

2008-09 RABBIT HUNTING COOPERATOR SURVEY REPORT



KENTUCKY DEPARTMENT OF FISH AND WILDLIFE RESOURCES

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METHODS

The 2008-09 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 (6 delivery days) of July. Survey cards provided space for observations of young and adult 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.

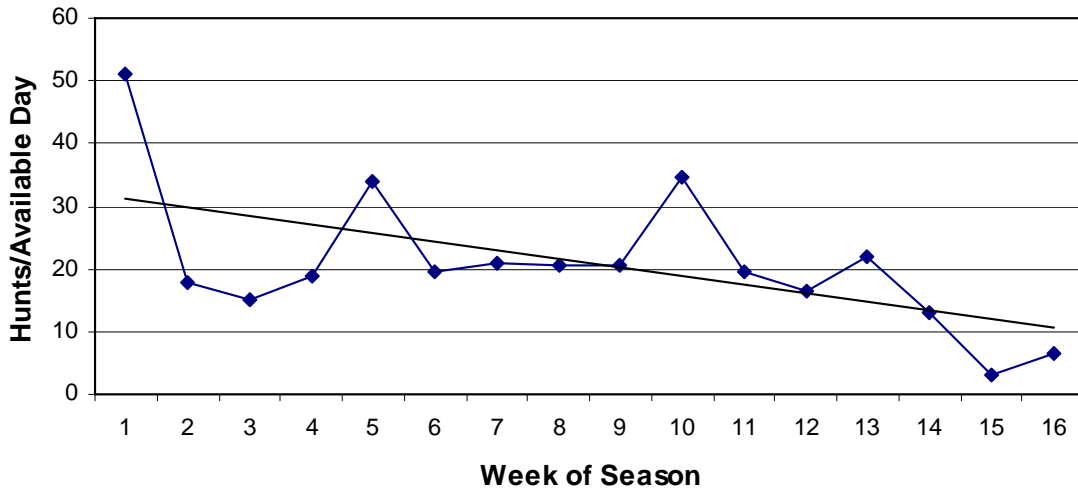
RESULTS AND DISCUSSION

I. Rabbit Hunter Log Survey

Hunting logs were received from 147 hunters who averaged 14 hunting trips each for the season. Data was grouped into weekly and monthly subsets and physiographic region subsets (Appendix A) to identify trends within the season and across the state. From 2,006 logged hunts, the average hunt included 2 hunters spending 3.7 hours afield with 4 dogs. Hunters recorded hunts in 104 counties across the state.

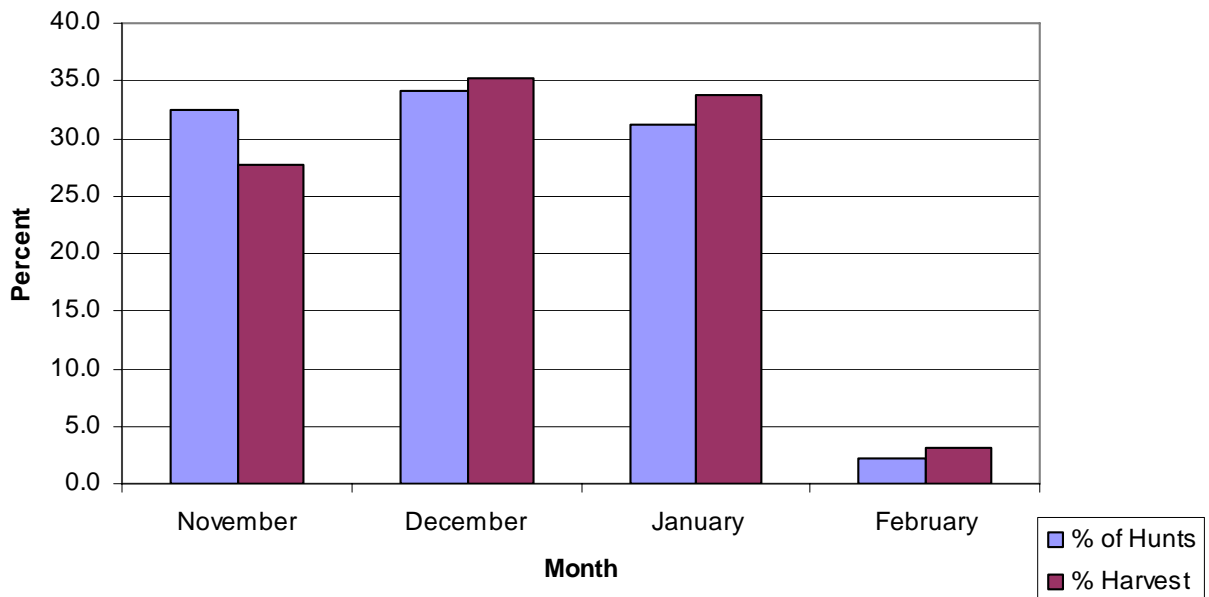
Hunting pressure declined somewhat as the season progressed (Figure 1).

