

2006-07 RUFFED GROUSE POPULATION STATUS REPORT



KENTUCKY DEPARTMENT OF FISH AND WILDLIFE RESOURCES

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METHODS

The 2006-07 Ruffed Grouse Population Status Report is a compilation of three surveys that the Kentucky Department of Fish and Wildlife Resources (KDFWR) conducts annually to track the status of Kentucky's grouse population. First, a drumming survey utilizes KDFWR biologists to conduct 15-stop driving routes during the month of April to listen for and record the number of grouse drumming at each stop. Second, the Grouse Hunter Log Survey summarizes hunting activity and success of hunters across the state. Combining the information we receive from those two surveys, we can create population trends from flush and harvest data and track hunter effort and success. The Grouse Wing Survey provides samples that can be used to provide information about the age and sex ratio of the harvest.

Kentucky's 2006-07 ruffed grouse hunting season began Nov. 13, 2006 and ended Feb. 28, 2007 (106 days). Hunters were able to pursue grouse in 53 eastern Kentucky counties. An early grouse season was open on 7 wildlife management areas (WMA) from Oct. 1 to Dec. 31, 2006 (90 days). Those WMAs included Beaver Creek, Big South Fork National River and Recreation Area, Cane Creek, Clay, Dix River, Fleming, and Lake Cumberland.

GROUSE POPULATION STATUS

Drumming Survey – The number of drummers decreased slightly from last year (Figure 1). The overall trend has been declining since the survey began nearly 20 years ago, most likely due changes in grouse habitat. Many survey stops were once characterized by dense understories, but over time, they have developed into more mature stands of timber. However, the number of drummers has remained stable over the last 4 years. This year's average of 7.18 drummers/100 stops is slightly lower than the 19 year average of 8.14.

Flush Rate – The flush rate showed a slight decrease in the 2006-07 season compared to the previous season (Figure 2). The 2006-07 flush rate of 0.71 birds per hour was below the long-term average of 0.91 birds per hour. The overall trend of the grouse population based on flush rates is slowly decreasing. Flush rate data is the most reliable indicator of the grouse population if sample sizes are adequate.

HUNT AND HARVEST DYNAMICS

Hunt Characteristics - Hunters reported data from 454 hunts in 2006-07. The typical hunt was 3.8 hours long consisting of roughly 2 hunters. Dogs were used on 96% of all hunts with an average of 1.8 dogs/hunt. Hunting parties harvested 0.6 grouse/hunt. Hunting effort increased steadily as the season advanced (Figure 3). Also, as the season progressed, hunters flushed more grouse/hour, but the harvest remained fairly constant (Figure 4).

Harvest Age and Sex Ratio – The percentage of adult and juvenile grouse in the harvest is an indirect measure of reproductive success. Hunters who submitted wings and rump feathers of harvested grouse helped us attain an estimate of the number of juvenile grouse killed per adult hen (Figure 5). The 2006-07 season estimate of 4.76 was significantly higher than both the previous year and the overall average. Less than 1% of the collected wings and rump feathers could not be sexed.

In general, the proportion of juveniles in the harvest is a poor indicator of population trend. For example, the highest recorded proportion of juveniles killed per adult hen occurred during the 1998-99 season. However, the flush rate that same season was the third lowest recorded since the survey began. The contradiction implies that the wing data is unreliable unless there was an extremely high rate of adult mortality, which was unlikely. Also, increasing trends in production should correspond to a growing population, but the flush data shows otherwise. The inexperience of juveniles makes them more susceptible to harvest, which further minimizes the reliability of the wing data.

