

2012-13 NORTHERN BOBWHITE POPULATION STATUS REPORT



KENTUCKY DEPARTMENT OF FISH AND WILDLIFE RESOURCES

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METHODS

The 2012-13 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

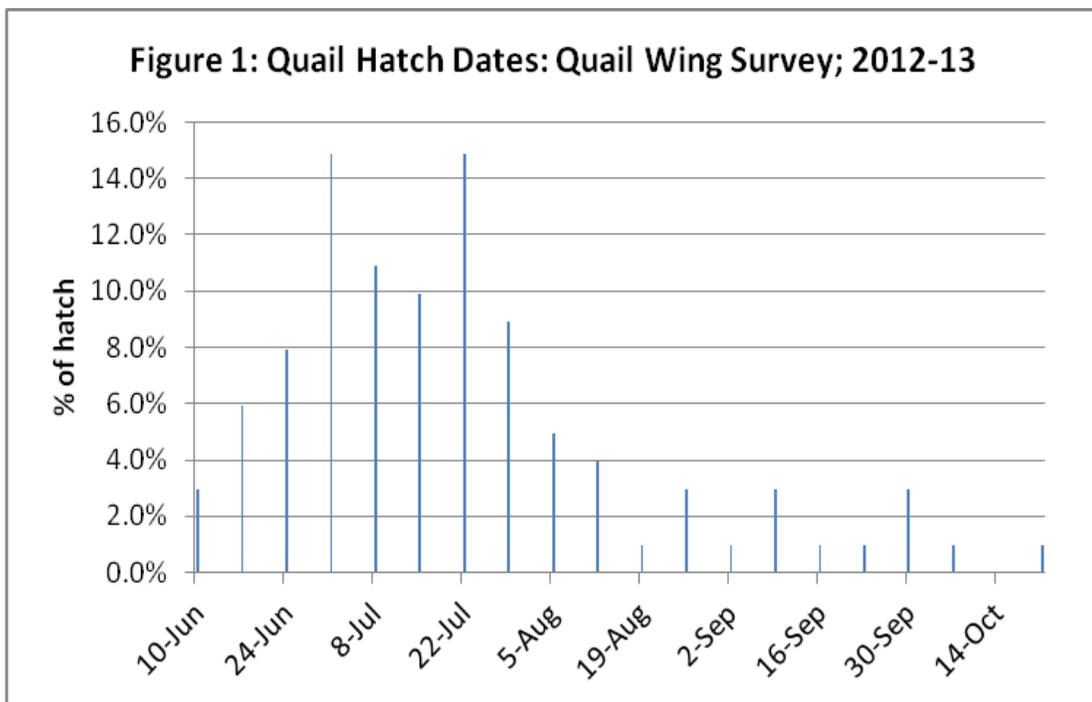
Envelopes were provided to quail hunters prior to the 2012-13 hunting season. Successful quail hunters mailed in one wing from each harvested bird.

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.

2012-13 Wing Data

- Hunters mailed in 217 wings.
- 15 wings could not be aged due to damage while in the field.
- Juvenile = 82% Adult = 18%
- Male = 50% Female = 34% Unknown = 16%

The peak hatch occurred during the month of July as indicated in Figure 1:



II. Hunter Log Survey

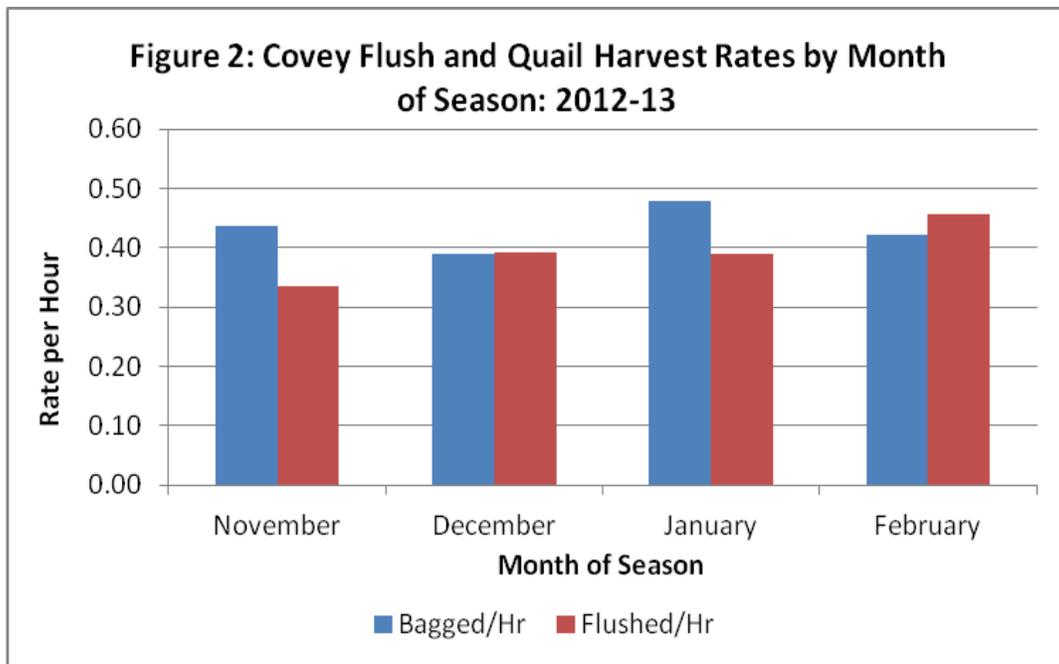
The Quail Hunter Log Survey is a diary-type log that hunters keep to date throughout the hunting season. Hunters record specific information about their hunts including date, hours hunted, number of hunters, coveys flushed, number of birds harvested, among others. Hunt data is divided weekly and monthly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

- Hunting logs were received from 28 hunters.
- Hunters averaged 12.6 quail hunts during the 2012-13 season.
- Average hunt lasted 3 hours.
- Data was provided from 354 quail hunts.
- Hunters averaged 1.3 quail killed/hunt.

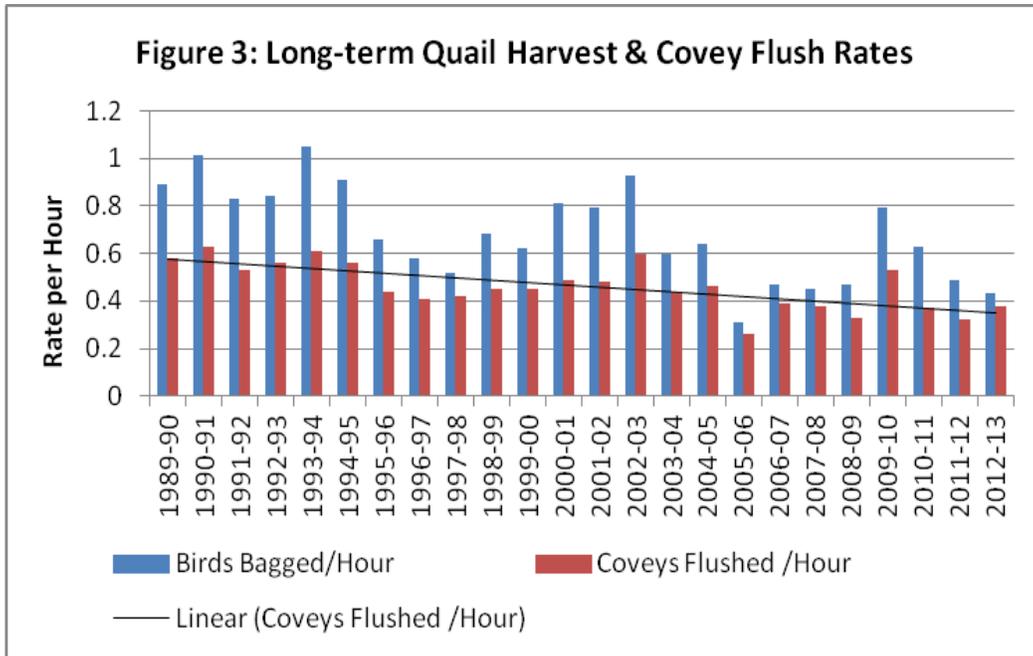
The most important data collected from the hunter logs are the flush and bag rates.

- 2012-13 covey flush rate = 0.38 coveys/hour (1.14/hunt).
- 2012-13 bag rate = 0.43 birds/hour (1.30/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 2012-13 season flush rate was slightly higher than the previous season. Harvest rates 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 53 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).