Figure 1: Hunts/Available Day Index, 2008-09



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

Figure 2: Hunting Effort and Harvest, 2008-09



Cooperator numbers have remained steady over the last 3 years. The number of hunters participating in the 2008-09 survey was very similar to the 2007-08 season. (Table 1).

Table 1. Summary Statistics from the Rabbit Hunter Log Survey in Kentucky, 2004-2009.

Statistics	2004-05	2005-06	2006-07	2007-08	2008-09
Cooperators	104	84	126	154	147
Hunts	1,525	1,188	1,747	2,114	2,006
Counties	96	82	101	100	104
Hunts/Hunter	15	14	14	14	14
Hours Hunted	6088.7	4075.6	6287.7	7887.9	7460.1
Dogs Used	6,415	4,535	6,956	8,243	7,632
Total Rabbits Jumped	9,326	5,710	9,526	11,974	10,910
Total Rabbits Harvested	3,951	2,152	3,792	5,236	4,526
Total Rabbits Wounded	293	160	312	332	364
Hunting Mortality (%)	46	40	43	46	45

Total rabbits jumped averaged 5.4/hunt (1.5/hr), and rabbits harvested averaged 2.3/hunt (0.6/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, 2006-2009.

Year	Eastern			Swamp			Appalachian		
	06-07	07-08	08-09	06-07	07-08	08-09	06-07	07-08	08-09
Total Hunts	1,653	1,983	1,832	60	72	54	34	19	17
Jumped/Hunt	5.46	5.92	5.79	2.60	2.47	4.69	2.76	3.00	2.41
Jumped/Hour	1.53	1.57	1.54	0.61	0.59	0.91	0.73	0.69	0.68
Harvested/Hunt	2.18	2.57	2.38	1.02	1.03	2.33	0.97	1.84	1.06
Harvested/Hour	0.61	0.68	0.63	0.24	0.24	0.45	0.26	0.42	0.3
Wounded/Hunt	0.18	0.16	0.19	0.02	0.04	0.37	0.12	0.11	0
Wounded/Hour	0.05	0.04	0.05	0	0.01	0.07	0.03	0.02	0

Over the past five hunting seasons, hunting mortality (harvested and wounded individuals) remained less than 50% of the rabbits jumped (Table 1). Wound rates (3.3%) were up slightly for the 2008-09 season. Cottontail rabbits continue to dominate the harvest as expected.

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 49 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 2009, mail carriers returned 695 of the approximately 1,600 survey cards issued, which corresponds to a 43.4% response rate. Rural carriers covered 233,682 miles and observed 4,575 rabbits. The statewide observation rate was 1.96 rabbits/100 miles traveled. Juvenile rabbits comprised 56% of the rabbit observations. Observations of rabbits/100 miles by physiographic region generally showed slight population increases across the state for the second year in a row (Table 3). The Eastern Pennyroyal region incurred the greatest increase in observation rate at 130%! Only the Jackson Purchase and Eastern Coalfield regions showed decreases from last year. The net result was a 39.8% increase in observation rates across the state since last year.

Table 3. Mail Carrier indices and rates of change in Kentucky, 1961-2009.

	TOTAL RABBITS/100 MILES			PERCENT CHANGE	
PHYS. REGION	MEAN (average)			MEAN (average)	
	1961- 2009*	2008	2009	2009/ 1961-2009	2008/ 2009
Jackson Purchase	1.54	0.81	0.74	-52.0	-8.64
Western Pennyroyal	1.99	1.12	1.80	-9.5	60.7
Western Coalfield	1.69	1.19	1.63	-3.5	37.0
Inner Bluegrass	2.18	1.34	1.73	-20.6	29.1
Knobs – Outer Bluegrass	2.49	1.74	2.28	-8.4	31.0
Hills of Bluegrass	2.40	1.59	1.89	-21.2	18.9
Eastern Pennyroyal	1.65	0.86	1.98	20.0	130.2
Eastern Coalfield	2.71	2.56	2.52	-7.0	-1.6
Statewide	2.15	1.40	1.96	-8.8	39.8
*No data available for 1964.					

Over the last 49 years of this survey, the decline in the rabbit population is evident (Figure 3) but the 2009 results appear to be promising. 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, 1961-2009

