

2007-08 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 (2007-08) Fall Squirrel Hunting Cooperator Survey and the 2007 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. 2007-08 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 down slightly from the previous year; however we are pleased with the number of hunters that participated this year. Hunting logs were received from 129 hunters who averaged 11.6 hunting trips during the season. Fourteen percent of hunts included the use of dogs, and hunts lasted an average of 2.7 hours. Data was provided from 1,498 hunts that occurred in 100 counties across the state. The central region had the largest number of hunts with 706, followed by the eastern region with 443, and the western region with a total of 349. The number of hunts per county was well distributed (Appendix A).

Total squirrels seen by hunters averaged 4.9 per hunt or 1.8 per hour. Hunters saw more squirrels at the start of the season while harvest remained fairly stable throughout the season (Figure 1). Hunters averaged seeing 3.9 gray squirrels per hunt (1.4/hr.) and 1.0 fox squirrels per hunt (0.3/hr.) statewide. Total squirrel harvest averaged 2.3 per hunt (0.8/hr.). Gray squirrel harvest averaged 1.8 per hunt (0.7/hr.), and fox squirrel harvest averaged 0.5 per hunt (0.2/hr.). The number of both gray and fox squirrels seen and harvested per hour was very similar to the 2006-07 season (Table 1). The maximum squirrels (by species) observed during a single hunt were 42 for gray squirrels (5 hunters) and 20 for fox squirrels (2 hunters). Last year's survey results yielded roughly 50% hunting mortality rate for an observed squirrel, and showed a slight increase in hunter effort (11.6 hunts/cooperator) (Table 2).

Figure 1: Squirrels Seen and Harvested per Hour by Week; Hunter Cooperator Survey 2007-08

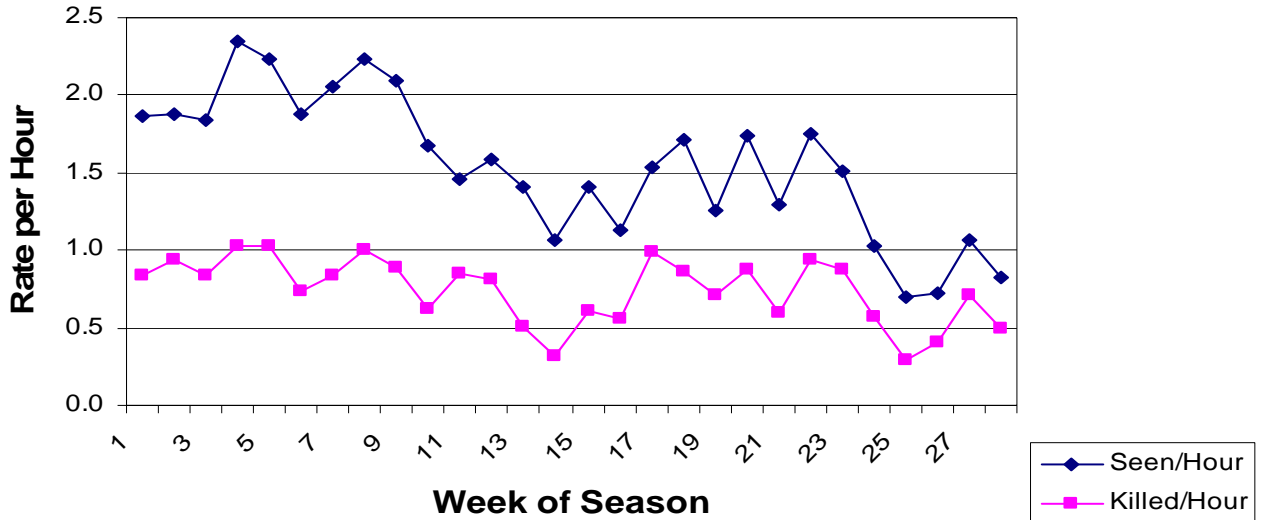


Table 1. Observation and harvest rates of fox and gray squirrels from Fall Squirrel Hunter Cooperator Surveys, 2001-2008.

Season	Fox Squirrels				Gray Squirrels			
	Seen		Harvested		Seen		Harvested	
Hour	Hunt	Hour	Hunt	Hour	Hunt	Hour	Hunt	
2001-02	0.5	1.4	0.3	0.8	1.7	4.7	1.0	2.0
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

Table 2. Summary of Fall Squirrel Hunter Cooperator Survey data, 2001-2008.

