

2009-10 RABBIT HUNTING COOPERATOR SURVEY REPORT



KENTUCKY DEPARTMENT OF FISH AND WILDLIFE RESOURCES

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METHODS

The 2009-10 Rabbit Hunting Cooperator Survey Report is a summary of two annual surveys conducted by the Kentucky Department of Fish and Wildlife Resources (KDFWR) to estimate rabbit production, hunter effort, and hunter success. First, the Rabbit Hunter Log Survey is a diary-type hunting log used to record information including date of hunt, county hunted, hours hunted, number of hunters, number of dogs, number of eastern cottontail rabbits, swamp rabbits, and Appalachian cottontail rabbits (jumped, harvested, and wounded). Hunters were asked to keep the log to date as the hunting season progressed, and at the season's conclusion, logs were mailed to the KDFWR for analysis. The Mail Carrier Survey represents the second survey employed to monitor rabbit populations across the state. Mail carriers recorded rabbit and quail observations as they traveled their rural delivery routes during the last full week of July (6 delivery days). Survey cards provided space for observations of rabbits for each of the survey days. Observers also recorded the number of days surveyed, the length of the route, and the total miles driven. The mail carrier data is used to forecast the upcoming hunting season, monitor the population, and estimate rabbit productivity.

All surveys are strictly voluntary and we strongly encourage all Kentucky rabbit hunters and rural mail carriers to participate in these surveys. Hunter cooperators receive this report, detailing hunting season results, and expectations for the upcoming season. Cooperators also receive a new hunting log for the upcoming season and a small gift of appreciation for their participation. Participating mail carriers receive a subscription to *Kentucky Afield* magazine for their support.

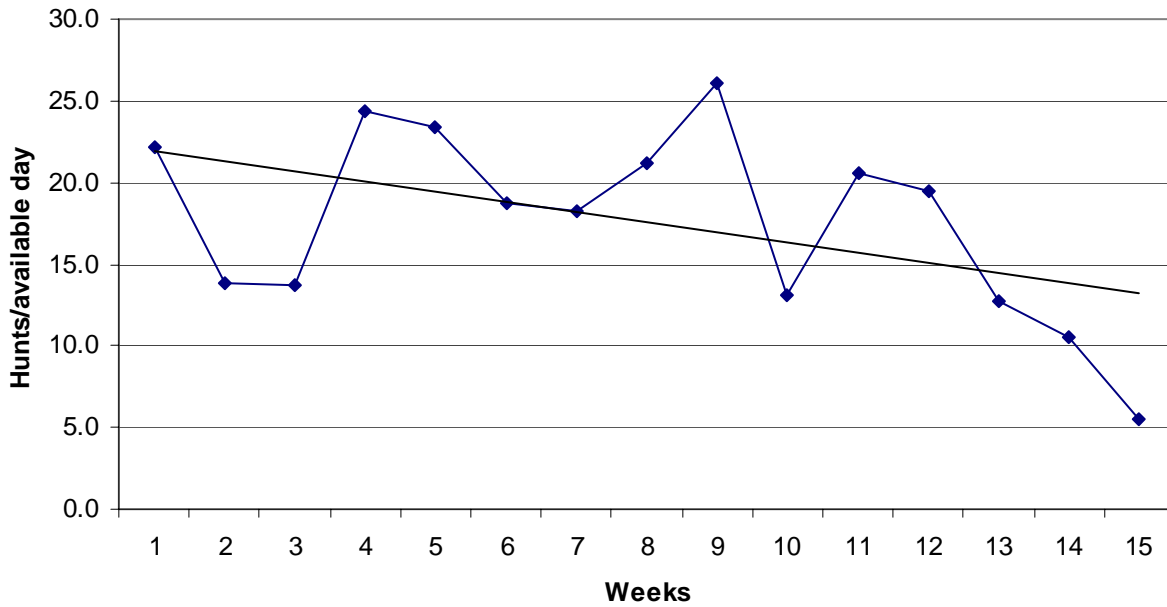
RESULTS AND DISCUSSION

I. Rabbit Hunter Log Survey

Hunting logs were received from 139 hunters who averaged 13 hunting trips each for the season. Data was grouped into weekly and monthly subsets. Beginning in 2010, rabbit data will no longer be grouped into physiographic region subsets. Instead, data will be grouped into 3 regional subsets; west central, and east (Appendix A) to identify trends within the season and across the state. From 1,827 logged hunts, the average hunt included 2 hunters spending 3.6 hours afield with 4 dogs. Hunters recorded hunts in 98 counties across the state.

