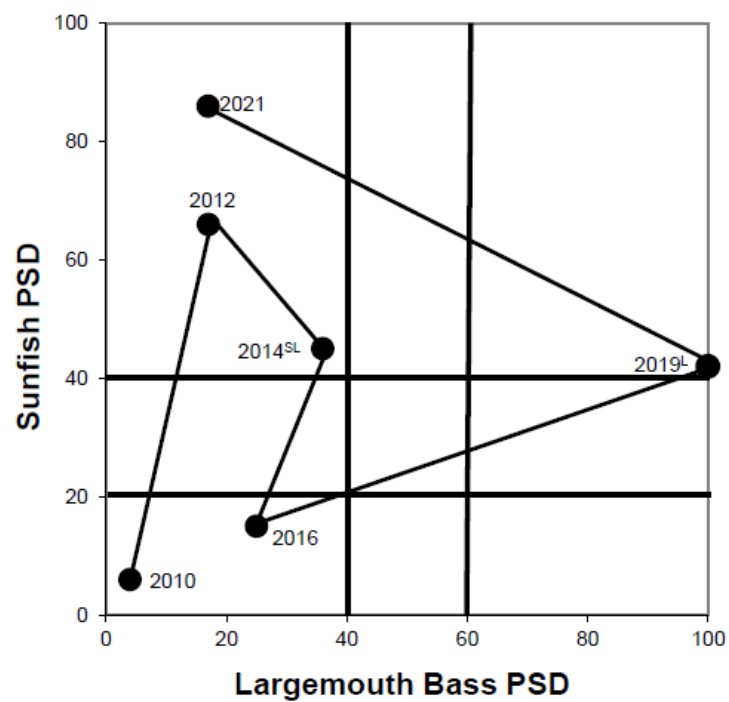


Figure 27. Proportional stock density (PSD) index for sunfish (weighted) and largemouth bass populations at Easy Walker Park Pond from 2010-21. Superscripts denote occasions where sample size of either sunfish (^S) or largemouth bass (^L) was insufficient to estimate PSD with 90% confidence of being in one of three intervals (0-39, 40-60, 61-100).

Project II: Evaluation of Angling Effort Using Remote Cameras

FINDINGS

The Fishing in Neighborhoods (FINs) program began in 2006 as a cooperative endeavor between Kentucky Department of Fish and Wildlife Resources (KDFWR) and local municipalities to provide access to quality fishing opportunities close to large populations of people. The FINs program currently includes 44 lakes in 28 counties across Kentucky. An angler attitude survey was conducted at 27 of the lakes in 2012. In addition, five creel surveys have been conducted at central Kentucky FINs lakes since 2010. However, little is known regarding angling effort at lakes where creel surveys have not been previously conducted. Fishing pressure was extremely high at creel surveyed lakes with total angler-hrs ranging from 11,000 – 66,000 hours per lake or 1,400 – 9,500 angler-hrs/acre. Angling effort is perceived to be high at most FINs lakes; however, quantifying effort using creel surveys is expensive and would be cost prohibitive to conduct at all FINs lakes. However, a new tool is available in the form of remote time-lapse cameras, which offer a cost-effective way to estimate angling effort. Using these remote, fixed position cameras it is possible to effectively monitor multiple lakes, capturing effort for a full 12-month period, while capturing daily and seasonal trends.

The FINs lakes are intensively stocked with large “keeper-sized” fish as a put-and-take fishery to sustain quality-fishing opportunities to a diverse group of anglers. To ensure anglers are utilizing these fish stockings, monitoring of angling effort is needed on a lake-by-lake basis as well as at a program scale. The additional knowledge of angling effort, in conjunction with exploitation studies and electrofishing and hoop net sampling, will assist in adaptively managing these fisheries. The angling effort data will aid in determining whether FINs lakes in other parts of the state are having similar angling pressure to previously surveyed FINs lakes in Central Kentucky. This data will also aid in assessing if current stocking strategies are adequate for the amount and timing of angling effort. If certain FINs lakes are not receiving the perceived pressure, then stocking rates could be reduced or other lake(s) substituted in the FINs program.

