

# 2011-12 NORTHERN BOBWHITE POPULATION STATUS REPORT



**KENTUCKY DEPARTMENT OF FISH AND WILDLIFE RESOURCES**

Prepared By:  
Ben Robinson  
Wildlife Biologist





## **METHODS**

The 2011-12 Northern Bobwhite Population Status Report is a compilation of three surveys the Kentucky Department of Fish and Wildlife Resources conducts annually to monitor quail production and hunter success. First, the **Quail Wing Survey** provides samples that can be used to determine the age and sex of quail. Juvenile quail wings collected from successful quail hunters across the state are backdated to determine the hatch date, which allows us to identify peak hatching and length of the nesting season. Additionally, juvenile to adult female ratios can be generated to estimate annual recruitment rates. Second, the **Quail Hunter Log Survey** summarizes hunting activity and success of hunters across the state. With that information, we can create population trends from flush and harvest data and track hunter effort and success. Finally, the rural mail carriers of Kentucky contribute observations from their routes through the **Mail Carrier Survey**. The last full week of July, rural route carriers record quail observations and miles driven. We use that information to develop an index of the population and as a means to make predictions about the upcoming hunting season.

All surveys are strictly voluntary and we strongly encourage all Kentucky quail hunters and rural mail carriers to participate in these surveys. Hunter cooperators receive this report, detailing the past year's hatch, hunting season results, and expectations for the upcoming season. Cooperators also receive a new hunting log and wing envelopes 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. Quail Wing Survey**

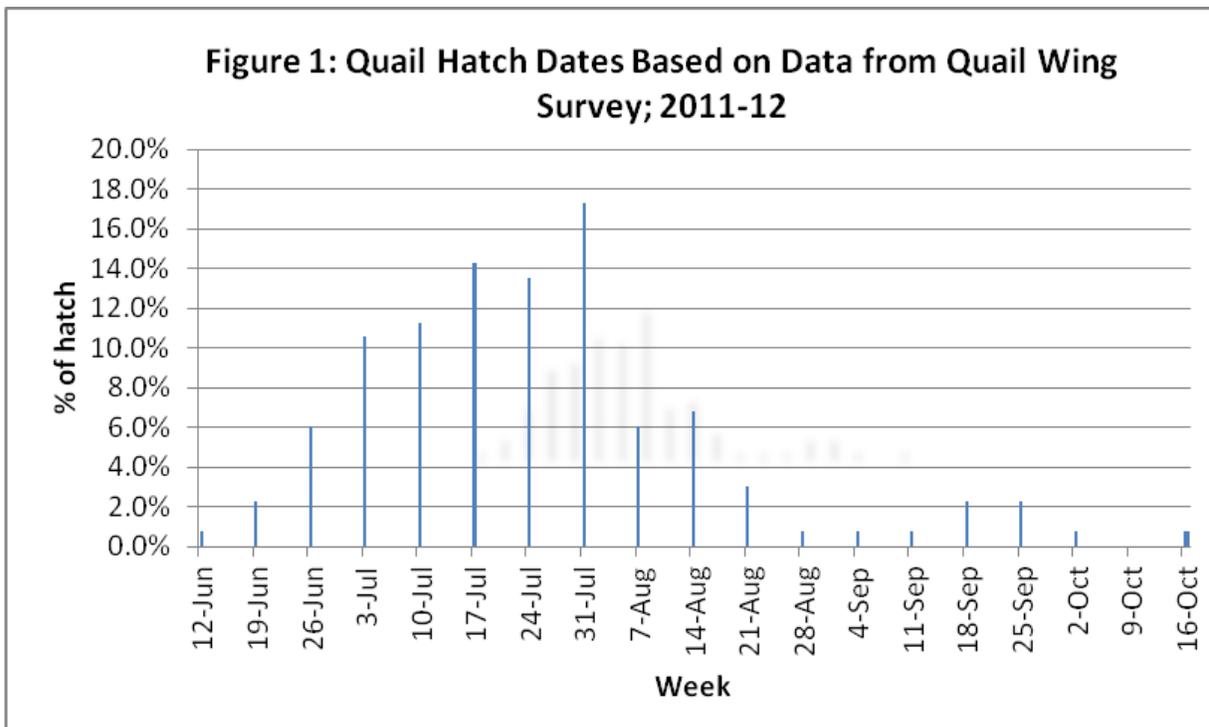
Envelopes were provided to quail hunters prior to the 2011-12 hunting season. Successful quail hunters mailed in one wing from each harvested bird.

