

2008-09 SQUIRREL HUNTING COOPERATOR SURVEY REPORT



KENTUCKY DEPARTMENT OF FISH AND WILDLIFE RESOURCES

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Thank you to all the hunter cooperators who sent in hunting logs for the Fall Squirrel Hunting Cooperator Survey. Your efforts are appreciated, and we encourage you to continue sending in your hunting logs. Encourage your hunting buddies to do the same! Survey participation was good again this year so please, keep up the good work and continue to mail in your logs! The following report will cover the results of last season's (2008-09) Fall Squirrel Hunting Cooperator Survey and the 2008 Mast Survey. Last season's harvest and hunting effort totals will be included as well as the current population trends along with an outlook for the upcoming season.

I. 2008-09 Fall 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, number of fox squirrels (seen, killed, and wounded), and the number of gray squirrels (seen, killed, and wounded) on a diary-type hunting log. Logs are available on the internet: fw.ky.gov/smallgamelogs.asp, or by calling 800-858-1549. Hunters simply keep the log up-to-date as the hunting season progresses, and mail it to KDFWR Headquarters when they're 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 800-858-1549 ext. 4545 or e-mail ben.robinson@ky.gov.

Summary of Last Year's Hunter Logs

Participation in last year's survey was similar to the previous year and we continue to remain pleased with the number of hunters who take the time to record data from their hunts. Hunting logs were received from 117 hunters who averaged 11.2 hunting trips during the season. Thirteen percent of hunts included the use of dogs, and hunts lasted an average of 2.7 hours. Data was provided from 1,320 hunts that occurred in 88 counties across the state. The central region had the largest number of hunts with 714, followed by the eastern region with 381, and the western region with a total of 225. The number of hunts per county was well distributed (Appendix A).

Total squirrels seen by hunters averaged 3.9 per hunt or 1.6 per hour. Hunters saw more squirrels during the middle of the season while harvest remained fairly stable throughout the season (Figure 1). Hunters averaged seeing 3 gray squirrels per hunt (1.1/hr.) and 1.3 fox squirrels per hunt (0.5/hr.) statewide. Total squirrel harvest averaged 1.9 per hunt (0.7/hr.). Gray squirrel harvest averaged 1.3 per hunt (0.5/hr.), and fox squirrel harvest averaged 0.5 per hunt (0.2/hr.). The number of gray squirrels seen and harvested per hour was down slightly from the 2007-08 season (Table 1). The maximum squirrels (by species) observed during a single hunt were 32 for gray squirrels (3 hunters) and 17 for fox squirrels (6 hunters). Last year's survey results yielded a 47% hunting mortality rate for an observed squirrel, while hunter effort remained stable (11.3 hunts/cooperator) (Table 2).