OUTLOOK FOR THE 2007-08 GROUSE HUNTING SEASON

Kentucky grouse hunters should expect a good hunting season this year. Unseasonably late freezes across many portions of the state could result in a poor hard mast crop. Grouse will rely on soft mast if acorns and other hard mast are limited. Mast failures tend to increase concentrations of grouse making birds easier to locate. Research has shown that the productivity of hens is linked to the fall mast crop. Simply, healthy hens lay better eggs and are better able to raise a brood. Last fall's mast survey was moderately-heavy for the second consecutive year. Add to that a relatively mild winter and we should see several juvenile grouse in the woods this fall. As always, there will be local areas where grouse are plentiful, and areas where grouse are scarce. Get outside and scout to find the best areas in your neck of the woods!

ADDITIONAL HELP IS NEEDED

Grouse hunters can improve the survey information used to track Kentucky's grouse population. First, more participants are needed. Please prompt your friends and neighbors to track their hunts and pass that information on to KDFWR. Forms are available from the Department by calling (1-800-858-1549) or by visiting the Department website: fw.ky.gov/smallgamelogs.asp. We remain pleased with the Hunter Log Cooperator Survey and hope to see it expand with every passing season. The KDFWR Wildlife Division sincerely thanks the grouse hunters who have participated in the grouse surveys for many years. Your dedication makes this report possible and helps track grouse populations across the state.

Figure 1. Individual displaying grouse from Grouse Drumming Survey in Kentucky, 1988-2007.