Age of the harvested birds was determined by measuring the length of certain primary feathers (Petrides 1942, Petrides and Nestler 1943, Rosene 1969). Juveniles were backdated from date of harvest to determine the primary hatching dates for the nesting season. Hunters in the field, utilizing instructions on the wing collection envelopes, determined the sex of collected individuals.

## 2011-12 Wing Data

- Hunters mailed in 303 wings.
- 33 wings could not be aged due to damage while in the field.
- Juvenile = 87% Adult = 13%
- Male = 44% Female = 43% Unknown = 13%
- 92% of the 2011 hatch occurred before September 1.
  - *September 1st date is important, because birds hatched after this date are expected to have low survival and are not likely a part of next spring's breeding population.*

The peak hatch occurred during the period of late July – early August as indicated in Figure 1



## II. Hunter Log Survey

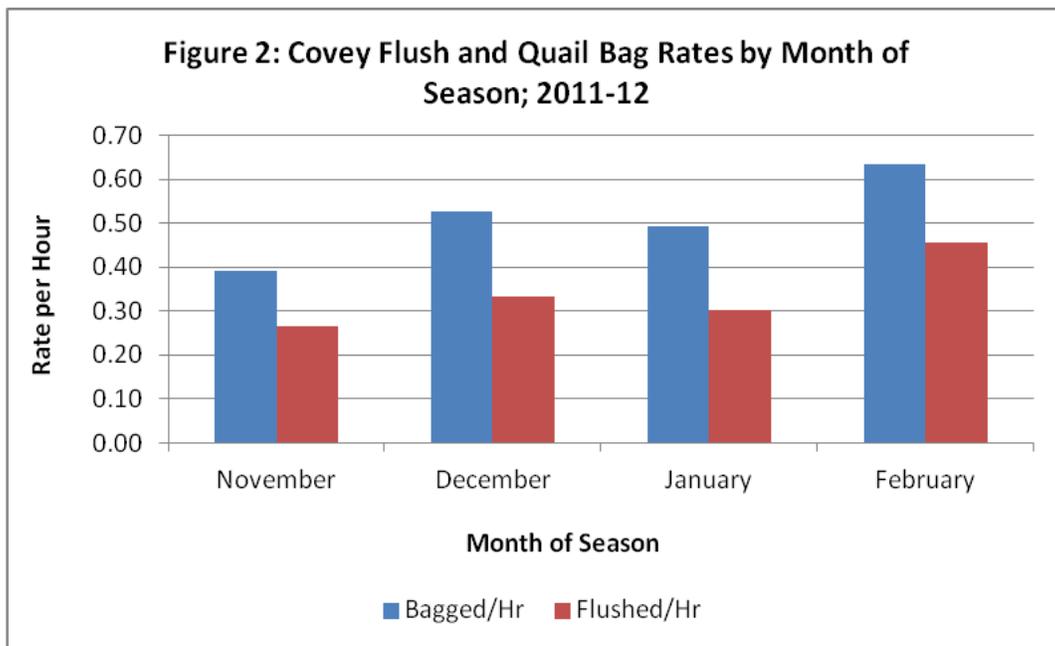
The Quail Hunter Log Survey is a diary-type log that hunters keep to date throughout the hunting season. Hunters record specific information about their hunts including date, hours hunted, number of hunters, coveys flushed, number of birds harvested, among others. Hunt data is divided weekly and monthly to monitor differences throughout the season.

- Hunting logs were received from 33 hunters.
- Hunters averaged 7.4 quail hunts during the 2011-12 season.
- Average hunt lasted 3.2 hours.
- Data was provided from 446 quail hunts.
- Hunters averaged 1.6 quail killed/hunt.

