

2022-2023 Squirrel Report

Kentucky Department of Fish and Wildlife Resources



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Introduction

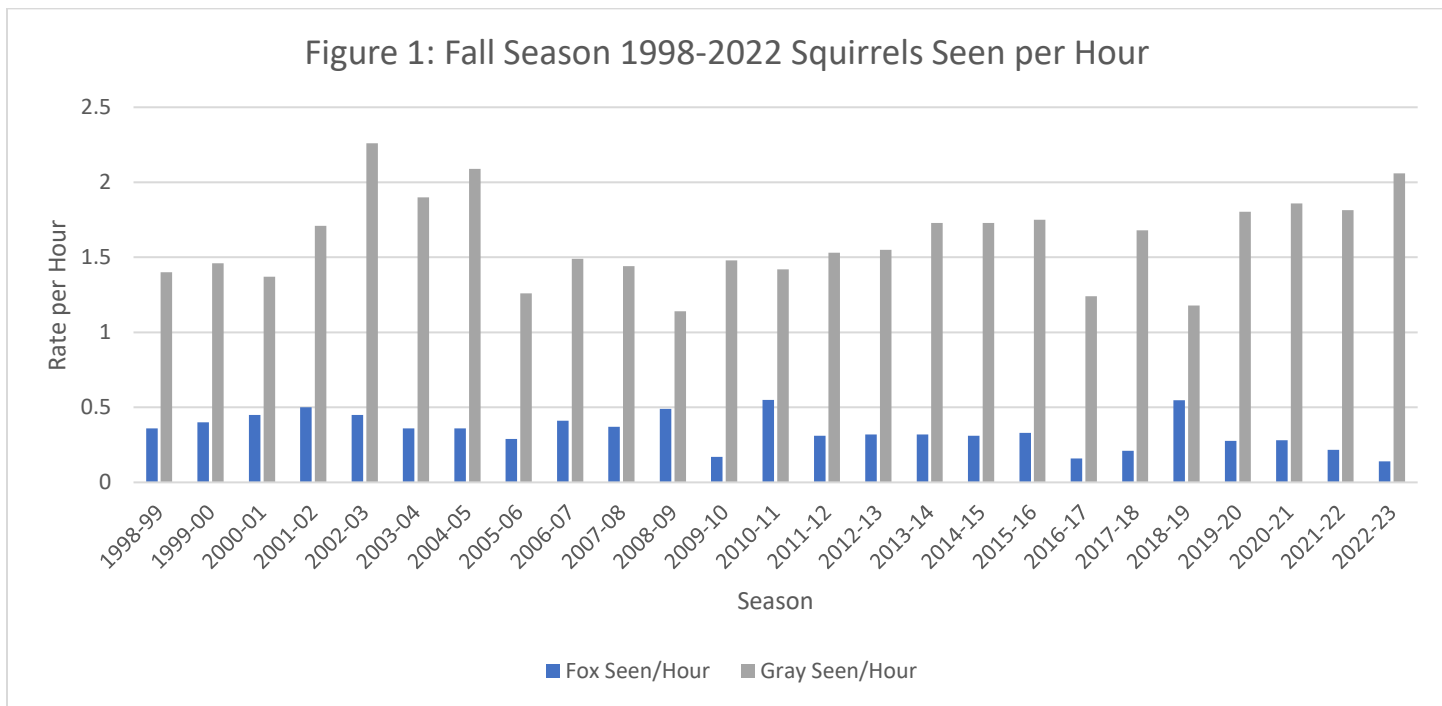
The Small Game Program is administered under the Wildlife Division of Kentucky Department of Fish and Wildlife Resources (KDFWR). The KDFWR is an agency of the Kentucky Tourism, Arts & Heritage Cabinet. A nine-member commission who are nominated by Kentucky’s sportsmen and sportswomen oversees it. The Governor appoints commission members. The department employs about 450 full-time staff, which includes conservation officers, wildlife and fisheries biologists, conservation educators, and information and technology, public relations, customer service, and administrative professionals.