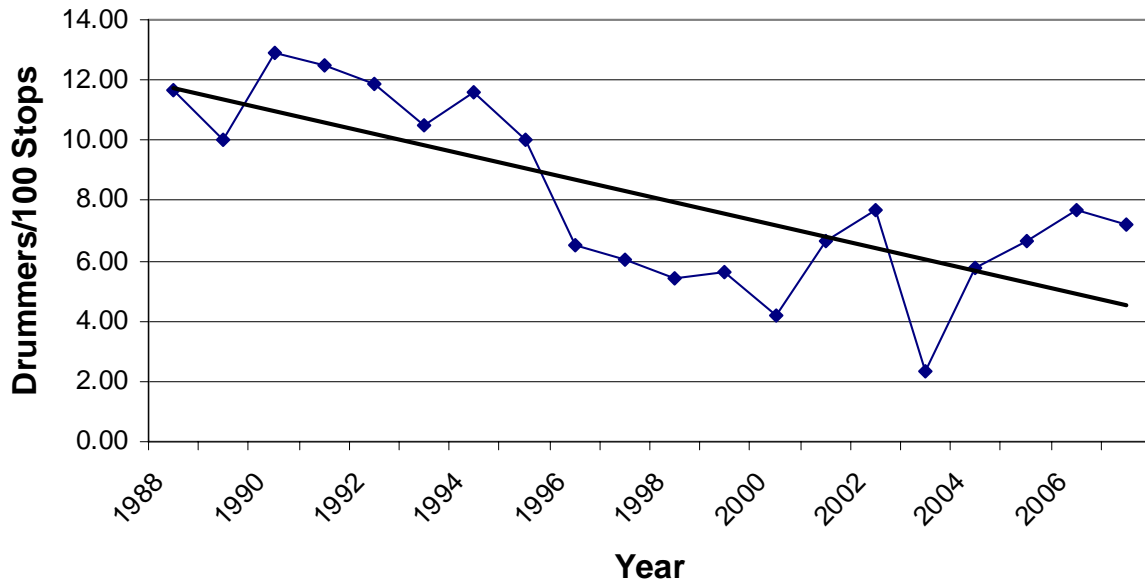


Figure 2: Flush rates from grouse hunter logs in KY, 1989-2007

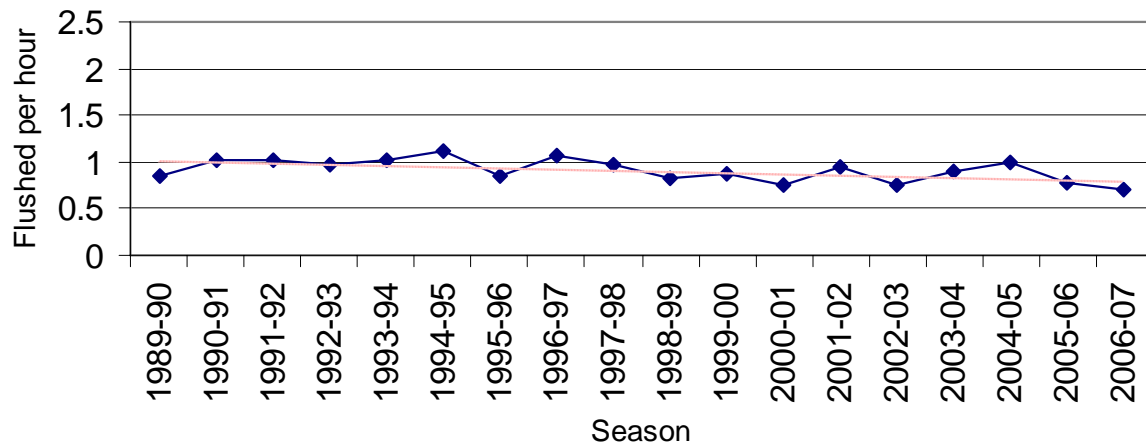


Figure 3: Hunts per available day from grouse hunter logs in KY, 2006-07.