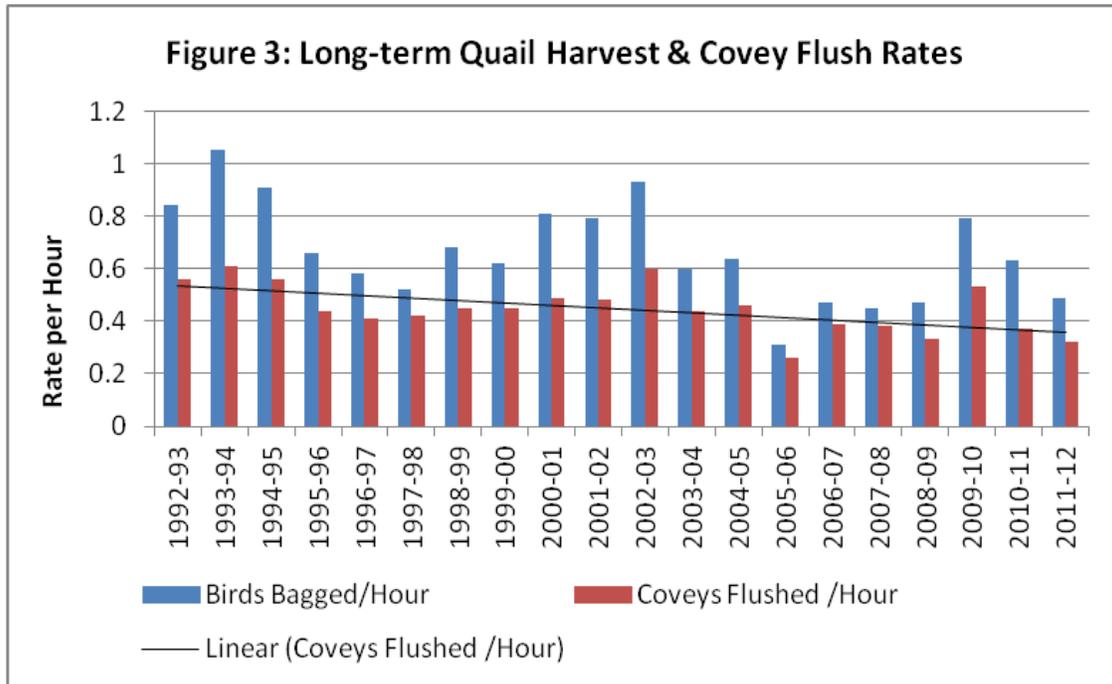
*The most important data collected from the hunter logs are the flush and bag rates.*

- 2011-12 covey flush rate = 0.32 coveys/hour (1.03/hunt).
- 2011-12 bag rate = 0.49 birds/hour (1.61/hunt).
- The most coveys flushed on a single hunt = 6 coveys.

The rate at which coveys were flushed along with harvest rates are shown below (Figure 2).



According to our data, the 2011-12 season was not as productive as the previous season. Flush and harvest rates both showed a slight decrease (Figure 3).



### III. Mail Carrier Survey

The Mail Carrier Survey gives us a glimpse of what we can expect for the upcoming 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 data showing whether the population is up, down, or stable.

Volunteer mail carriers record all observations of quail and rabbits as they travel their normal mail delivery routes. The blank survey cards are sent to the postmasters 1 week prior to the census period, which was the last full week (6 delivery days) of July. Each observer recorded the number of days surveyed, the length of the route, and each quail observation on the card. The state of Kentucky is divided into four weather divisions for comparison of quail data (Appendix A).

## 2012 Mail Carrier Survey

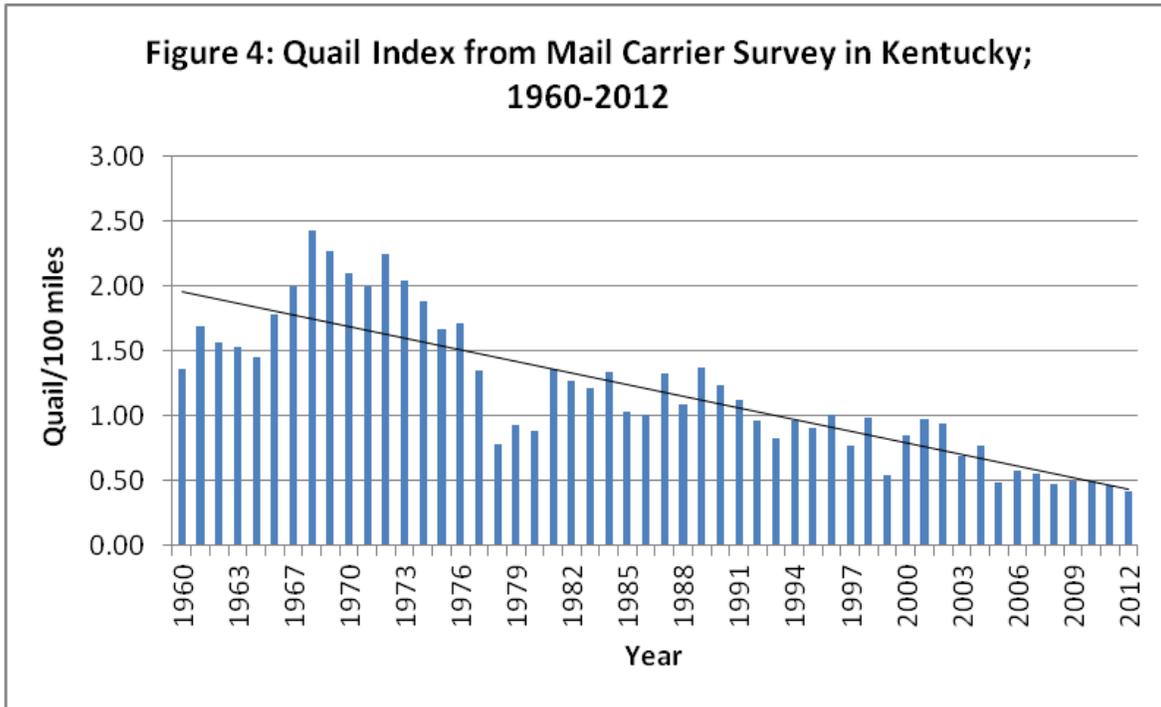
- 775 mail carriers returned survey cards.
- 1,500 survey cards were issued which corresponds to a 52% response rate.
- Rural carriers drove 269,677 miles.
- Total number of quail observed = 1,146
- Statewide observation rate = 0.42 quail/100 miles.