KDFWR receives no money from the state’s General Fund. Funding is provided by the sale of hunting and fishing licenses, boating registration fees and federal funds, including grants based on the number of hunting and fishing licenses sold in the state.

The Small Game Program is tasked with managing squirrels (fox and gray), rabbits (swamp, eastern cottontail, and Appalachian cottontail), and northern bobwhite in the state to provide ample hunting opportunity while balancing the needs of consumptive and non-consumptive user groups. The Small Game Program is led by Cody M. Rhoden, Program Coordinator and supported by Chelcee Hendren, Small Game Program technician. Program staff are based out of the KDFWR Headquarters in Frankfort.

Population Status

The squirrel population in Kentucky is indexed as squirrels seen per hour afield hunting. These data are generated from hunter cooperator logs. The squirrel population in Kentucky appears to ebb and flow in roughly 7-year cycles. Hunting season 2016 was a low point in this cycle, with the most recent hunting season (2022) remaining consistently higher than the 2020 and 2021 seasons (Figure 1).



2022-2023 Squirrel Hunter Cooperator Survey

The squirrel survey was developed in 1995 as a voluntary initiative. Hunters are asked to record data including date of hunt, county hunted, hours hunted, number of hunters, number of dogs, and number of fox and gray squirrels (seen, killed, and wounded), on a diary-type hunting log. Logs are available on the internet: <http://fw.ky.gov/Hunt/Pages/Game-Species.aspx> or by calling 1-800-858-1549. Hunters simply keep the log up to date as the hunting season progresses and mail it to the KDFWR Headquarters when they are finished hunting for the season. Data collected from the survey gives the KDFWR information that can be used to monitor squirrel population trends in Kentucky and better serve the hunters of the state. Each year, participating hunter cooperators are mailed a new hunting log, the results of the survey, and a small gift. Hunters who wish to receive a copy of their log from the previous year may call 502-892-4521 or e-mail cody.rhoden@ky.gov.

Past Squirrel Hunter Cooperator Surveys

Participation has been decreasing over the last several years, with a sharp decline in the 2016 hunting season (Table 1). The below map shows the number of hunts per county in the 2022 season (Figure 2). If you hunt any of the red counties, please consider filling out a hunting log this year (even if you do not harvest any game). Once again, do not forget to mail in your log and encourage other squirrel hunters to do the same. Why not take someone new hunting this year? The future of hunting depends on it!

Figure 2: Hunter cooperator logs reporting hunts from each county in Kentucky. Warmer equal less hunts per county and cooler colors equal more hunts per county.