**Figure 1: Squirrels Seen & Harvested per Hour by Week;
Hunter Cooperator Survey 2008-09**

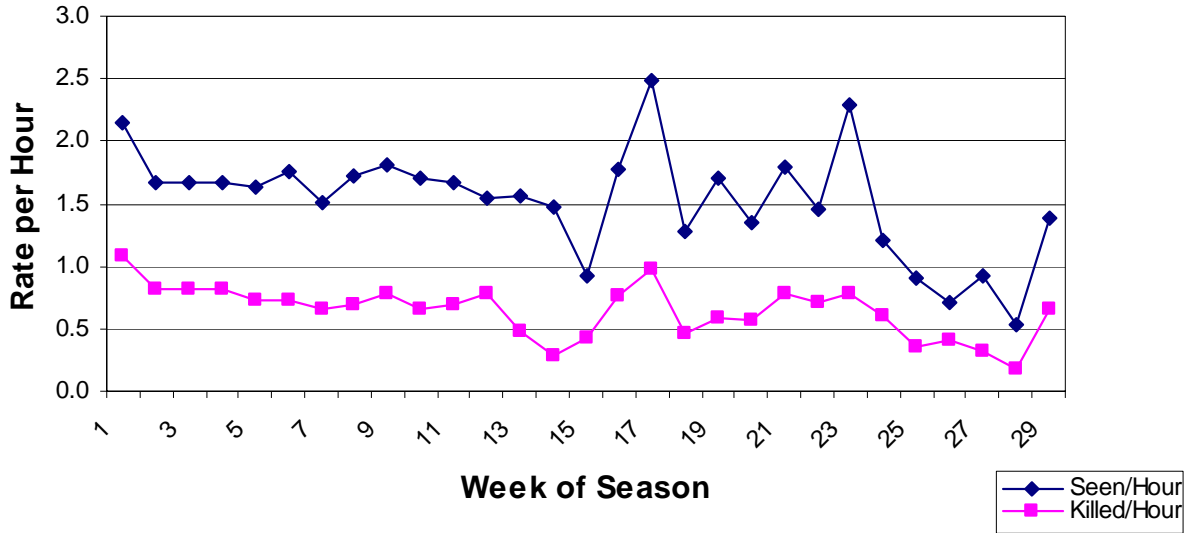


Table 1. Observation and harvest rates of fox and gray squirrels from Fall Squirrel Hunter Cooperator Surveys, 2002-2009.

Season	Fox Squirrels				Gray Squirrels			
	Seen		Harvested		Seen		Harvested	
	Hour	Hunt	Hour	Hunt	Hour	Hunt	Hour	Hunt
2002-03	0.5	1.2	0.3	0.7	2.3	6.2	1.4	3.1
2003-04	0.3	0.9	0.2	0.5	1.9	5.0	0.9	2.3
2004-05	0.4	1.0	0.2	0.5	2.1	5.5	1.0	2.7
2005-06	0.3	0.7	0.2	0.4	1.3	3.2	0.7	1.7
2006-07	0.4	1.1	0.2	0.6	1.5	4.1	0.7	2.0
2007-08	0.3	1.0	0.2	0.5	1.4	3.9	0.7	1.8
2008-09	0.5	1.3	0.2	0.5	1.1	3.0	0.5	1.4

Table 2. Summary of Fall Squirrel Hunter Cooperator Survey data, 2002-2009.

STATISTICS	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
Total cooperators	95	114	95	95	171	129	117
Total hunts	1049	1321	1432	1165	1794	1498	1320
Total counties	83	83	81	88	106	100	88
Average hunts/cooperator	11.0	11.6	15.1	12.3	10.5	11.6	11.3
Total hours	2854	3518	3786	2955	4982	4097	3566
Hunts using dogs (%)	13.0	14.2	19.0	22.6	31.0	14.0	13.0
Total fox squirrels seen	1297	1173	1373	846	2060	1508	1764
Total fox squirrels killed	775	632	777	482	1046	683	726
Total fox squirrels wounded	51	36	44	9	73	50	52
Total gray squirrels seen	6463	6701	7894	3712	7420	5901	4076
Total gray squirrels killed	3203	3053	3846	1926	3667	2712	1822
Total gray squirrels wounded	254	273	297	96	282	224	132
Harvest of squirrels seen (%)	51.3	46.8	49.9	52.8	49.7	45.8	43.6
Squirrels wounded (%)	3.9	3.9	3.7	2.3	3.7	3.7	3.2
Hunting mortality (%)	55.2	50.7	53.6	55.1	53.4	49.5	46.7

Hunter Effort

Hunting effort was greater towards the beginning of squirrel season. Fifty-one percent of the hunts took place in August and September (Figure 2). The hunter effort index declined as the season progressed, and squirrel-hunting trips were rare in January and February (Figure 3). 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. The percentage of hunts dropped beginning in November, with only 12.7% of the total hunts occurring in this month (Figure 2). The drop in hunting rate was likely a direct result of the onset of deer gun season. Accordingly, 70% of the total hunts occurred before modern gun season (November 8, 2008, Week 13).