STATISTICS	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
Total cooperators	120	95	114	95	95	171	129
Total hunts	1425	1049	1321	1432	1165	1794	1498
Total counties	91	83	83	81	88	106	100
Average hunts/cooperator	11.9	11.0	11.6	15.1	12.3	10.5	11.6
Total hours	3916	2854	3518	3786	2955	4982	4097
Hunts using dogs (%)	17.5	13.0	14.2	19.0	22.6	31.0	14.0
Total fox squirrels seen	1956	1297	1173	1373	846	2060	1508
Total fox squirrels killed	1098	775	632	777	482	1046	683
Total fox squirrels wounded	50	51	36	44	9	73	50
Total gray squirrels seen	6690	6463	6701	7894	3712	7420	5901
Total gray squirrels killed	2802	3203	3053	3846	1926	3667	2712
Total gray squirrels wounded	235	254	273	297	96	282	224
Harvest of squirrels seen (%)	45.1	51.3	46.8	49.9	52.8	49.7	45.8
Squirrels wounded (%)	3.3	3.9	3.9	3.7	2.3	3.7	3.7
Hunting mortality (%)	48.4	55.2	50.7	53.6	55.1	53.4	49.5

Hunter Effort

Hunting effort was greater towards the beginning of squirrel season. Forty-nine 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 sharply beginning in November, with only 8.9% 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, over 70% of the total hunts occurred before modern gun season (November 10, 2007, Week 13).

Figure 2: Proportion of Hunts and Harvest by Month; Fall Hunter Cooperator Survey 2007-08

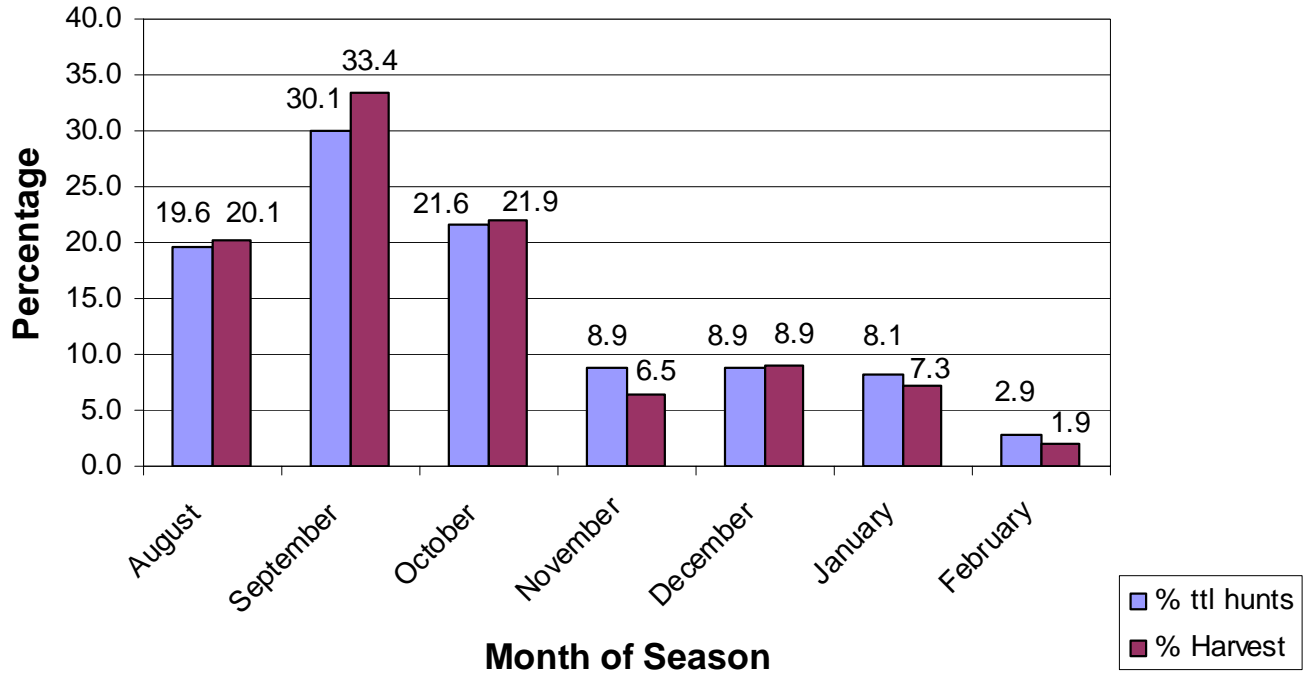
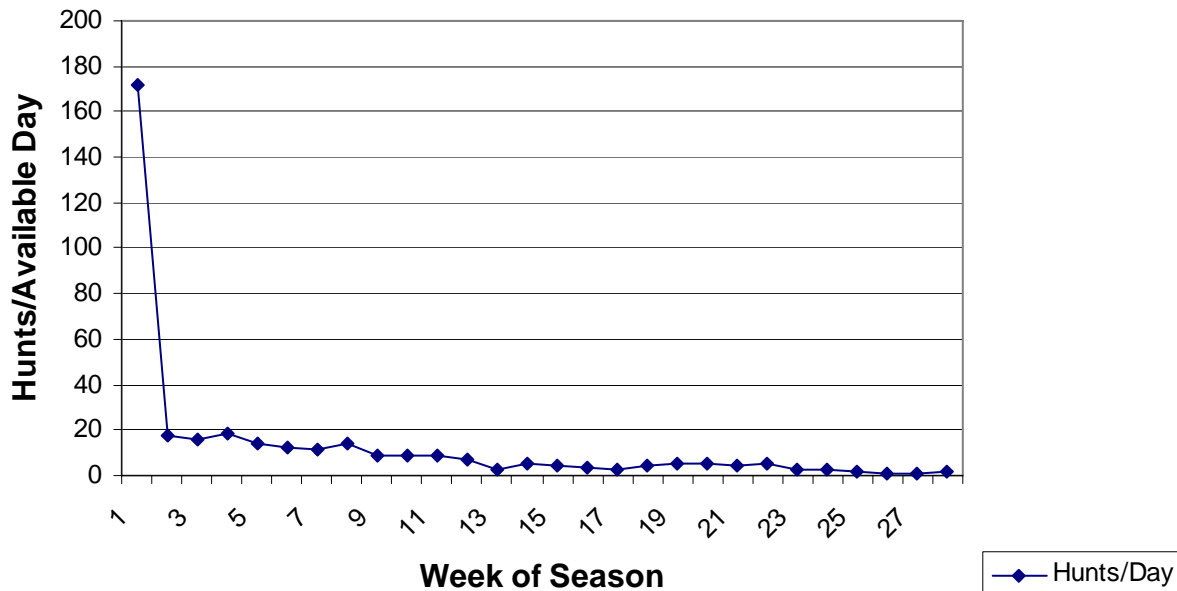