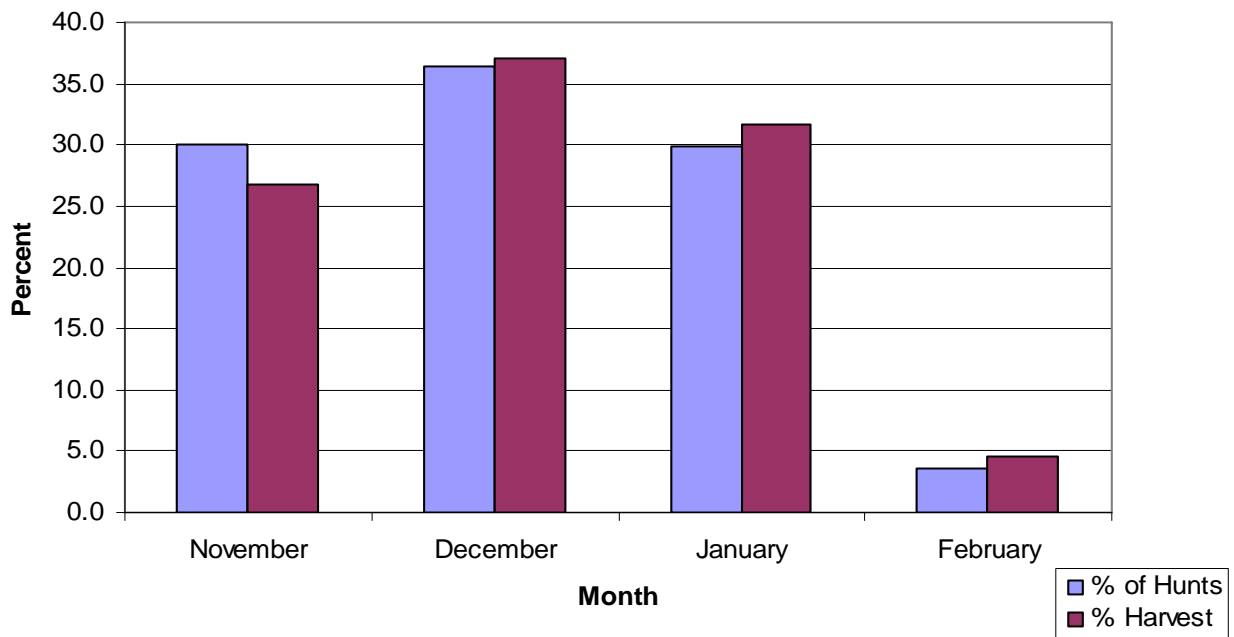
Hunting pressure declined as the season progressed (Figure 1).

Figure 1: Hunts/Available Day Index, 2009-10



Hunting peaked during December. Monthly subsets revealed the proportion of hunts and the proportion of harvest were quite similar. December, January, and February hunts were slightly more productive than November (Figure 2).

Figure 2: Hunting Effort and Harvest, 2009-10



Cooperator numbers have shown a slight decline over the last 3 years. (Table 1).

Table 1. Summary Statistics from the Rabbit Hunter Log Survey in Kentucky, 2005-2010.

Statistics	2005-06	2006-07	2007-08	2008-09	2009-10
Cooperators	84	126	154	147	139
Hunts	1,188	1,747	2,114	2,006	1,827
Counties	82	101	100	104	98
Hunts/Hunter	14	14	14	14	13
Hours Hunted	4075.6	6287.7	7887.9	7460.1	6588.9
Dogs Used	4,535	6,956	8,243	7,632	7,003
Total Rabbits Jumped	5,710	9,526	11,974	10,910	10,316
Total Rabbits Harvested	2,152	3,792	5,236	4,526	4,703
Total Rabbits Wounded	160	312	332	364	286
Hunting Mortality (%)	40	43	46	45	48

Over the past five hunting seasons, hunting mortality (harvested and wounded individuals) remained less than 50% of the rabbits jumped (Table 1).

Total rabbits jumped averaged 5.6/hunt (1.5/hr), and rabbits harvested averaged 2.5/hunt (0.7/hr). The jump and harvest rates by species have remained steady over the last three seasons with the exception of the 2008-09 swamp rabbit jump and harvest rate (Table 2). However, several swamp rabbits were reportedly jumped in eastern Kentucky counties which would be highly unlikely considering their normal range and habitat requirements (west KY bottomland hardwood areas).

Also, sample sizes for Appalachian cottontails are far too low to indicate any change in the population or in hunter effort and success. Harvest and jump rates by species were calculated by the following assumptions: 1) if Appalachian cottontail or swamp rabbits were jumped, it was assumed Appalachian or swamp rabbits were being hunted, 2) if eastern cottontails were jumped and an Appalachian cottontail or swamp rabbit was jumped, it was assumed the Appalachian cottontail or swamp rabbit was being hunted, and 3) if no rabbits were jumped, it was assumed the eastern cottontail rabbit was being hunted (because cottontails comprise 98% of the harvest and are the most common).