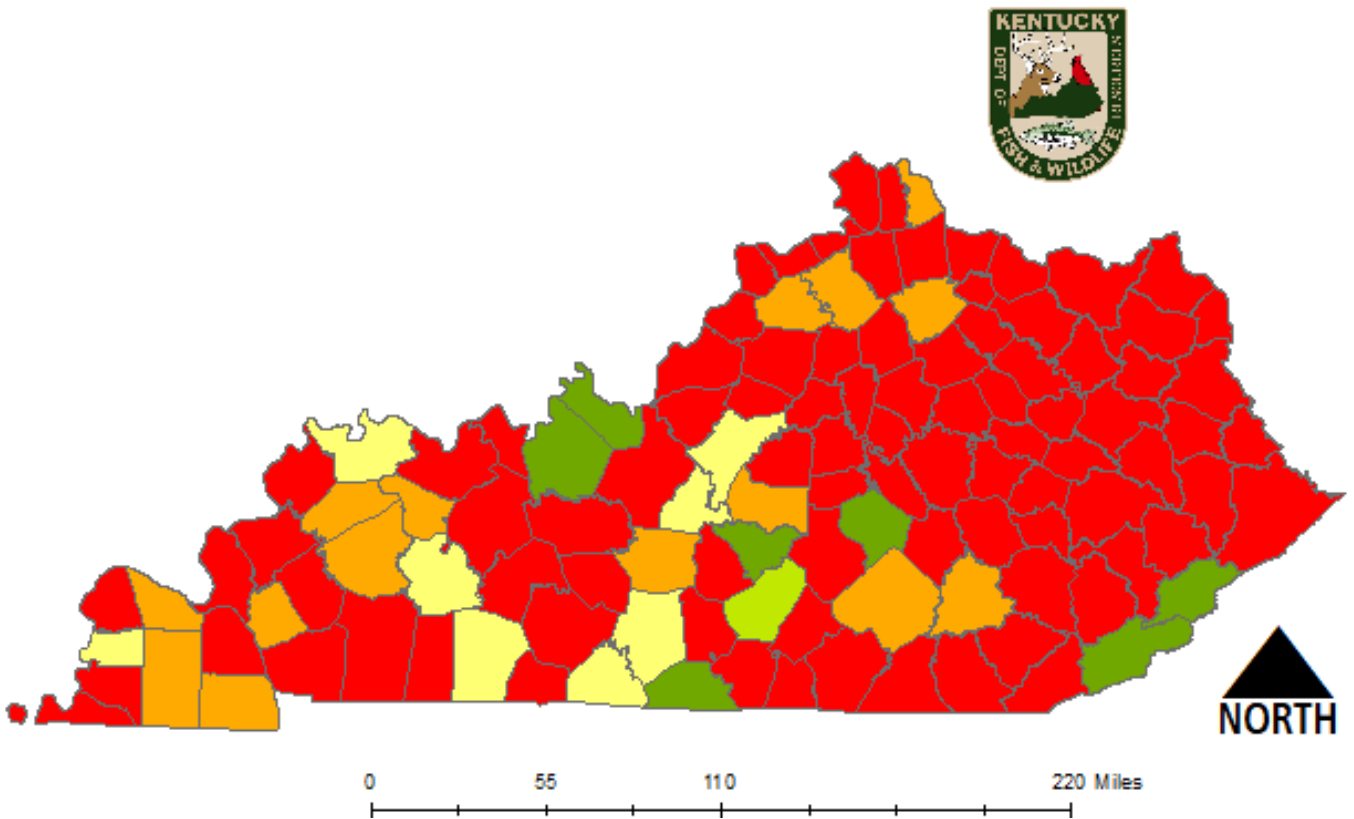


Table 1: Hunting statistics from past hunter cooperator surveys in Kentucky from the 2015 hunting season to present.