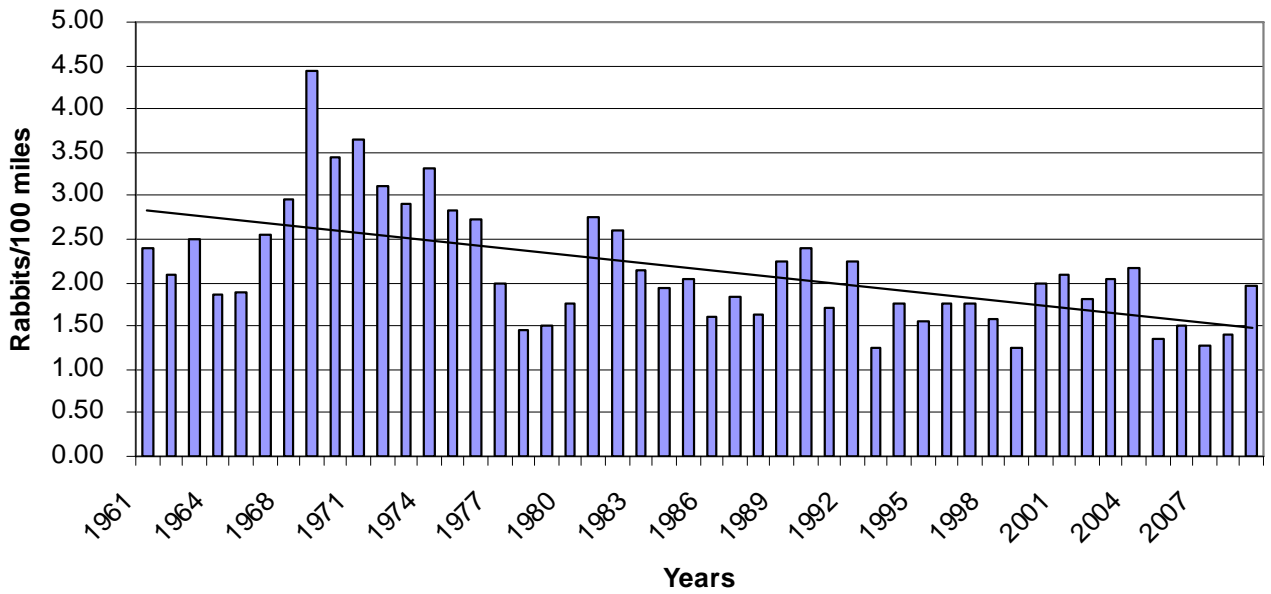
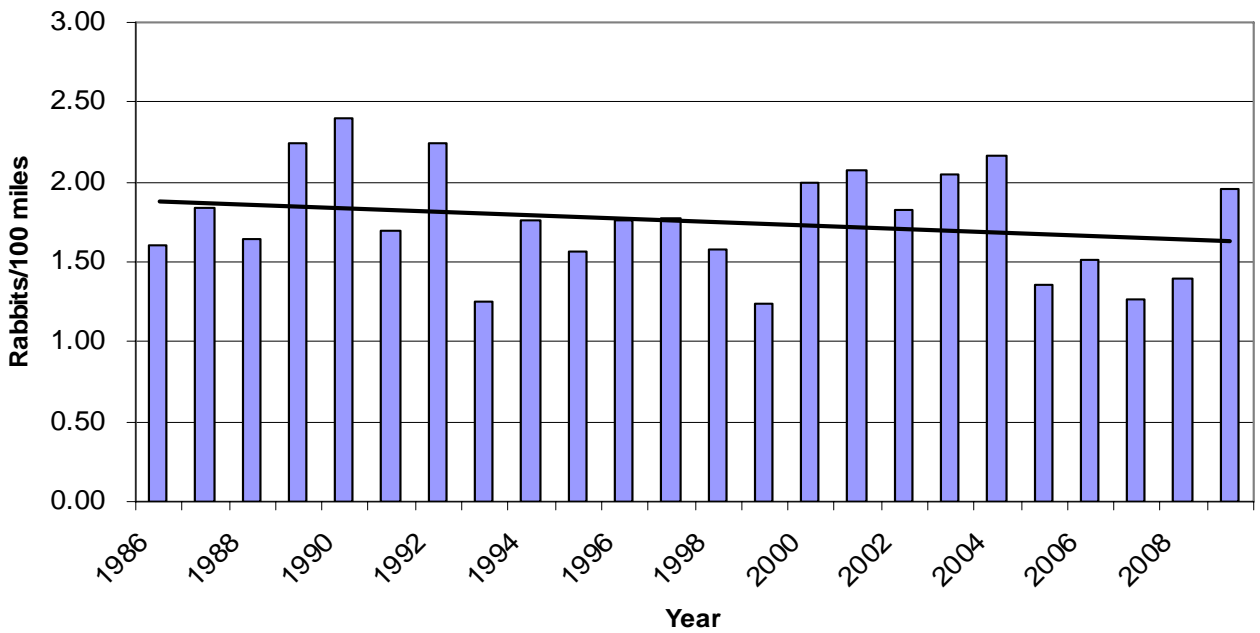


Figure 4: Rabbits observed per 100 miles; Mail Carrier Survey, 1986-2009



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. However, by combining physiographic regions into western (Jackson Purchase, Western Coalfield, and Western Pennyroyal), central (Inner, Outer, and Hills of the Bluegrass), and eastern (Eastern Pennyroyal and Eastern Coalfield) zones, projections become a little clearer. With that in mind, the western zones should remain similar to last year. Jackson Purchase saw a decrease in observed rabbits while the Western Coalfield and Western Pennyroyal each saw an increase in observed rabbits. The Inner Bluegrass, Outer Bluegrass, and Hills of Bluegrass regions all experienced increases in observed rabbits. Eastern zones will likely experience good hunting action as the Eastern Pennyroyal Region experienced a considerable increase in the number of observed rabbits.

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 2008-09 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 almost identical to the previous season. The Mail Carrier Survey shows a 40% increase in the number of observed rabbits statewide which means 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!

