



# KDFWR Wild Turkey Spring Season Update

Prepared by Zak Danks, Wild Turkey Program Coordinator, 5/18/17

## Introduction

This report provides an update on Kentucky’s 2017 Spring Wild Turkey Hunting Season. Kentucky’s wild turkey population and its management have undergone drastic changes over the last 60 years. From an estimated 850 birds statewide in 1954, through the release of over 6,700 birds from 1978-1997, turkey flocks and hunting opportunities are present in all 120 counties. Spring 2017 proved another great year for Kentucky hunters.

## Spring Harvest 2017

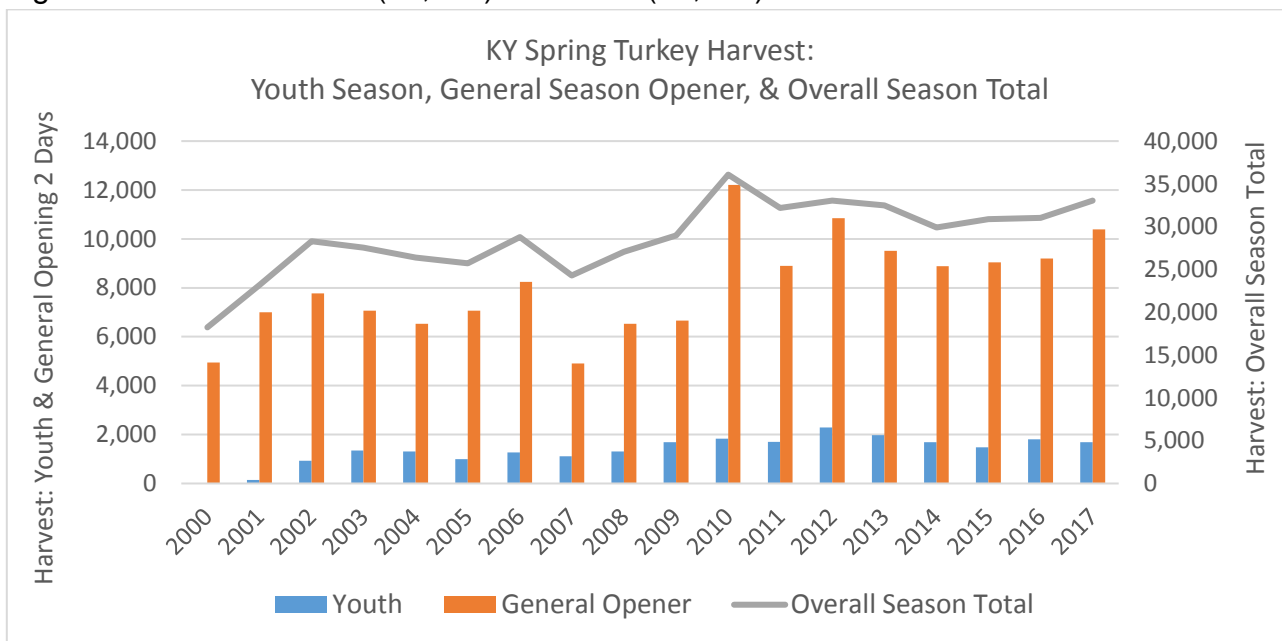
- Hunters telechecked 33,061 birds during the 2017 spring season, including the 2-day youth and 23-day general seasons.
- This year’s harvest was the third highest ever (only 6 fewer than 2012 [33,067], the second-highest harvest), and was 6.5% higher than the spring 2016 harvest.
- Despite the Sunday of opening weekend falling on Easter Sunday, the opening weekend harvest was the third highest ever (10,389).

Spring harvest for wild turkeys in Kentucky, 2016 and 2017.

Period	Year		% change
	2016	2017	
Youth Season (2 Days)	1,856	1,693	-8.8%
Statewide Opening Weekend	9,205	10,388	+12.9%
Remaining 21 Days of season	19,986	20,975	+4.9%
<b>Total</b>	<b>31,047</b>	<b>33,061</b>	<b>+6.5%</b>

- Weather has an impact on spring turkey harvest through its impact on hunter effort.
  - Youth season was marked by low temperatures with little wind or rain.
  - Statewide opening weekend had warm weather (avg. ~70), some rain on Easter Sunday (0.2-2 in.), and relatively high winds (10-12 mph) in some areas.
  - The first and third weekends were warm (60s-70s), while the second and fourth weekends were cooler (40s-50s).
  - All but the fourth/final weekend had rain, and average wind speeds were at least 8-12 mph over much of the state all weekends.
  - Harvest was up from last year despite variable, mediocre weather.