**Figure 2: Proportion of Hunts & Harvest by Month;
Fall Hunter Cooperator Survey 2008-09**

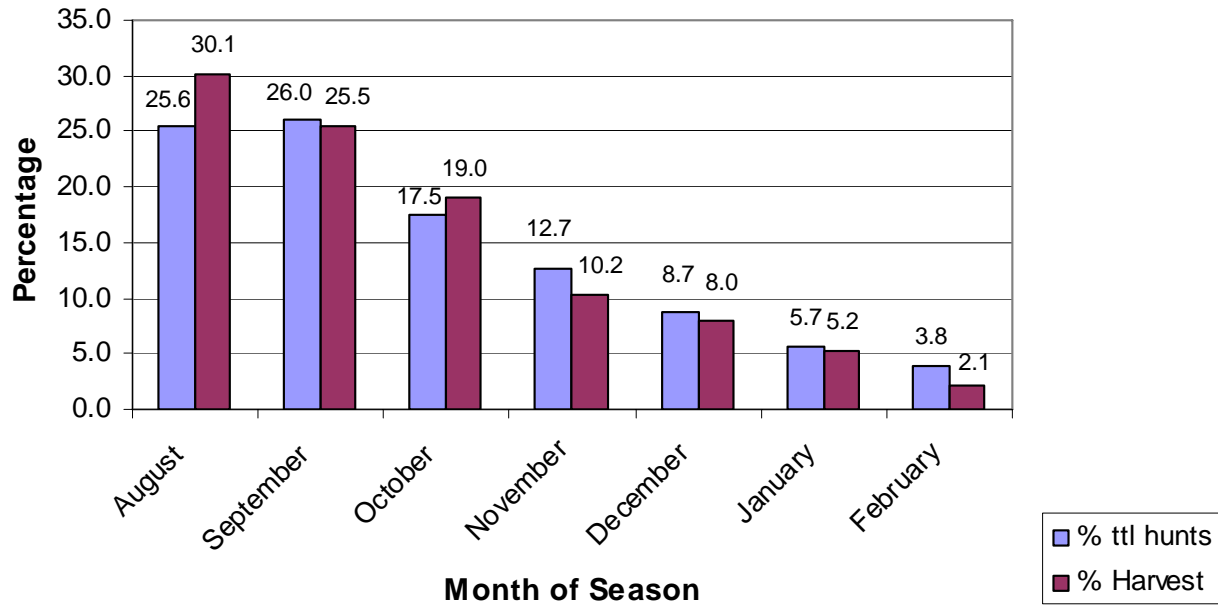
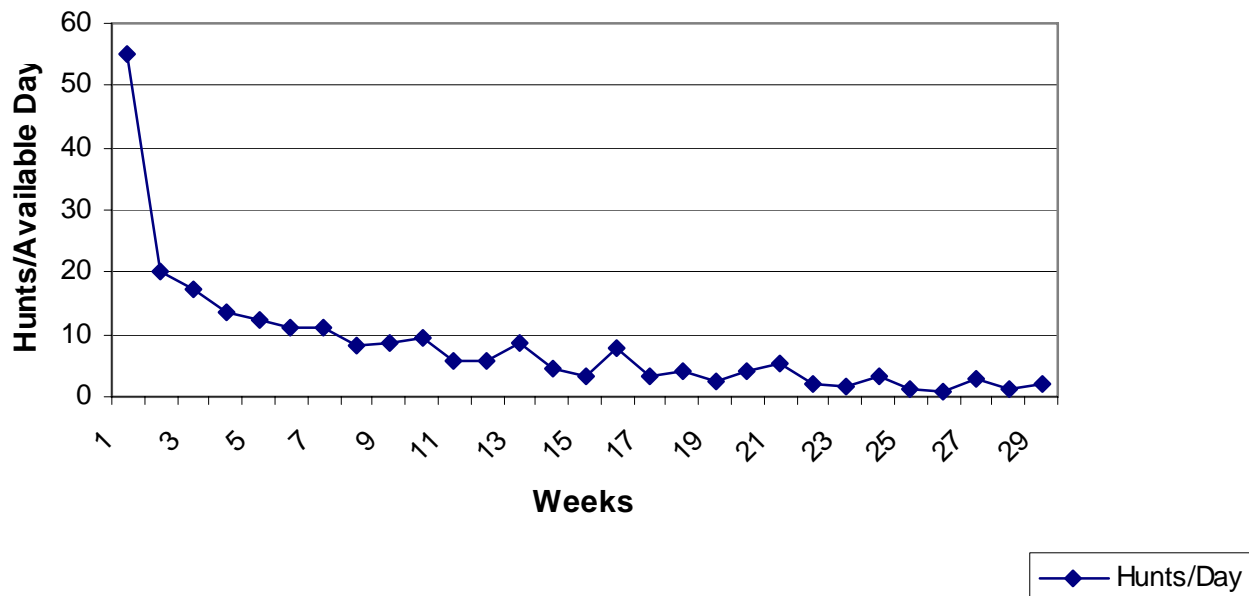