Figure 3: Hunts/Day Index; Fall Hunter Cooperator Survey 2007-08



Harvest

Hunters harvested 45.8% of squirrels seen and wounded 3.6%. Assuming wounded squirrels did not survive, the hunting mortality rate was 49.5% of squirrels seen in 2007-08. Regional trends varied from fox squirrels comprising 35.5% of the harvest in the central region to as low as 6.8% 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 2007-08**

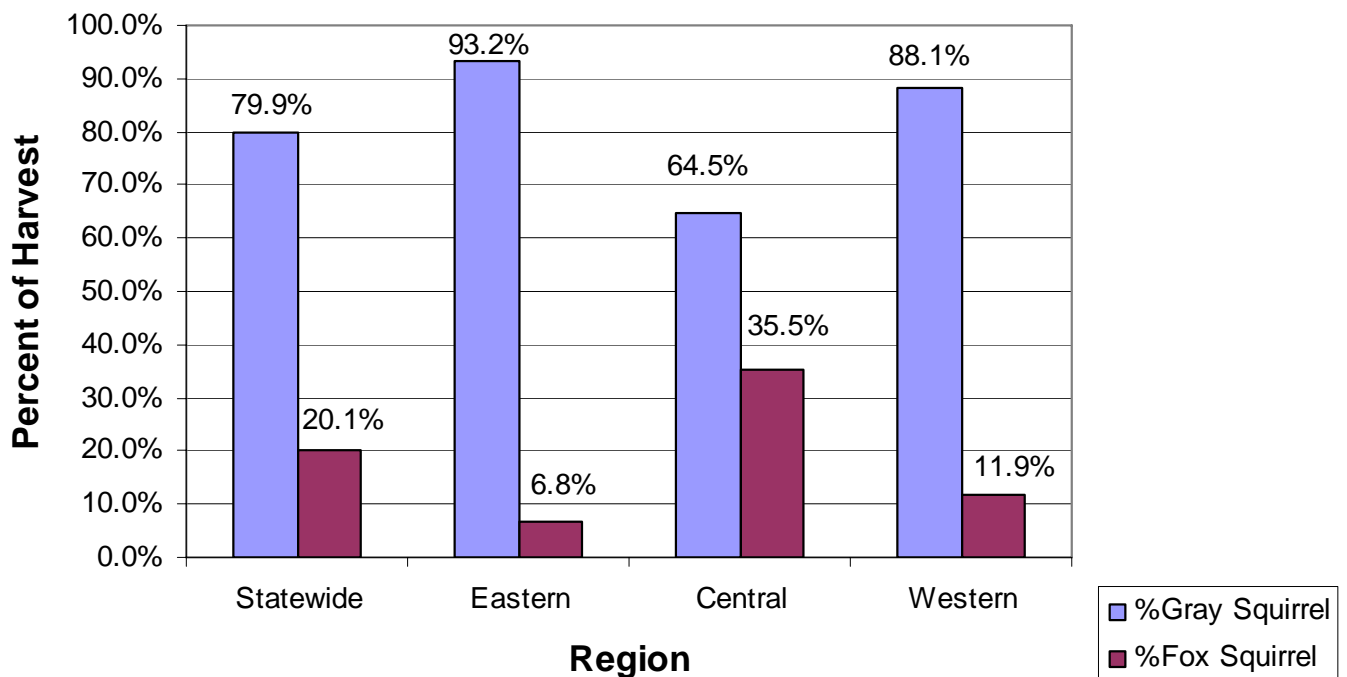


Figure 5: Squirrels Seen & Killed Per Hour by Month of Season

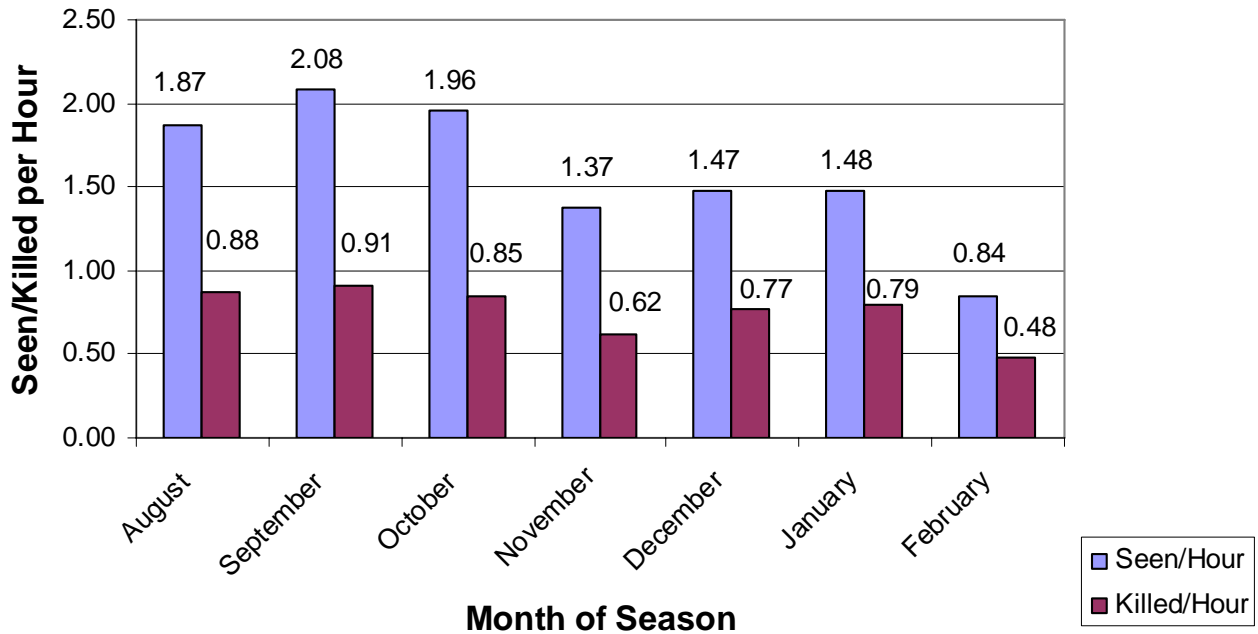
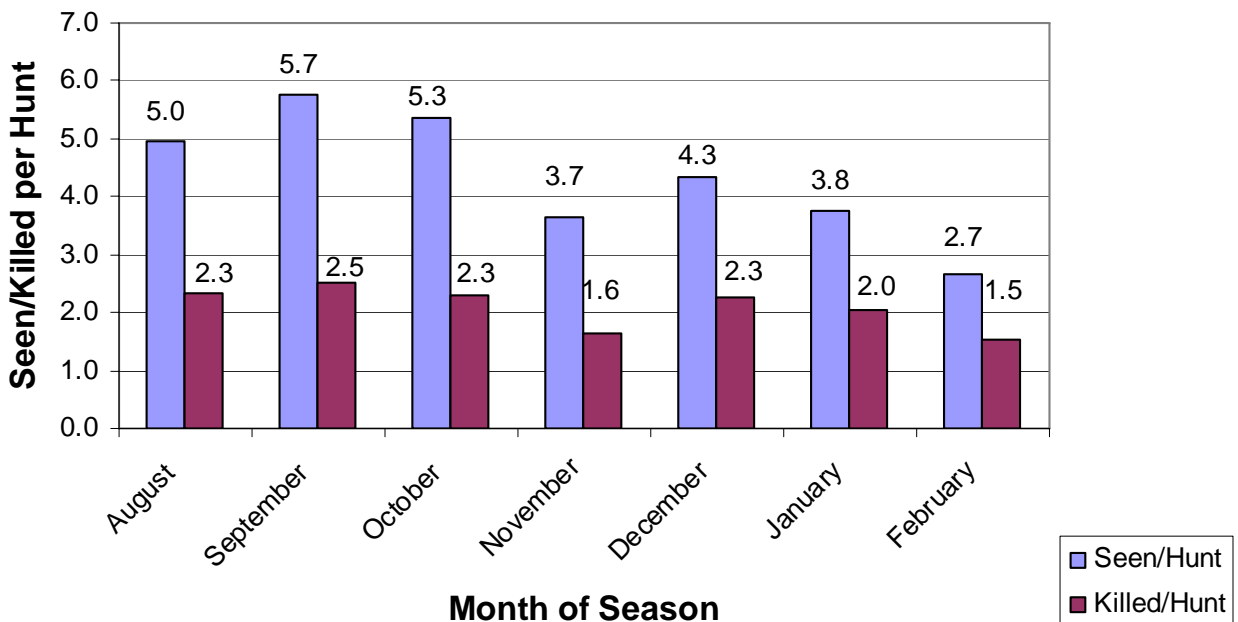