2013 Mail Carrier Survey

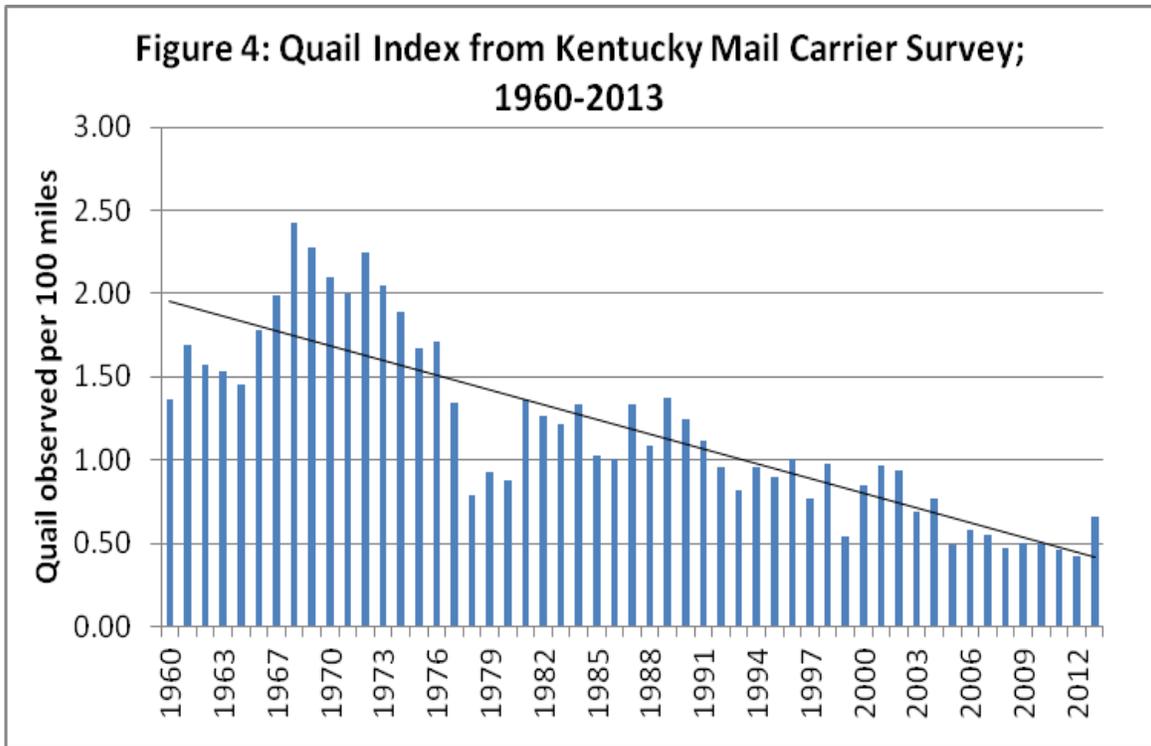
- 789 mail carriers returned survey cards.
- 1,486 survey cards were issued which corresponds to a 53% response rate.
- Rural carriers drove 273,993 miles.
- Total number of quail observed = 1,810
- Statewide observation rate = 0.66 quail/100 miles.