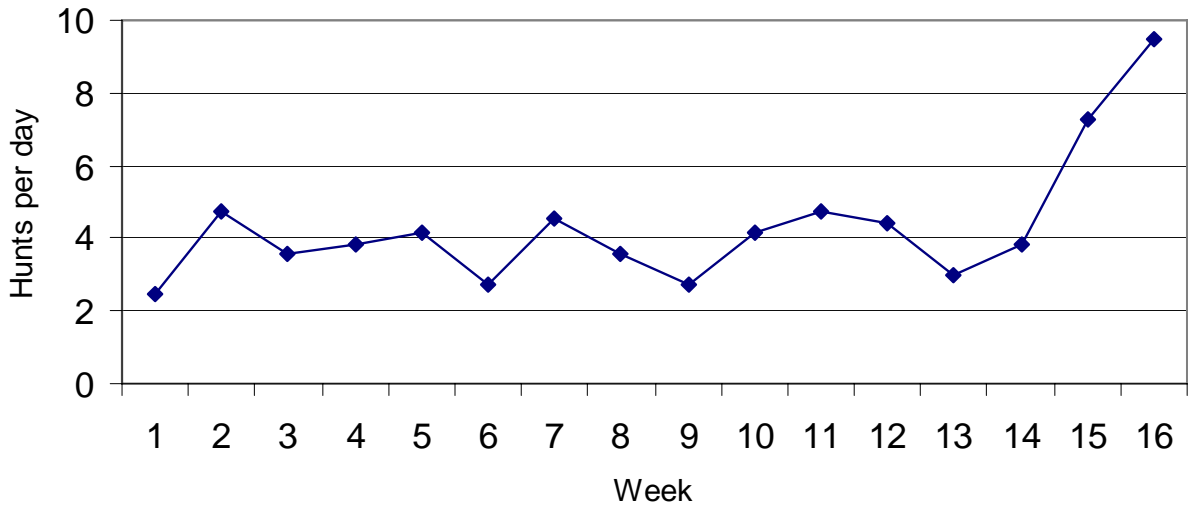
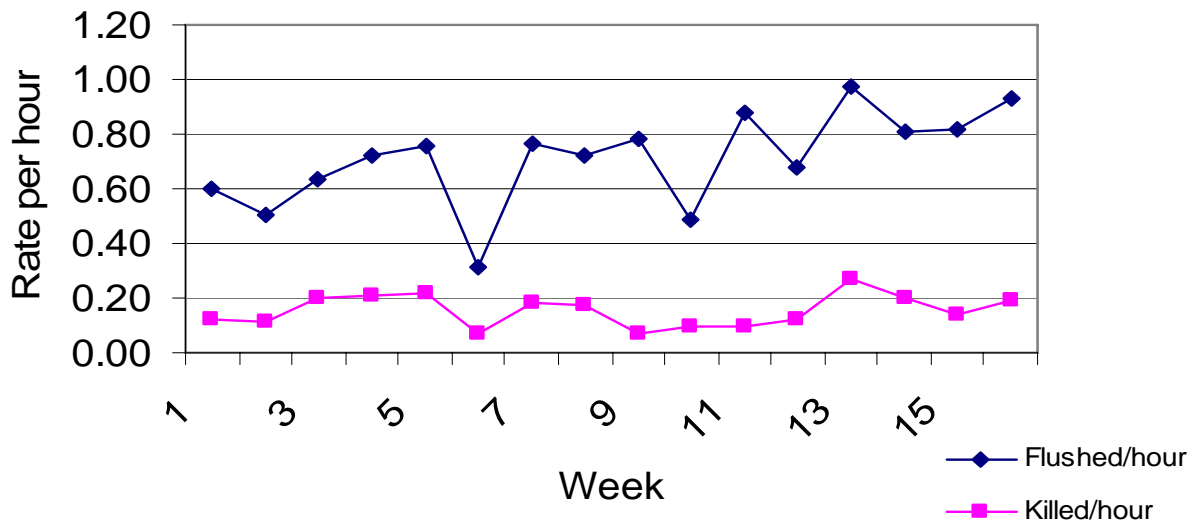
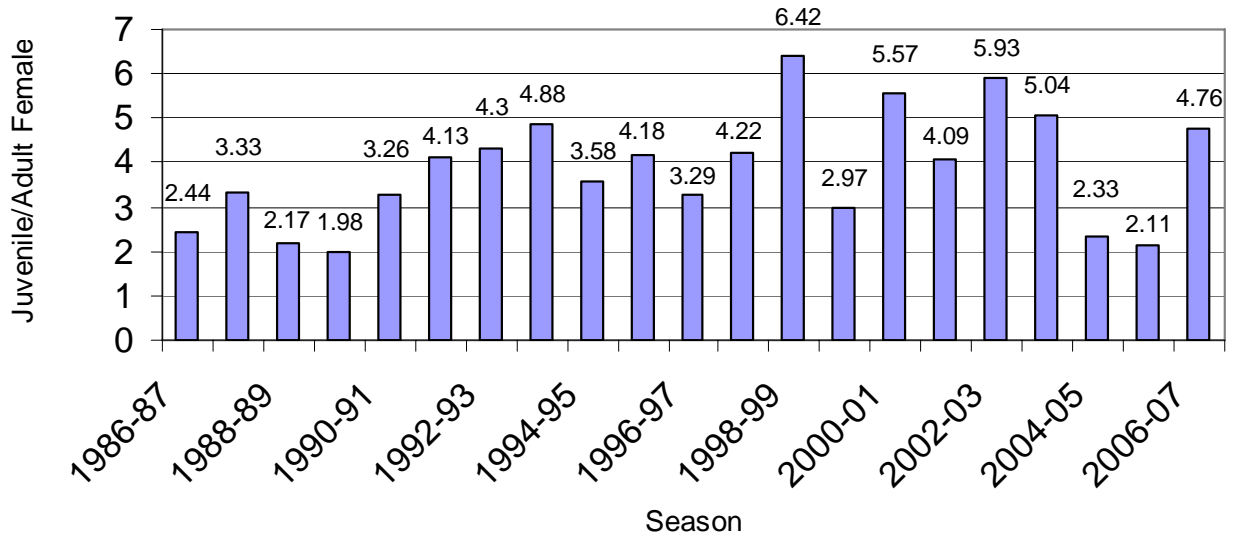


Figure 4: Flush and Harvest Rates From Grouse Hunter Logs in KY, 2006-07



**Figure 5: Juvenile/adult female grouse rates from Hunter
Cooperator Survey, 2006-07**



Appendix A. Kentucky Ruffed Grouse Drumming Survey Results (Drummers heard from a station on both survey days assumed the same.)