Figure 3: Hunts/Day Index; Hunter Cooperator Survey 2008-09



Harvest

Hunters harvested 43.6% of squirrels seen and wounded 3.2%. Assuming wounded squirrels did not survive, the hunting mortality rate was 46.7% of squirrels seen in 2008-09. Regional trends varied from fox squirrels comprising 37.9% of the harvest in the central region to as low as 8.7% in the eastern region (Figure 4). The rate suggests Kentucky squirrel hunters prefer hunting in more extensive forests and woodlands, common to gray squirrels, than small woodlots and fencerow-type habitats where fox squirrels are often found. It also implies that gray squirrels are more abundant than fox squirrels.

**Figure 4: Species Composition of Fall Harvest;
Hunter Cooperator Survey 2008-09**

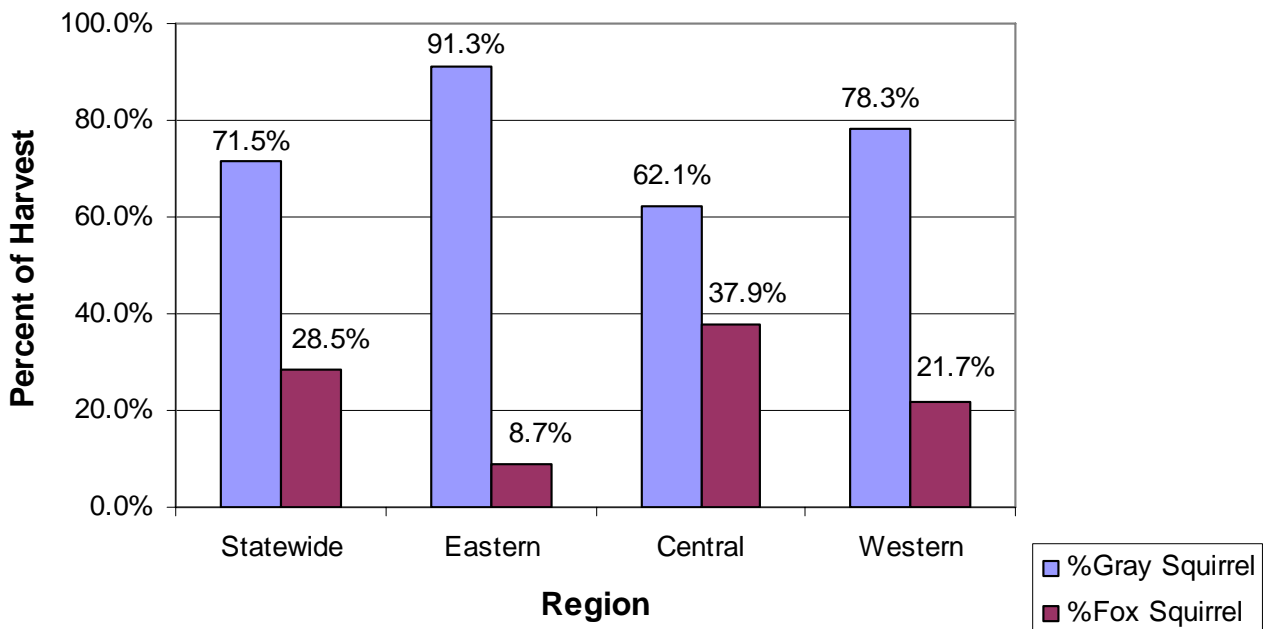


Figure 5: Squirrels Seen & Killed per Hour by Month of Season

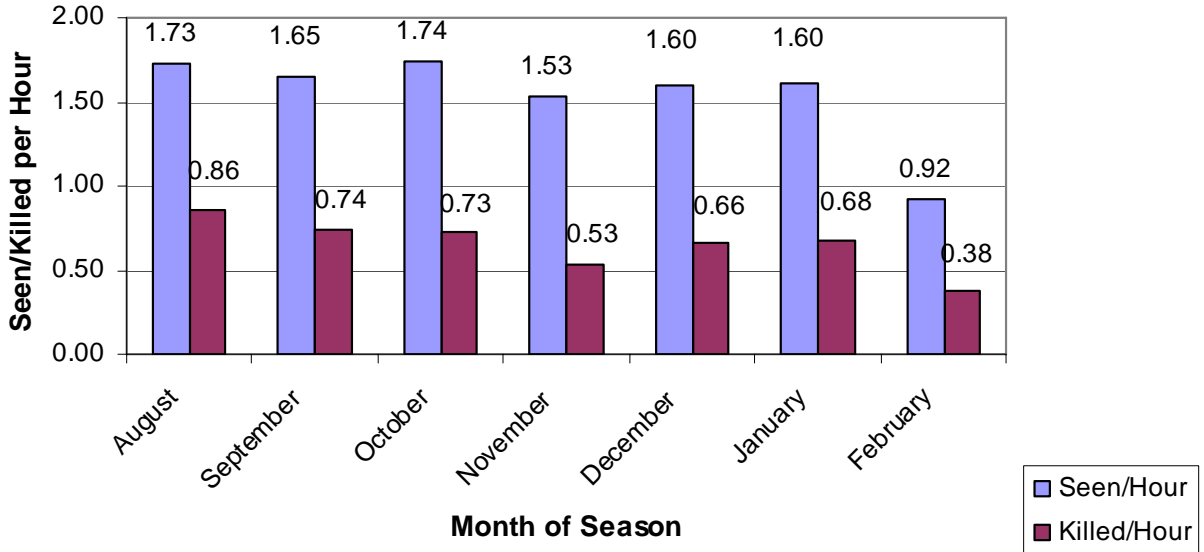
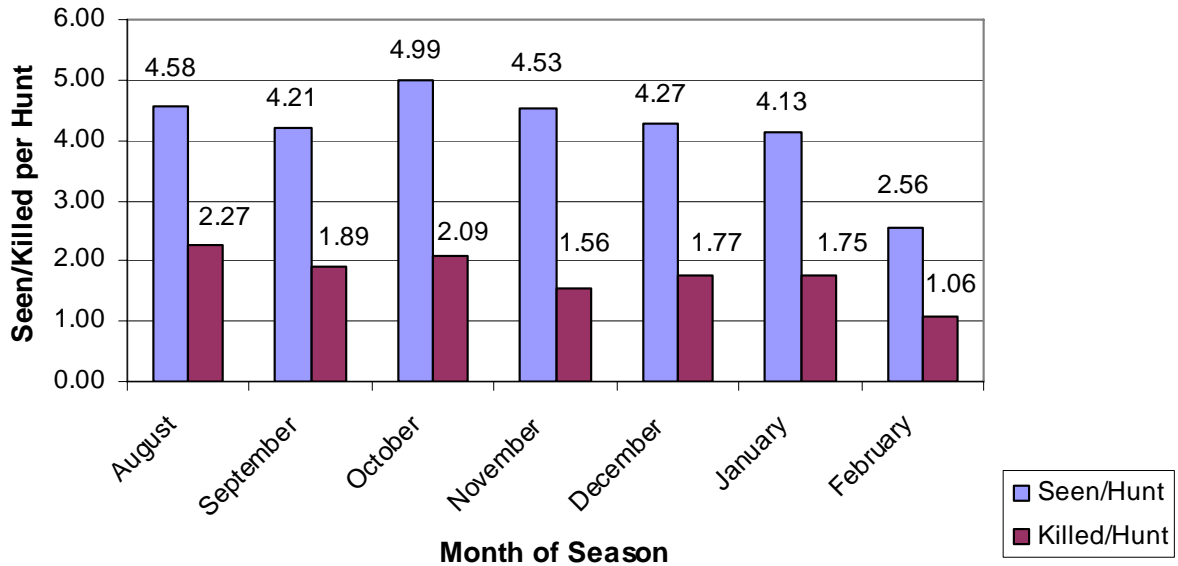


