

**KENTUCKY
STATE REPORT**
May 2022

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Fisheries Division

Lake Sturgeon

In 2007 KDFWR began a project to restore lake sturgeon in the headwaters of Lake Cumberland. Prior to stockings in 2008, the last verification of a lake sturgeon in the Upper Cumberland River drainage was in 1954. With a partnership with the Wisconsin Department of Natural Resources, the department has successfully reared and stocked 12 year-classes of lake sturgeon. A total of 66,689 lake sturgeon have been stocked to date with each year class uniquely marked (utilizing a series of scute removal patterns) to provide data on year-class-specific survival, growth, and movement. In 2021, eggs were unavailable from the Wisconsin Department of Natural Resources, but fry were secured from Warm Springs National Fish Hatchery. The 2021 culture and stocking efforts were very successful with acceptance of 10,400 fry and stocking of 9,805 (6.5-inch average) fish.

Lake sturgeon sampling has been conducted annually using trotlines (250.0 ft long with 50 hooks baited with nightcrawlers) since 2014. Catch rates remained steady throughout the first seven years of sampling but increased to record highs in both the Cumberland River and Big South Fork sites. In the most recent sample, ten of twelve possible year classes were captured in the Cumberland River, while seven of twelve possible year classes were captured in the Big South Fork.

Mean fork-length at age of capture indicates that growth of stocked lake sturgeon appears to be good. On average, fish exceeded 20.0 inches by age-3, and were near 40.0 inches by age-10 to age-12. Mean fork-length at age of capture was consistently higher in Big South Fork. Reasons for differences in growth are not known but may be a result of lower relative abundance in the Big South Fork.

Asian Carp

Kentucky's Critical Species Branch continued its coordinated, multi-state effort on the Ohio River and in western Kentucky's Kentucky and Barkley lakes. The multi-agency efforts in the Ohio River at or above Louisville Kentucky employ several strategies against the carps. They include monitoring population demographics, examining the invasive fishes' use of tributaries and movements among pools, early detection in Ohio River pools in West Virginia and above, and removing all Asian carp collected in the Ohio River from the Cannelton Pool and above.

In Western Kentucky, staff continue to work to assess relative population sizes of bighead and silver carp in Kentucky Lake and Lake Barkley through gill netting, partnering with the

USFWS using electrified Paupier nets, and working with the USGS to assess the invasive carp population with fisheries dependent models. Kentucky continues to work with the commercial fishing industry targeting invasive carp to help processors and commercial fishers. In 2021 8.1 million pounds of invasive carp were harvest in Kentucky through the Asian Carp Harvest Program. Since 2013, over 26.6 million pounds of invasive carp have been harvested by commercial fishers in Kentucky.

KDFWR continued the Asian Carp Experimental Gear Master Agreement with two entities that are testing new methods for capturing invasive carp in Kentucky waters. The one active vendor harvested nearly 800,000 pounds of invasive carp. In 2021, KDFWR continued to support USGS staff with mass harvest and telemetry projects. In addition, studies associated with fish reaction to the Bio-Acoustic Fish Fence (BAFF) will continue through 2023. This effort is a partnership between the USFWS, USGS, KDFWR, USACE, and Fish Guidance Systems.

Lake Barkley Fish Habitat Project

Western District Fisheries staff partnered with the U.S. Army Corps of Engineers at Lake Barkley, the Kentucky B.A.S.S Nation, U. S. Forest Service, Tennessee Wildlife Resources Agency, Wired2Fish, Murray State University Bass Anglers, Kentucky BASS High School Trail West, McCracken County High School Bass team, Kentucky Bassmasters, Akridge Farm Supply as well as a variety of volunteers from other organizations, on a habitat improvement project for Lake Barkley. Funding was provided by the Reservoir Fisheries Habitat Partnership. Work in Kentucky included the placement of 1200 shoreline laydowns, 310 artificial bass spawning beds, 206 shallow water stake beds, 1000 cypress trees, and 32 deepwater brushpiles. The goal was to improve spawning habitat for bass populations and in total, a little over 11 miles of shoreline was improved with spawning habitat in the Kentucky portion of the reservoir. Additional work was led by TWRA in the Tennessee portion of the reservoir. All work was completed in 2021 or spring of 2022.

An additional grant partnership with the Kentucky Bass Nation and AFTCO allowed for an additional 350 cypress trees to be planted along the shoreline of Lake Barkley.

Information and Education Division (I&E)

Kentucky Afield Television

Kentucky Afield is the longest running outdoor show in the nation. This weekly television show is shot, edited, and produced by the Kentucky Department of Fish & Wildlife Resources. Online viewership of the show continues to increase. Total viewership since the department started posting the show on YouTube equals 87,572,674 views and has 148,000 subscribers. The Kentucky Afield Facebook page has 229,291 followers, Tok-tok has 98,200 followers and Instagram has 17,700 followers.