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

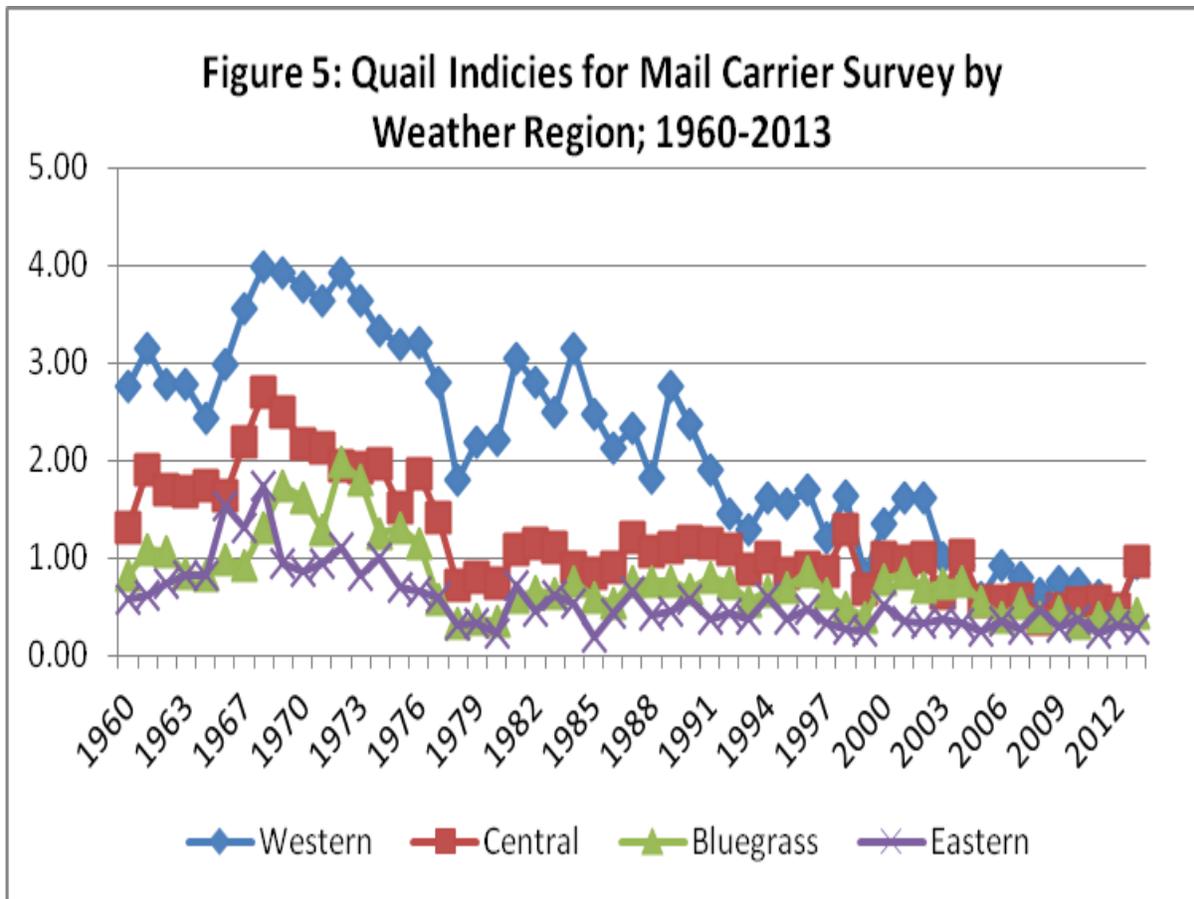
WEATHER DIVISION	TOTAL QUAIL/100 MILES			PERCENT CHANGE	
	Average 1960-2013*	2012	2013	Average 1960-2013	2012 to 2013
<u>Western</u>	2.14	0.47	0.94	-65.9%	+100%
<u>Central</u>	1.20	0.48	0.97	-25.3%	+102%
<u>Bluegrass</u>	0.79	0.44	0.43	-47.5%	-2.2%
<u>Eastern</u>	0.56	0.30	0.26	-55.1%	-13.3%
Statewide	1.19	0.42	0.66	-51.8%	+57.1%

*No data available for 1964.

Since 1960, mail carrier data have shown a steady decline in Kentucky's quail population (Figure 4). However, this year the survey saw a **57%** increase from the previous year!



Kentucky's 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 5). This year, both the Western and Central Regions each saw large increases in the number of birds seen.



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 2011-12 quail-hunting season (roughly 3 hours per covey flush) in Kentucky would be rated poor.

Predictions

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

The winter of 2012-13 was relatively mild, which should mean more birds were alive going into the spring and summer breeding season. With the exception of a few heavy rain events in early July, the state experienced excellent breeding season weather. Adequate rainfall has created lush vegetation leading to good brood habitat for young chicks.

The increase in the number of quail seen during the mail carrier survey in the Central weather region is likely the result of massive amounts of habitat throughout the CREP (Conservation Reserve Enhancement Program) area. We are receiving many reports of excellent hunting in these counties. Eight covey flushes in a day have been reported.

Hunters in western and central Kentucky should also look for forested areas that suffered damage during the 2009 ice storm. These areas should have significant understory growth 3 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 28 hunters completed hunting logs. Fortunately, those hunters did a good deal of hunting (354 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.