Figure 6: Squirrels Seen & Killed per Hunt by Month of Season



II. 2008 Mast Survey Results

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. In 2007, a new mast survey protocol was implemented by KDFWR. The new protocol has been utilized by several eastern and northeastern states for many years. The previous KY mast survey lacked a standardized protocol and data could not be shared with other states/regions. The new survey continues to monitor the 3 primary mast producing tree groups (hickories, red oaks, and white oaks) with American beech being the only individual species surveyed.

Summary of the Survey

The charts below show the proportion of trees bearing acorns (PBA) or other mast. The first chart is a summary of the entire states mast crop based on the 2008 fall survey, followed by the western region, central region, and eastern region. Overall the 2008 mast crop was good, with the exception of red oaks. Statewide, the red oak mast crop was considered a failure while white oaks, hickory, and beech ranged between an "average" mast crop to a "bumper" crop respectively.

Statewide

	Failure 0-19%	Poor 20-39%	Average 40-59%	Good 60-79%	Bumper 80-100%
White Oak			47.7		
Red Oak	10.8				
Hickory				77.7	
Beech					85.7

Western Region

	Failure 0-19%	Poor 20-39%	Average 40-59%	Good 60-79%	Bumper 80-100%
White Oak			45.1		
Red Oak	13.3				
Hickory				60.1	
Beech				62.2	

Central Region

	Failure 0-19%	Poor 20-39%	Average 40-59%	Good 60-79%	Bumper 80-100%
White Oak			46.6		
Red Oak	7.1				
Hickory				77.7	
Beech					85.8

Eastern Region

	Failure 0-19%	Poor 20-39%	Average 40-59%	Good 60-79%	Bumper 80-100%
White Oak			50.7		
Red Oak	14.7				
Hickory					88.3
Beech					94.1

III. 2009-10 Fall Squirrel Hunt Forecast

The 2008 mast crop was rated average-bumper for all mast producing groups except red oaks. A high abundance of nuts meant more food for squirrels going into the winter months. Female squirrels that survived the winter were likely very fit entering the breeding season. Hunters should expect to see more squirrels this fall than they may have encountered last year. Hunters should see an average of 2.0 squirrels/hour this fall.

Don't forget to turn in your Hunter Cooperator log at the completion of this years hunt! We plan to have a brand new style hunting cap for 2009-10 survey participants! Encourage all of your friends to log their hunts as well. Have a safe and enjoyable squirrel season and thanks again for your support!