Figure 6: Squirrels Seen & Killed per Hunt by Month of Season



II. 2007 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 2007 fall survey, followed by the western region, central region, and eastern region. Overall the 2007 mast crop was 'spotty' depending on where you were located. Statewide, red oaks produced a "good" mast crop while white oaks, hickory, and beech were rated "poor" to "failure". White oak production was best in the eastern region.

Statewide

	Failure 0-19%	Poor 20-39%	Average 40-59%	Good 60-79%	Bumper 80-100%
White Oak		25.4			
Red Oak				73.6	
Hickory	17.9				
Beech		25.1			

Western Region

	Failure 0-19%	Poor 20-39%	Average 40-59%	Good 60-79%	Bumper 80-100%
White Oak	7.1				
Red Oak				66.2	
Hickory		26.9			
Beech	14.1				

Central Region

	Failure 0-19%	Poor 20-39%	Average 40-59%	Good 60-79%	Bumper 80-100%
White Oak		20.8			
Red Oak				75.5	
Hickory	17.5				
Beech	18.6				

Eastern Region

	Failure 0-19%	Poor 20-39%	Average 40-59%	Good 60-79%	Bumper 80-100%
White Oak			45.0		
Red Oak				76.7	
Hickory	11.7				
Beech		34.1			

III. 2008-09 Fall Squirrel Hunt Forecast

The 2007 mast crop was rated poor-failure for all mast producing groups except red oaks. A low abundance of nuts accompanied with competition for existing food sources among other animals means less food for squirrels going into the winter months. Female squirrels that were able to survive the winter may have been less fit entering the breeding season. Hunters should expect to see fewer squirrels this fall than they may have encountered in the past. If this is the case, squirrel populations should recover quickly following a good mast year. There are still plenty of squirrels in Kentucky's woods and hunters should expect to see an average of 1.5 squirrels/hour this fall. Have a safe and enjoyable squirrel season and thanks again for your support! And don't forget to turn in your Hunter Cooperator log at the completion of this years hunt!