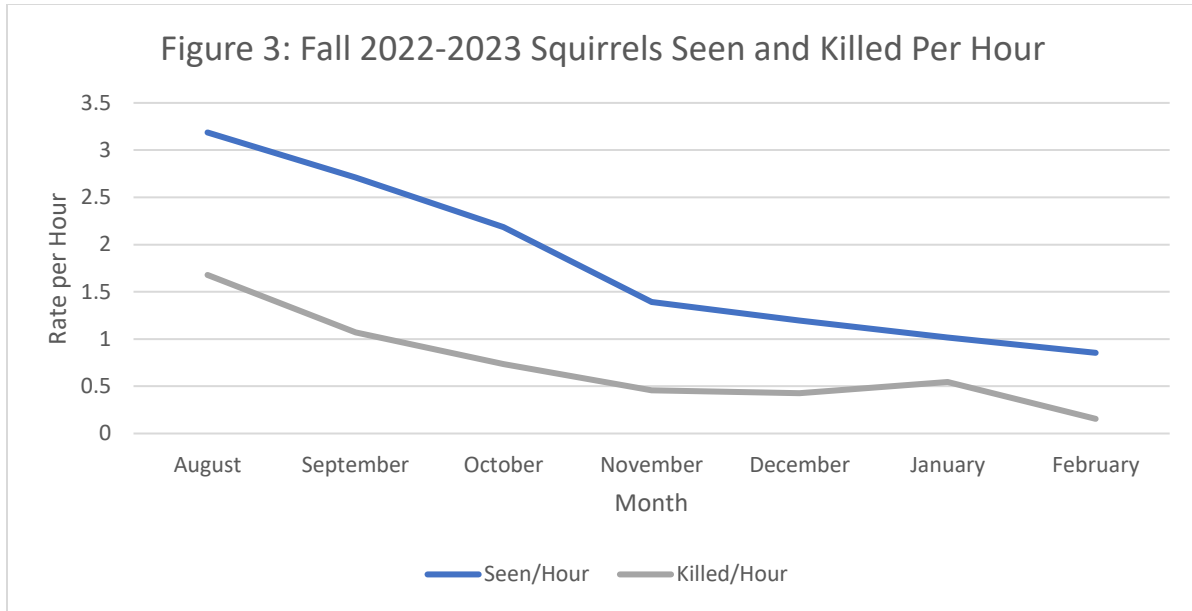
STATISTICS	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
<i>Total cooperators</i>	81	59	65	76	58	41	36	23
<i>Total hunts</i>	1101	646	762	910	679	472	391	331
<i>Total counties</i>	70	65	60	68	63	59	41	31
<i>Average hunts/cooperator</i>	13.6	10.9	11.7	13.4	10.8	11.5	10.9	10.7
<i>Total hours</i>	3017	1847	1957	2478	1756	1183	902	832
<i>Hunts using dogs (%)</i>	24.3	20.7	16.8	36.3	28.7	24.7	28.6	15.4
<i>Total fox squirrels seen</i>	994	288	405	1373	408	327	195	114
<i>Total fox squirrels killed</i>	492	152	214	480	242	180	117	60
<i>Total fox squirrels wounded</i>	23	7	11	34	15	12	7	3
<i>Total gray squirrels seen</i>	5275	2286	3206	2914	3351	2202	1637	1715
<i>Total gray squirrels killed</i>	2654	1066	1440	1319	1444	1002	721	695
<i>Total gray squirrels wounded</i>	156	64	81	87	94	56	42	58
<i>Harvest of squirrels seen (%)</i>	50.2	47.3	45.8	42	44.9	46.7	45.7	44.6
<i>Squirrels wounded (%)</i>	2.9	2.75	2.55	2.82	2.9	2.7	2.9	3.3
<i>Hunting mortality (%)</i>	53.1	50.1	48.4	44.8	47.8	49.4	48.6	47.9

2022-23 Hunter Cooperator Results

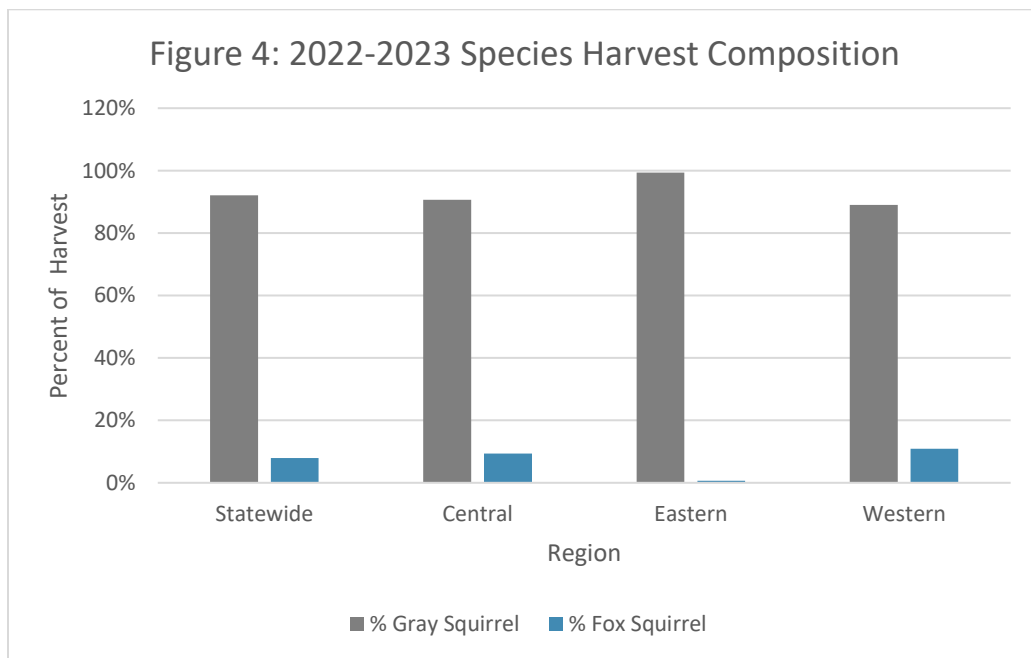
Logs were received from 23 squirrel hunters following the 2021 hunting season (a 36% decrease from the 2021 season). Hunters averaged 10.7 hunting trips throughout the season. Fifteen percent of squirrel hunters used dogs in their pursuit. Data were provided from 331 hunts from 31 counties, with good distribution across the Commonwealth (Figure 2). Hunters saw an average of 5 squirrels per **hunt** and an average of 2 squirrels per **hour**.