National Archery in the Schools Program

During the 2021-2022 instructional year, over 800 schools participated in Kentucky's National Archery in the Schools program. The school programs introduced approximately 150,000 students to archery during the school day as part of their curriculum.

The culminating event, the 2022 KyNASP® State Tournament, had 8,600 archers participating from 442 schools across the state. In addition to the state bullseye tournament, 1,700 student archers also participated in the 2022 KyNASP/IBO 3D Challenge State Tournament at the Exposition Center in Louisville, KY on March 11-12, 2022.

Recruitment, Retention and Reactivation Program

Employees of KDFWR can now participate in hunting, fishing, trapping and/or shooting while on the clock. The new Employee Mentor Program (EMP) allows each employee up to 15 hours of work time per fiscal year to participate in a program or mentorship! Staff can either (a) take someone (mentor) or (b) be taken (mentee) afield or on the water in this program. Mentees must be fishing or hunting participants who are either new or lapsed (lapsed for this program means someone who hasn't purchased a license in the last 3 years). Employees that are new to hunting or fishing (or lapsed), will have the opportunity to go afield with a mentor and/or attend a Learn-to-hunt and learn-to-fish courses are available from the department: these include Field to Fork and Hook and Cook.

KDFWR continued Virtual Hunter Ed range day submission (video submission of proctored live-fire exercise) created for hunter education students to complete their certification during the pandemic; over 2,600 students used this option. KDFWR created a Shooting Access Coordinator position which has been filled. The position will be located in the R3 branch. Our first project is to identify all ranges (public and private) in the state and provide the public with an interactive map of ranges. Hunter and Angler Retention: a squirrel hunting 101 email was sent out to new license buyers of 2020/2021 and hunters who lapsed in the past 3 years. A fishing update email was sent out to anglers who have lapsed in the past 5 years and anglers of 2020 who have not renewed in 2021.

Online Programming and In-Person Events continued in 2021 with a Field to Fork Dove webinar, Squirrel Hunting 101 webinar, Field to Fork Venison Preservation and Cooking with University of KY, Field to Fork Deer Process Demonstrations with University of KY, Teachers Tackle Box events, in-person Fall BOW Weekend, Beyond BOW Webinars, Hook and Cook webinars, and Field to Fork Mentor Crossbow hunts. Kentucky's 4th R3 Summit was held virtually. It created a more diverse collection of partners who were able to attend virtually than in years past when it was in person. Public Land Webinars Series- KDFWR partnered with Kentucky Fish and Wildlife Foundation to co-host webinars a three-part webinar series focused on public land hunting. Topics included how to plan and navigate a hunt with a topographic map, public land access in Kentucky, tips for hunting on public land and public land etiquette. Recorded webinars were also emailed out to elk hunter.

Conservation Education

Department of Fish & Wildlife educators delivered 5 different regularly scheduled programs both in person, virtually and pre-recorded to 4th, 5th, and 6th grade students across the commonwealth. The department's weeklong residential summer camps' capacity was reduced to 60% to provide a safe environment during the ongoing COVID pandemic, which resulted in 2,421 campers attending conservation camp. Of those campers, 2,389 successfully completed their Hunter Education certification requirements.

Marketing Division

In-Person Shows and Events are back!

The department returned to the Kentucky State Fair this past August with great fervor to unveil a fresh booth setup with the addition of revamped Law Enforcement section complete with a new ATV and life jacket loaner station. The pandemic did not slow the interaction and sales at the booth, as total revenue across license sales, prize wheel donations, Kentucky Wild memberships, and merchandise sales were up. Customers were happy to purchase newly branded merchandise including stickers, hats, and dry bags, with the “Reel World” logo and Kentucky Wild branded items. Staff from across the department were able to work to share their passion and knowledge with guests of all ages and backgrounds from across the Commonwealth.

The department also was able to attend 3 various shows across the state in January to promote the sale of hunting and fishing license along with Kentucky Wild memberships and to get customers to enter the Kentucky Elk Hunt Drawing. New this year, was the promotion of the *Hunt Starts Here* - bringing recognition to the 25th Anniversary Celebration of the Reintroduction of Elk to Kentucky (begun in 1997).

Department-level Social Media - continued growth

- Facebook: 200,256 followers
- Instagram: 20,200 followers
- Twitter: 11,800 followers
- YouTube: 4,420 agency subscribers; >200,000 Kentucky Afield TV - subscribers

Kentucky Wild Memberships

The Kentucky Wild program, garnering funding for wildlife diversity conservation in Kentucky through memberships and sponsorships, currently has about 4,000 active members representing all 50 states. All time total members have surpassed 10,000 and have voluntarily contributed more than \$400,000 toward research and restoration of species of greatest conservation need. The rapid growth of the program continues to be fueled by the addition of new members and has resonated deeply not only with Kentuckians, but across the country.