Table 2. Rabbit jump and harvest rates by species in Kentucky, 2007-2010.

Year	Eastern			Swamp			Appalachian		
	07-08	08-09	09-10	07-08	08-09	09-10	07-08	08-09	09-10
Total Hunts	1,983	1,832	1,702	72	54	42	19	17	17
Jumped/Hunt	5.92	5.79	5.96	2.47	4.69	3.33	3.00	2.41	1.41
Jumped/Hour	1.57	1.54	1.62	0.59	0.91	0.76	0.69	0.68	0.37
Harvested/Hunt	2.57	2.38	2.72	1.03	2.33	1.31	1.84	1.06	0.47
Harvested/Hour	0.68	0.63	1.15	0.24	0.45	0.43	0.42	0.3	0.30
Wounded/Hunt	0.16	0.19	0.16	0.04	0.37	0.02	0.11	0	0.12
Wounded/Hour	0.04	0.05	0.04	0.01	0.07	0.00	0.02	0	0.04

II. Mail Carrier Survey Results

The Mail Carrier Survey provides a glimpse of what we can expect for the upcoming hunting season. The survey is the oldest in the program being completed for 50 years. Although no population estimates can be derived from this data, it does provide valuable trend information showing whether the population is up, down, or stable.

In 2010, mail carriers returned 749 of the approximately 1,600 survey cards issued, which corresponds to a 46.8% response rate. Rural carriers covered 256,510 miles and observed 3,349 rabbits. The statewide observation rate was 1.31 rabbits/100 miles traveled.

Beginning this year, mail carrier data will no longer be analyzed by physiographic region. Analyzing data across 8 regions results in small sample sizes which can be far less accurate. Data will now be grouped into 3 regions; west, central, and east (appendix A).

Table 3. Mail Carrier indices and rates of change in Kentucky, 1961-2010.

	TOTAL RABBITS/100 MILES			PERCENT CHANGE	
REGION	MEAN (average)			MEAN (average)	
	1961-2010*	2009	2010	2010/1961-2010	2009/2010
West	N/A	N/A	0.81	N/A	N/A
Central	N/A	N/A	1.62	N/A	N/A
East	N/A	N/A	1.35	N/A	N/A
Statewide	2.13	1.96	1.31	-62.5	-33.0

*N/A = data was not analyzed by west, central, east until 2010

Over the last 50 years of this survey, the decline in the rabbit population is evident (Figure 3). The severe drop in population levels following the winters of 1977 and 1978 was dramatic and populations have been slow to recover. The overall drop in rabbit numbers since the late 1960's can be generally attributed to habitat loss because of land use changes and cleaner agricultural practices. In 2005, the statewide index decreased dramatically following five years of surveys that were quite good. Subsequently, rabbit populations have remained fairly stable for the last two decades (Figure 4).