Harvest Statistics 2022-23

Hunters saw an average of 0.3 fox squirrels and 5.2 gray squirrels per **hunt** and harvested 0.2 fox squirrels and 2 gray squirrels per **hunt**. Hunters saw an average of 0.14 fox squirrels and 2.1 gray squirrels per **hour** hunted and harvested 0.07 fox squirrels and 0.8 gray squirrels per **hour** hunted. The number of squirrels **seen** per hour peaked in August (Figure 3). The number of squirrels **harvested** per hour peaked in August (Figure 3).



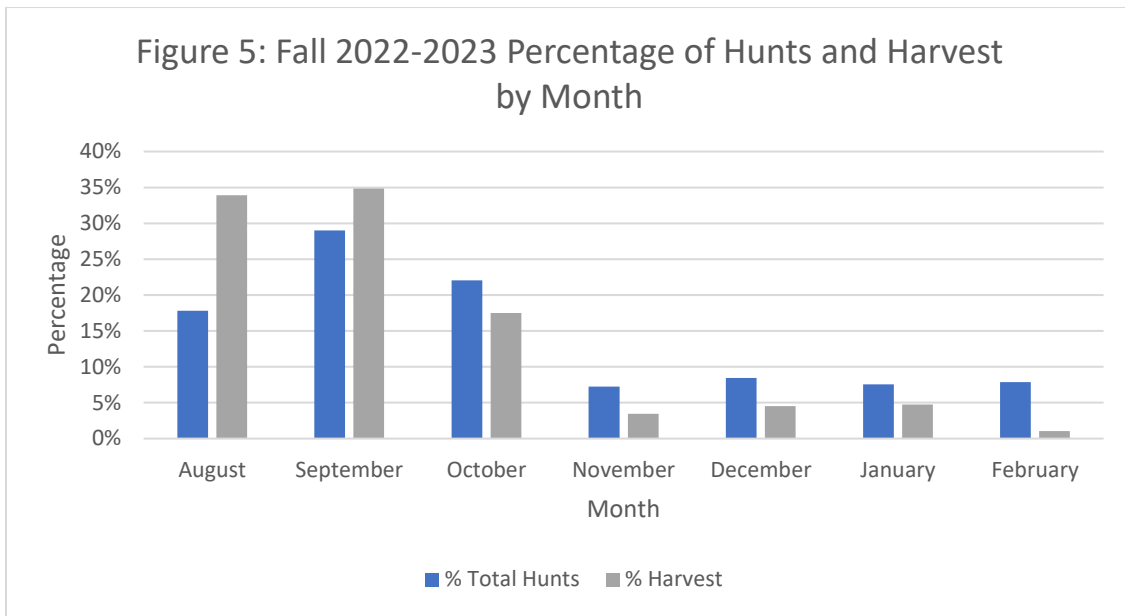
Hunters harvested 45% of squirrels seen and wounded 3%. Assuming wounded squirrels did not survive, the hunting mortality rate was 48% of squirrels seen in 2022-23. Statewide, 92% of the harvest was composed of gray squirrels (Figure 4). This rate suggests Kentucky squirrel hunters prefer hunting in more extensive forests and woodlands, as gray squirrels frequent this habitat, as opposed to fox squirrels which are found in more edge habitats such as small woodlands and fencerows. It also demonstrates gray squirrels are more abundant in Kentucky than fox squirrels. Interestingly, last hunting season the rate of fox squirrels seen and killed was lower than the last two seasons- and much lower than the 5-year average (Figure 1).