Wildlife Division

Deer and Elk Program

Overall, the statewide deer population estimate (standing crop in August 2021) shows a stable to slightly decreasing trend. The 2021 statewide estimate was 919,308 deer at the start of the 2021-22 hunting season, which is 1% decrease from 2020-21 (933,089). However, the 2021 population estimate was less than 1% below the 10-year average (919,346). This population estimate is generated from harvest and age structure data, which is collected through tele-check reports and by KDFWR staff.

The total number of deer harvested during the 2021-22 deer season was 132,328, which is the ninth highest harvest on record. We observed a 6.6% decrease from the 2020-21 season

(141,620) and the 2021-22 season was 5.6% below the 10-year average (140,129). The 2021-22 deer season experienced highs and lows like many deer seasons do. However, during the months of October and December we observed several days of warmer than normal weather with some extreme weather events which contributed to low harvest during those months. Conversely, January saw the highest harvest on record (3,788).

Despite a statewide bag limit that allows hunters to shoot more than one deer per year statewide, there appears to be a limit on the number of deer that hunters are willing, or able to harvest, as 76.8% (76,056) of all successful hunters only harvest one deer. A smaller percentage of successful hunters (23.2%) harvested two or more deer. Of the 99,032 total successful hunters in the 2021-22 season, the average hunter harvested 1.34 deer, which was a slight increase from last season. However, this rate usually does not fluctuate statewide between years and has remained stable over time.

For the 2021 elk season, Kentucky offered 594 permits through the drawing process and 42 more through landowner permit programs, resulting in 248 elk harvested. The overall harvest/success rate was 45%, slightly lower than the 47% observed in 2020. In the third year of our elk calf survival project with the University of Kentucky, over 220 elk have been captured to date with 93 vaginal implant transmitters deployed in pregnant adult cows. These transmitters are used to study calving sites and calf survival. These survival metrics will allow researchers to better inform our statistical population reconstruction model to manage elk into the future. Results of this three-year project will be available in late 2022.

One of the goals set forth in the KDFWR 2030 Elk Management Plan is to improve habitat in the elk zone. The decrease in surface mine activity in the elk zone has led to the loss of early successional habitat and the increase of non-native species like *Elaeagnus umbellata* (Autumn olive). To increase early successional habitat, the elk program staff has been utilizing prescribed fire. Since 2018, 2767 acres have been burned. In 2021, KDFWR identified the elk management zone as an area of special interest and started the Eastern KY habitat initiative with the goal of burning 2000 acres each year. Although that number was not met this year, KDFWR identified new properties to work on and outlined some key hurdles to address moving forward while using prescribed fire on 1,115 acres in winter 2022. As a Wildlife Division priority, Elk Program staff have enlisted other certified prescribed burn bosses and burn crews from across the state to meet this goal in the future.

Bear Program

For the 2021 Kentucky bear season, the total harvest came in at 109. This fall's harvest represented the highest on record, but still well within our established sideboards for a sustainable harvest. From these 109 bears, we observed a 33% female harvest rate (36F / 73M). The female harvest rate has declined steadily over the last five years. From the three season segments (archery/crossbow, bear hunt with dogs, and modern firearm) archery/crossbow hunters harvested 38%, dog hunters harvested 30.4% and modern gun hunters harvested 30.4% of the total harvest of 109 bears.

The Wildlife Health Program

The Wildlife Health Program received thousands of reports of wildlife issues in 2021 from various stakeholder groups including hunters, wildlife enthusiasts, and field staff.