Figure 3: Rabbits observed per 100 miles from the Mail Carrier Survey, 1961-2010

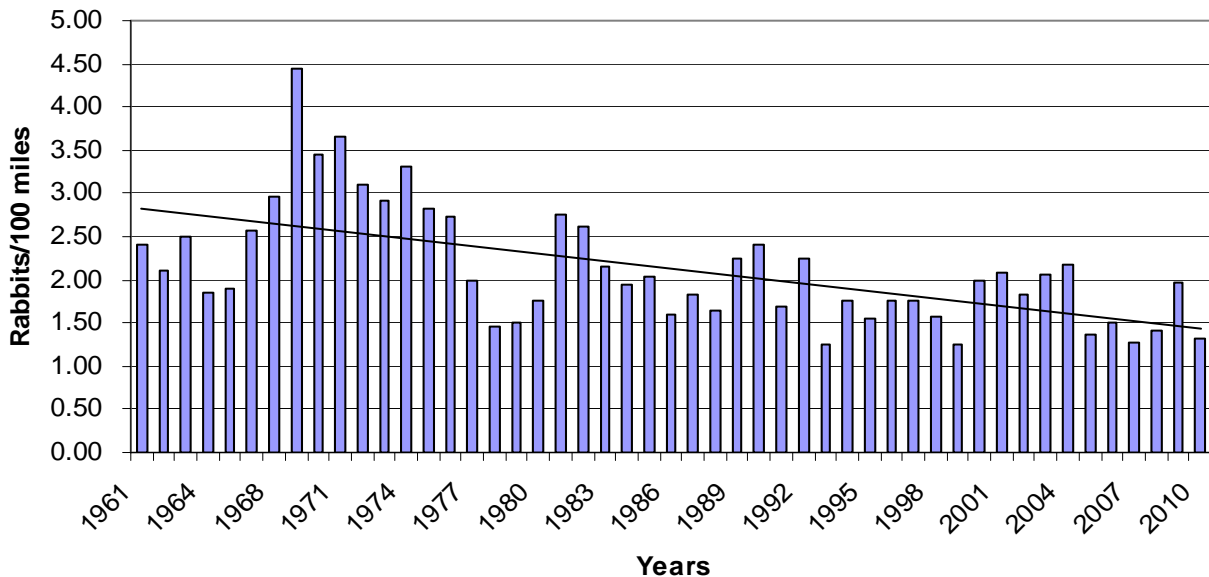
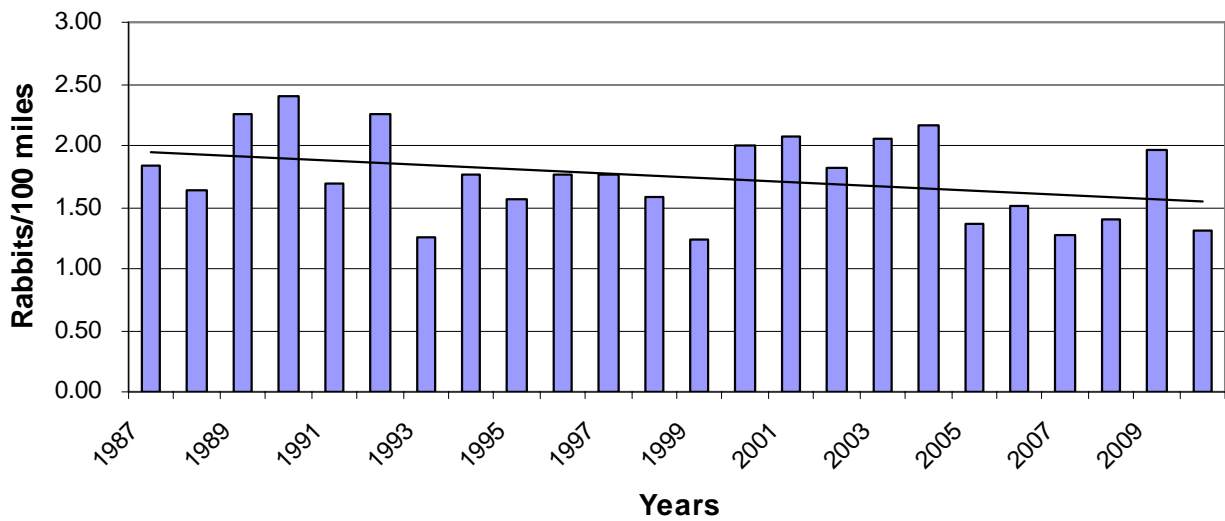


Figure 4: Rabbits observed per 100 miles; Mail Carrier Survey, 1987-2010



SUMMARY

The Mail Carrier Survey and the Rabbit Hunter Log Survey appear to be tracking each other well. Therefore, we can make predictions based on the Mail Carrier Survey results. Breaking down data by physiographic regions generally makes predictions more difficult as sample sizes become smaller compromising reliability. Because of this, we now group mail carrier data into 3 regions of the state; west, central, and east. Because this is the first year that we have grouped data this way we are unable to make comparisons with previous years. However, the central portion of the state led all regions in the number of rabbits observed.

Rabbit populations seem to be stabilizing across the state. Our survey indices are showing oscillations characteristic of population stability. Upon comparison, rabbit populations are far below those on the late 60's and early 70's. Fortunately, rabbits generally have small home ranges and localized management should generate a positive response, but large-scale changes in the cottontail rabbit population in Kentucky will require widespread management of the agricultural environment. Swamp rabbits and Appalachian cottontails requirements are much more difficult to attain particularly when habitat loss is irreversible, so we continue to keep a watchful eye on both of those species.

Overall the 2009-10 rabbit season was fair. Over the last 20 years, the population has remained fairly stable with bumps up and down. Last year, harvest rates and jump rates were similar to the previous season. The Mail Carrier Survey shows a 33% decrease in the number of observed rabbits statewide; however there should be plenty of rabbits available for harvest this fall.

ACKNOWLEDGMENTS

We would like to say a special thanks to all those who have participated in the various small game surveys over the years. Your cooperation provides us with valuable data necessary to make wise management decisions regarding rabbit populations and hunting seasons. With that in mind, we ask that you recruit your friends and neighbors who also rabbit hunt to join you in being a hunting cooperator. We need many more cooperators to accurately track rabbit populations across the state.

Hunting logs can be found on the internet (<http://fw.ky.gov/sghelp.asp>), or by contacting the Kentucky Department of Fish and Wildlife Resources at #1 Sportsman's Lane, Frankfort, KY 40601 (1-800-858-1549). Thank you to all whom participated this year, and we hope to hear from you and all of your hunting partners in next season's surveys. We will have a new style of hunting cap available next year, so be sure to send in your log!

Cover image provided by Wes Siegrist (www.artofwildlife.com/miniaturepaintings23.html)