Table 1. Comparison of total quail/100 miles observed by rural mail carriers.

WEATHER DIVISION	TOTAL QUAIL/100 MILES			PERCENT CHANGE	
	Average			Average	
	1960-2012*	2011	2012	1960-2012	2011 to 2012
<u>Western</u>	2.17	0.61	0.47	-78.3%	-22.9%
<u>Central</u>	1.20	0.56	0.48	-60.0%	-14.2%
<u>Bluegrass</u>	0.80	0.40	0.44	-45.0%	+10.0%
<u>Eastern</u>	0.57	0.23	0.30	47.3%	+30.4%
<b>Statewide</b>	<b>1.20</b>	<b>0.46</b>	<b>0.42</b>	<b>-65.0%</b>	<b>-8.6%</b>

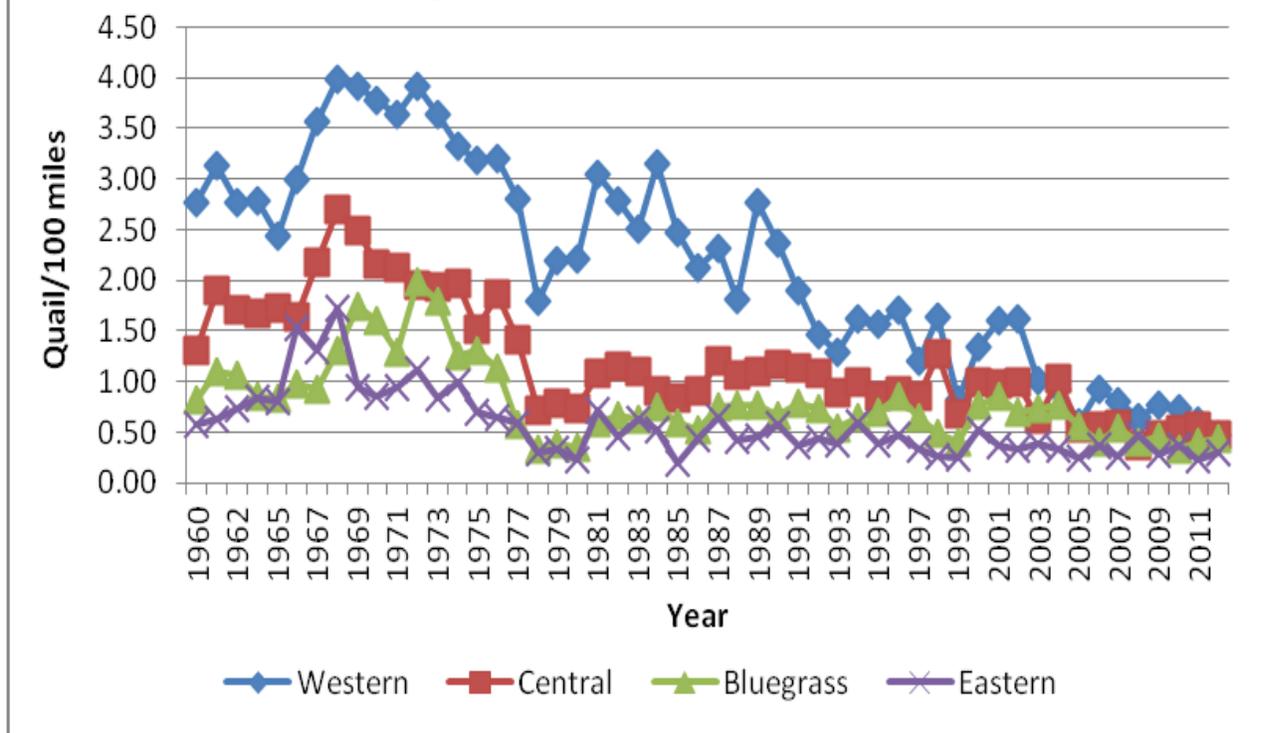
\*No data available for 1964.