A total of 31 Reconyx Hyperfire HC500 cameras were purchased along with metal lock boxes. Cameras were purchased in January 2015 on price contract for \$435 each and lock boxes for \$45 each. Additionally, 62 4-GB SDHC cards were purchased for \$4 each for image storage and 540 rechargeable AA-batteries and 2 charging ports were purchased for \$823. Cameras require 12 AA-batteries to operate and rechargeable batteries should be much more cost efficient over the long term.

Prior to installing cameras, a letter was sent to lake owners explaining the purpose of the study and seeking the owner's permission to use cameras within their park. Most of the lakes in the FINs program are not owned by KDFWR, but all have a memorandum of understanding in place. An additional waiver, consent and release form was drafted by the KDFWR attorney and signed by lake owners prior to implementation. Cameras were installed in September 2017, with counts beginning 1 October 2017 and running through 30 September 2018 in most instances. Jacobson Park Lake was surveyed 1 November 2018 through 31 October 2019 due to a delay in getting permission from the City Council to install cameras. Cameras were checked every 6-8 weeks to exchange memory cards and batteries. Both primary and secondary FINs lakes were surveyed to get a range of angling effort (primary lakes are stocked four times annually with catfish, whereas secondary lakes are only stocked twice annually with catfish). The second round of the study included 16 lakes that range in size from 1-46 acres. Data collection for this second round of lakes is complete with analysis still ongoing. Cameras were installed in September 2019, with counts beginning 1 October 2019 and running through 30 September 2020 at the final eight lakes to be surveyed.

Camera lock boxes were mounted to a tree or utility pole with lag bolts about 10-20 ft above the ground. The camera sits inside the lock box and is secured with a lock on the outside. This lock box and height of the cameras should deter vandals. All cameras were mounted to cover maximum bank access, especially anticipated high use areas. Many lakes required multiple cameras to get adequate coverage of the bank access areas. Care was taken during placement that there was no overlap of camera images on lakes that required multiple cameras. This prevented anglers from being counted twice during

analysis. In one instance at Leary Lake, no trees or utility poles were available to get the optimal view of the lake. In this case, the camera was placed inside the lock box, welded to a metal sign post and placed out in the water. A wooden box was built around the camera and lock box to disguise it as a wood duck nesting box. There is no boating activity on this lake, so the cameras were only susceptible to vandalism during instances when the lake has ice cover. However, the metal poles were set at sufficient depths in the sediment that prevent someone from removing by hand.

The cameras did not cover 100% of the bank access at most lakes so a correction factor was employed to account for missed anglers and estimate total angler effort. Each survey lake was visited multiple times over the course of the study to do a visual count in-person at the same time as the remote cameras took a picture. A linear regression equation, $VC = a + b(CC)$, where the y-intercept was set to 0, was used to generate a correction factor. The dependent variable, Visual Count (VC), is the visual count taken in person at the same time the photo was recorded and the independent variable, Camera Count (CC), is the number of anglers observed on camera(s). Since the y-intercept (a) is equal to 0, the slope of the regression equation (b) is the correction factor. All correction factor linear regression equations were significant at $p < 0.001$ and had excellent coefficients of determination (r^2) in most cases (Table 1). Several lakes had insufficient visual counts to derive a correction factor. Collecting the in-person visual counts was especially challenging at lakes located out of the way and not near travel routes or work stations. Local park staff were contacted to assist with the visual counts in several instances. Even with ample explanation and follow up, the counts obtained by non-KDFWR staff were either lacking or suspect in some cases and thus excluded. Additional visual angler counts are needed in future camera surveys with the goal of a minimum of 30 counts and across the higher usage times to provide a more accurate correction factor.

Cameras were set up to take a picture every half-hour from daylight to dusk. Only images at the top of the hour were used for analysis; however, the half hour pictures helped postulate if someone was fishing as well as aided in the number of in-person visual counts that could be collected for the correction factor. Timelapse Image Analyzer was used to assist KDFWR personnel with image analysis. This free software designed by the University of Calgary speeds up image analysis and reduces errors, by automatically populating many of the fields needed for analysis and reduces data entry errors by placing the image and data entry on the same form. In a previous study, this software was found to cut image analysis time in half versus viewing images and entering data in separate spreadsheet. Cameras were collected after the 12-month period with one instance of vandalism at Logan Hubble Park Lake. The cameras and security box were missing upon retrieval in June 2018.