- The majority of reports were from a mortality and morbidity event in songbirds. The cause of this event remains unknown. Multiple states reported similar mortality and morbidity in the same species: blue jays, robins, and European starlings. In Kentucky six counties were considered affected and had reports which meant the case definition.
- In September of 2021, KDFWR initiated the CWD Response Plan as a result of a detection in Tennessee that was within 10 miles of Kentucky border. Over 7,500 samples were tested statewide and the prion that causes CWD was not detected. Location data using a one square mile grid was collected on the approximately 4,300 samples from the surveillance zone. Mandatory check stations were implemented for both early muzzleloader and modern gun seasons.
- In December of 2021, Rabbit Hemorrhagic Disease Virus (RHDV-2) was detected in domestic rabbits in Jefferson Co. KY. The KY Department of Ag does not regulate domestic rabbits, so no quarantine of the facility was possible. USDA Veterinary Services completed an epidemiological investigation but was unable to determine the route of exposure. KDFWR increased surveillance in wild rabbits within a 5-mile buffer of the confirmed positive.
- In response to recent evidence suggesting the widespread exposure of white-tailed deer to SARS-CoV-2, KDFWR developed hunter guidance for handling and field dressing deer. Additionally, KDFWR has been collaborating with USDA to collect samples from white-tailed deer. A total of 117 swabs have been collected of which 79 have been tested. There have been 8 presumptive positives based on PCR from 4 counties, however, only two samples from Christian County have been confirmed positive by NVSL.
- Kentucky initiated a statewide tick surveillance program in 2015 in partnership with SCWDS in response to the expansion of several tick vector species into Kentucky. Additionally, KDFWR has partnered with the KY Department of Public Health to continue long-term surveillance of tick populations in Kentucky. In the summer of 2021, two ticks were collected from elk calves in Perry and Breathitt County. To date, wildlife with Asian Longhorned ticks have been found in four counties, two additional counties in central KY had domestic cattle cases, and one county had a report from a human. No pathogens have been detected with HL tick samples from KY.
- The Wildlife Health Program is actively investigating the impact lymphoproliferative disease virus (LPDV) and reticuloendotheliosis virus (REV) may be having on turkey populations.
- Wildlife Health Program is working to develop a reference range for elk in Eastern Kentucky. In 2020 and 2021, the Wildlife Health Program requested liver samples from hunter-harvested animals, collected liver samples on all elk mortality investigations, and serum from live animals captured for a cow-calf survival study for the past two years.

- The Wildlife Health Program received over 100 wildlife submissions for mortality investigations and diagnostic evaluation at the Southeastern Cooperative Wildlife Disease Study (SCWDS) laboratory.

Small Game

The Small Game Program continues to focus the majority of its effort on northern bobwhite restoration. The program recently completed its 10-year bobwhite restoration plan, *Road to Recovery*. The results of the plan lay plain the successes and failures of Kentucky's momentous restoration effort. In the end bobwhite increased on areas in which we practiced high intensity management; however we were not able to change enough of the landscape in Kentucky to illicit a statewide population response. Moving forward beyond 2020 the small game program plans to take what we have learned from the plan and work more in production private lands in the Commonwealth. The program also continues to support 3 National Quail Focus Areas in Livingston and Muhlenberg counties. The program is also monitoring the RHDV2 outbreak, with a case detected in central KY in domestic rabbits in the winter of 2021.

Private Lands Program

KDFWR's private lands program has 17 Farm Bill biologists currently on staff that work with Natural Resources Conservation Service and the Farm Service Agency intensively to help administer Farm Bill Programs such as Environmental Quality Incentive Program (EQIP), Conservation Reserve Program (CRP), and Wetland Reserve Easement (WRE). Over the past year our biologists have complete 827 technical guidance visits and have helped KY landowners take advantage of \$1.72 million for habitat management through the EQIP program. We also have three Focus Conservation Projects with WLFW-Bobwhite that we are preparing to kickoff late summer. Each project will focus on a different type of land use: row crop, grazing, and timber management.

Prescribed Fire

Over the past year the agency has been able to complete 85 prescribe fires for a total of 5,489 acres across the state. Part of this effort included the kickoff of our East Kentucky Habitat Initiative. The main goal for this project is to utilize prescribed fire to help maintain grassland habitat, which is predominantly associated with reclaimed coals in the portion of the state. For multiply reasons prescribed fire in eastern Kentucky has always presented challenges for agency. So, for the first year the main goal was to determine the hurdles we needed to remove to effectively get prescribe fire on the landscape. We not only identified the hurdles, but we were also able to remove some of them to complete 11 units for 1,026 acres.

Non-Game/Endangered Species

Staff continue to address species-at-risk needs by identifying and prioritizing status assessments, surveys and management opportunities. Currently, we are continuing work on over 90 federally listed species, candidate species, species proposed for listing, or species petitioned

for listing. Emerging issues including snake fungus, Bsal, and continued work on white-nose syndrome (WNS). Substantial progress is being made in the freshwater mollusk field at the Agency's Center for Mollusk Conservation. *In vitro* fertilization techniques have proved very successful in over 30 species to date and critical success has been confirmed in the purple catspaw with over 19,000 juveniles now in our grow out facility. Hellbender research is showing promise with the first release of captive individuals raised from eggs collected in 2018 this summer. At-risk pollinator species are a focus of management; staff are engaging partners to implement the state's Monarch Conservation Plan.

Public Lands/ Wildlife Management Areas

WMA categories has been approved by our commission. WMA's will be categorized into High, Moderate, or Low levels of management. High management areas being staffed and intensively managed while Low will be areas with staff some distance away that will receive the minimum in the way of management but are still available to hunting, hiking, wildlife watching, etc. Ideally, this approach will give area users a better idea of what to expect on areas when visiting or planning a trip and will also help focus our staff, budget and sometimes commission to prioritize efforts on Highly managed areas. Staff are in process of finalizing the roll out, advertise and market this approach on the areas this Fall.