Hunter Effort

Hunting effort was greater towards the beginning of squirrel season. Sixty-nine percent of the hunts took place in August to October (Figure 5).

The hunter effort index declined as the season progressed, and squirrel-hunting trips were rare in November and January. Interestingly we did not see an uptick later in the season last year. In past seasons there has been a slight uptick after modern gun season for deer, this season we did not observe an uptick. Squirrel hunting is one of a few seasons open in August and September, and later season opening dates for deer, waterfowl, rabbit, grouse, and quail may account for the greater hunting effort taking place towards the beginning of squirrel season. Hunting pressure showed a decline in November, likely due to the opening of deer firearm season.



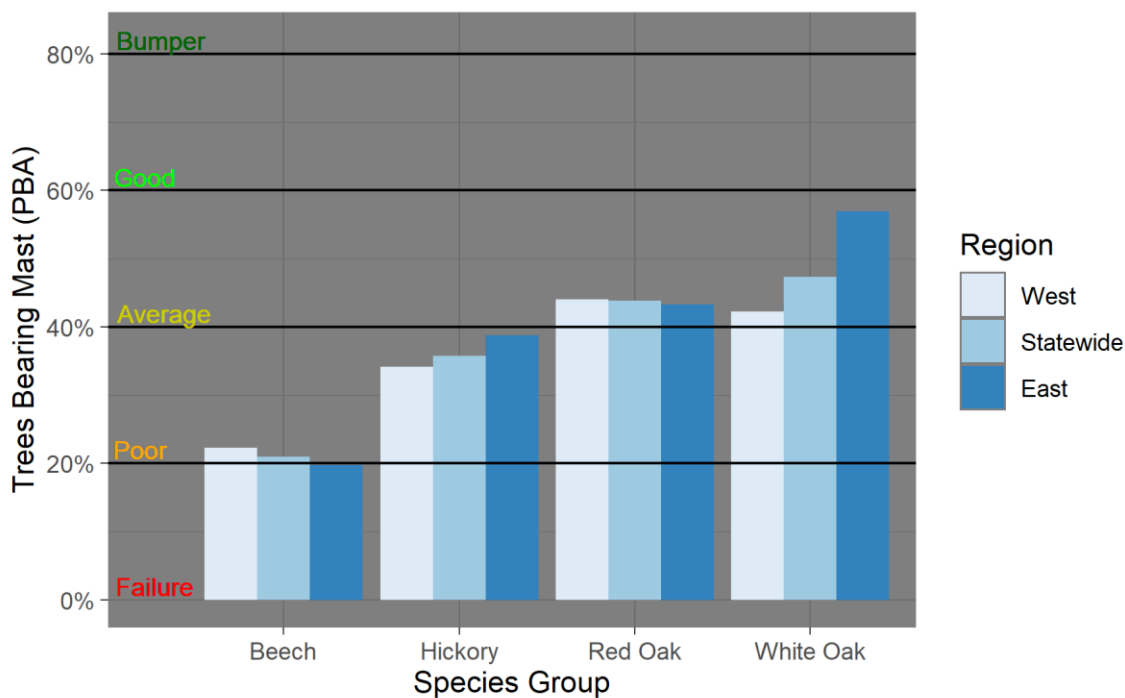
Mast Survey

A statewide mast production survey of Kentucky's most important producers of wildlife foods was initiated in 1953 and has been conducted annually thereafter. A close relationship has been found between a given year's mast production and the following year's squirrel population level statewide. The mast survey looks at the 3 primary mast producing tree groups (hickories, red oaks, and white oaks) with American beech being the only individual species surveyed.