Route	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
BLUEGRASS REGION																				
Harrison County	5	4	6	9	4	2	2	3	3	5	.	0	0	0	.	.	.	.	.	.
Madison County	.	.	2	3	5	0	5	.	3	3	0	2	0	0	.	.	.	.	.	.
Lapland WMA	0	1	1	2	.	1	2	2	0	1	1	0	0	0	.	.	.	.	.	.
NORTHEAST REGION																				
Bracken County	2	1	0	0	1	0	0	.	.	.	.	2	1	0	2	0	0	1	.	1
Grayson Lake WMA	5	4	3	3	3	1	6	7	1	0	1	1	0	4	1	0	1	5	2	2
Fleming WMA	8	5	5	7	4	0	1	0	2	3	2	2	3	4	5	.	1	.	10	7
Paintsville Lake WMA	2	.	.	2	8	8	6	1	2	3	1	1	2	5	2	0	1	0	0	3
Yatesville Lake WMA	.	3	5	5	4	6	7	2	3	0	2	1	0	1	1	1	5	5	4	0
Clay WMA	2	4	3	2	3	3	2	3	2	1	5	.	4	2	.	.	.	.	1	0
Fishtrap Lake WMA	6	6	3	1	1	12	8	4	7	4	6	4	2	6	6	.	3	.	1	.
N. Grouse Demo Area	4	1	4	4	2	2	1	1	1	0	0	0	0	2	2	2	4	5	5	4
SOUTHEAST REGION																				
Greenbriar Ridge	.	.	.	.	.	.	.	0	0	0	0	0	0	0	0	.	.	.	.	.
Addington	.	.	.	.	.	.	.	9	0	.	.	.	.	.	.	.	.	.	.	.
Robinson Forest	.	.	.	.	.	.	.	5	0	.	.	.	5	2	.	.	.	.	.	.
Beech Creek	.	.	.	.	.	.	.	0	0	0	.	1	1	1	0	1	2	0	0	0
Black Mountain	6	3	9	2	7	10	5	8	.	4	2	3	2	2	2	.	.	.	.	.
Mill Creek WMA	2	2	2	2	3	1	2	3	2	1	1	3	3	3	3	0	2	2	2	3
War Fork	1	4	4	3	2	0	4	2	1	2	2	3	2	3	4	1	2	2	2	4
Quicksand	.	.	.	2	7	4	3	6	.	2	.	3	2	1	0	.	.	.	.	.
Cane Creek	0	.	.	0	2	1	0	0	1	1	1	4	1	3	3	2	2	1	2	2
Redbird WMA	.	.	6	16	.	7	11	9	3	.	2	3	1	5	9	.	.	2	.	0
Pine Mountain WMA	3	2	1	4	2	2	2	1	5	2	1	1	0	2	.	.	2	.	.	.
South Fork	7	3	.	2	1	2	2	3	1	1	2	0	0	0	0	0	0	0	1	0
Buck Knob	0	0	.	1	1	1	0	0	1	2	1	1	0	0	0	1	0	0	0	0
Blue Diamond Coal	.	.	.	.	.	.	.	.	.	.	.	4	2	3	4	.	0	.	.	.
Tunnel Ridge	3	5	6	3	6	3	4	0	5	3	0	0	0	0	0	0	1	.	.	2
Total	56	48	60	73	66	66	73	69	43	38	30	39	31	49	44	8	26	23	30	28
Stops	480	480	465	585	555	630	630	690	660	630	555	690	735	735	570	345	450	345	390	390
Drummers/100 Stops	11.67	10.00	12.90	12.48	11.89	10.48	11.59	10.00	6.52	6.03	5.41	5.65	4.22	6.67	7.72	2.32	5.78	6.67	7.69	7.18