Since 1960, mail carrier data have shown a steady decline in Kentucky's quail population (Figure 4).



Weather regions have shown differing capacities to produce quail. Historically, the western and central weather regions have had the highest propensity to produce and sustain quail. For example, the western region originally contributed 50 percent of mail carrier quail observations and heavily affected the statewide results. Each year the regions become more similar as populations decline (Figure 4). Therefore, the quantity and quality of quail habitat in the west and central regions are approaching those of the eastern and bluegrass regions. Cleaner agricultural practices, fewer fallow areas, and widespread fescue plague the quail of the state, and it is particularly evident in western Kentucky by the plummeting mail carrier index. On the bright side, these data can help focus our efforts to maximize management and generate the largest northern bobwhite response possible.

**Figure 5: Quail Indices for Mail Carrier Survey by Weather Region in Kentucky; 1960-2012**



## SUMMARY

The mail carrier survey is conducted during the peak of the breeding season (according to the information collected from our wing cooperators), and the outcome of birds nesting during the survey may be critical to the quality of the upcoming season. So, the Mail Carrier and Hunter Log Survey may not always match. Generally, a good Mail Carrier Survey should correspond to a good hunting season, but a poor Mail Carrier Survey does not guarantee poor hunting conditions.

The Missouri Department of Conservation conducts a similar survey to Kentucky's hunter logs and measures hunt quality by the following:

- 1 hour per covey flush = excellent
- 2 hours per covey flush = good
- 3 hours per covey flush = poor

Utilizing this rating system, the 2010-11 quail-hunting season (roughly 3 hours per covey flush) in Kentucky would be rated poor.

In summary, hunters should expect the upcoming season to be similar to last year in many parts of the state, with better than average hunting in some areas.

The winter of 2011-12 was relatively mild which should mean more birds were alive going into the spring and summer breeding season. Spring came early in 2012 and we received numerous reports of early nesting activity around Kentucky. However, as we entered into the summer months, the western portions of the state experienced a severe drought, which likely resulted in limited reproduction. Areas with adequate rainfall could experience good quail hunting this fall.

Hunters in western and central Kentucky should look for forested areas that suffered damage during the 2009 ice storm. These areas should have significant understory growth 2 ½ years after the ice storms and should provide good cover for quail. Forest edges near row crop fields could be productive this season.

## **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 quail populations and hunting seasons. With that in mind, we ask that you recruit your friends and neighbors who also hunt quail to join you in being a hunting cooperator. We need many more cooperators to accurately track quail populations across the state.

Last season, only 33 hunters completed hunting logs. Fortunately, those hunters did a good deal of hunting (446 hunts). Nevertheless, we would like to have at least 1,000 hunts well distributed across the state. The more cooperators we have, the more accurate picture we have of our quail populations. The hunting logs are available on the internet at <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). We will gladly send you a gift to say "thank you" for participating. 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.

## Literature Cited

- Ellis, R. J. 1972. The Oklahoma quail hunter. Proc. Natl. Bobwhite Quail Symp. 1:306-342.
- Fies, Michael L. 1994. Quail hunter cooperators report. Virginia Dept. Game and Inland Fish., Verona, VA. 9 pp.
- Gudlin, Mark. 1994. Quail hunter survey report- 1993-1994. TWRA Tech. Rep. No. 94-3. Tennessee Wildlife Resources Agency, Nashville, TN. 9pp.
- Kabat, C. and D. R. Thompson. 1963. Wisconsin quail, 1834-1962: Population dynamics and habitat management. Wis. Cons. Dept. Tech. Bull. 30. 136pp.
- Petrides, G. A. 1942. Age determination in American gallinaceous game birds. Trans. N. Am. Wildl. Conf. 7 : 308-328.
- \_\_\_\_\_ and R. B. Nestler. 1943. Age determination in juvenile bobwhite quail. Am. Midl. Nat. 30(3) : 774-782.
- Reeves, M. C. 1954. Bobwhite quail investigation final report. Indiana Dept. Cons. 151 pp.
- Rosene, W. 1969. The bobwhite quail, its life and management. Rutgers Univ. Press, New Brunswick, NJ. 13pp.

Cover photo from Quail Unlimited Mall website ([www.qumall.com](http://www.qumall.com)). Artist Richard Plasschert's 1983 Quail Stamp print.