Figure 6 shows the proportion of trees bearing acorns (PBA) or other mast across Kentucky. As an example, 57% listed in the white oak (East) column means that for every white oak tree surveyed in Kentucky in 2022, an average of 57% of those trees contained acorns. Statewide, mast production in 2022 was at average or below average for our surveyed species. In all regions, red oak and white oak mast production was average in 2022.

The relatively high amounts of food in the forests in the fall usually results in a lower squirrel harvest in the following season. As more mast is locally available, fewer squirrels are moving around to find food resulting in a reduced chance for hunters to encounter them. The reduction in available mast in 2022 compared to 2021 could have helped contribute to the increase in squirrels seen in the 2022 season especially gray squirrels who frequent dense forest more than fox squirrels. The Mast Survey for 2023 will be conducted in August 2023 with results posted on the KDFWR website and made available upon request.

Figure 6: Percentage of trees bearing mast (PBA), 2022. This bar plot shows the distribution of PBA values when sampled trees are grouped by species group and survey region. PBA is presence or absence of mast derived from estimates of the percentage of each tree crown area bearing mast (PCA).



Disease Surveillance

The KDFWR handles disease outbreaks for wildlife across the Commonwealth. There are currently no known disease issues for squirrels in the state. Disease is a natural component of all healthy ecosystems. Some common disease issues that could threaten squirrels in Kentucky are tularemia, mange, or squirrel pox. The Small Game Program did not test any animals for disease in the 2022 season.

Protecting yourself and your pets from diseases such as this includes wearing long pants and sleeves, utilizing bug repellent on clothes (permethrin) and exposed skin (DEET), treating pets with flea and tick control medication, and wearing gloves when processing game. Generally speaking, it is very rare for sportspeople to contract the common diseases of any given wildlife; however, utilizing some of the practices listed above may decrease your risk while afield this year.

The Kentucky Department of Fish and Wildlife Resources encourages hunters who encounter wildlife acting strangely or that look sick to contact Cody Rhoden at cody.rhoden@ky.gov or 502-892-4521.

General Information about the 2023-24 Season

License and Permit Fees

License	Resident	Nonresident
Annual Hunting License	\$27	\$150
Senior/Disabled License	\$12	N/A
Sportsman's License	\$95	N/A
Youth Sportsman's License	\$30	N/A
Annual Trapping License	\$20	\$130
Annual Youth Trapping	\$5	N/A

Season Dates and Bag Limits

Season	Statewide Season Dates	Statewide Bag Limit
Fall Season	August 19 – November 10 and November 13, 2023 – February 29, 2024	6
Spring Season	May 18 – June 21, 2024	6
Trapping Season	November 13, 2023 – February 29, 2024	6

Outlook for the 2023-2024 Squirrel Season

Last year, hunters saw an average of 2.2 squirrels per hour. This was more than the previous season of 2.03 squirrels seen per hour. This may be due to the lower level of available mast in the forest in the fall of 2022. As the amount of mast in the forest goes down, squirrels must move more to find available food which increases their chances of being seen by sportspeople. We saw a variety of temperatures and precipitation through the winter, but we expect to see a good year in the 2023-24 hunting season.

Don't forget to turn in your Hunter Cooperator log at the completion of this year's hunt. Logs should be returned no later than June 30, 2024. In return, we will send you a report and a small gift as a token of our appreciation.

Encourage all your friends to log their hunts as well. Have a safe and enjoyable squirrel season and thanks again for your support! Don't forget to take someone new to hunting out with you this year.

Contacts

Approximately 93% of Kentucky is privately owned. To successfully manage our wildlife resources, the KDFWR works cooperatively with Kentucky's private landowners. One of the essential ingredients in conserving Kentucky's wildlife resources is habitat improvement. Wildlife biologists are available to work with

interested individuals or groups on properties that they own or have management rights on. Please contact the Private Lands Program Coordinator, Jacob Stewart, jacob.stewart@ky.gov or 502-892-4412, or find your **Private Lands Biologist** by searching your county on our website (<https://app.fw.ky.gov/WebContact/>). Thank you!