- Youth season harvest (1,693) was 9% less than last season but within 2% of the 5-year average (1,728).
- Opening weekend harvest for the general statewide season (10,389) was the third highest ever behind 2010 (12,211) and 2012 (10,847).

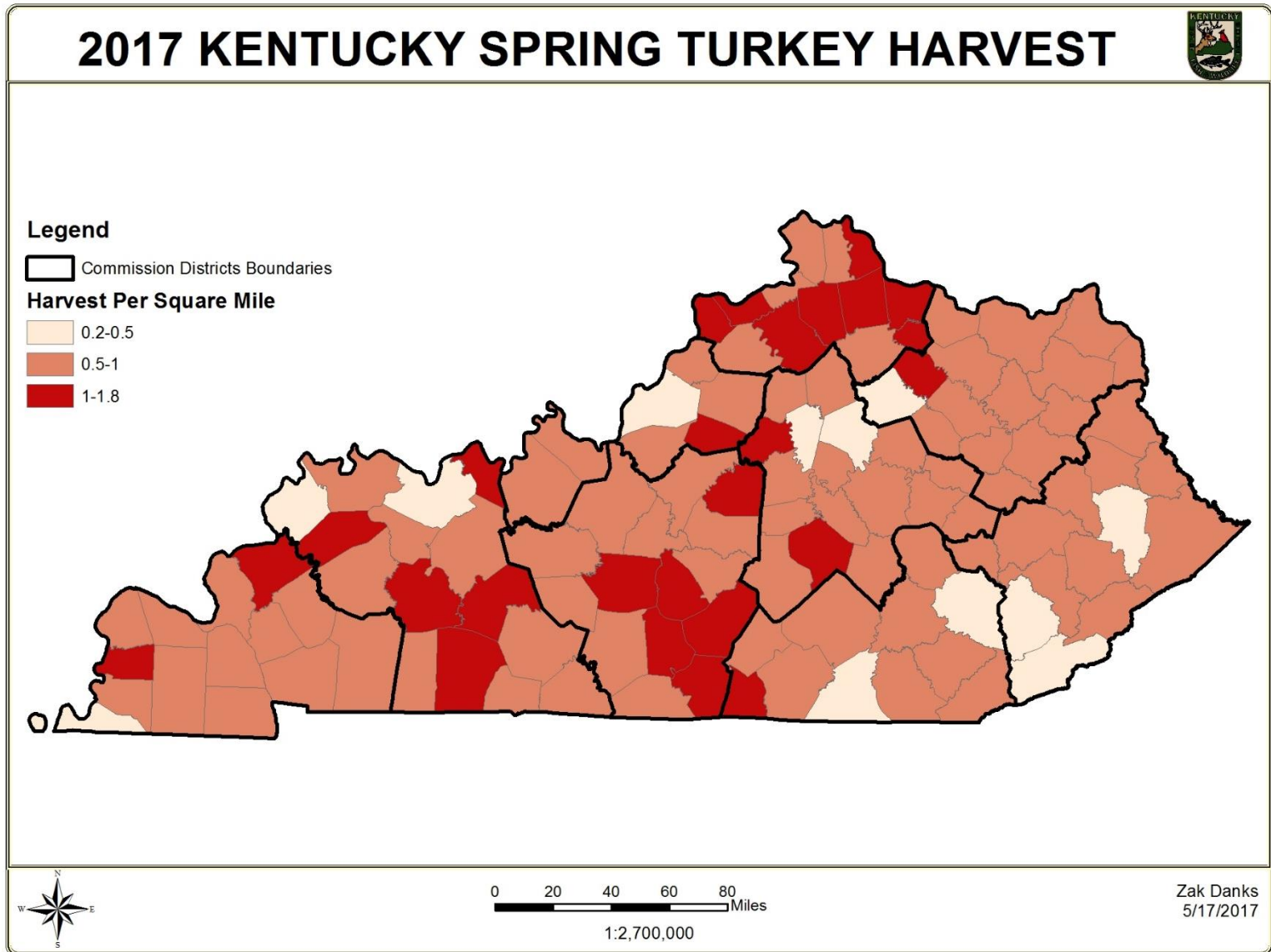


- Top ten counties ranked by total harvest and harvest per square mile, Spring 2017.

<u>County</u>	<u>Harvest</u>	<u>County</u>	<u>Harvest Per Sq. Mile</u>
Muhlenberg	682	Pendleton	1.76
Logan	663	Campbell	1.56
Pulaski	610	Bracken	1.53
Hart	606	Hart	1.45
Ohio	556	Muhlenberg	1.42
Breckinridge	553	Robertson	1.35
Hopkins	541	Anderson	1.31
Graves	518	Owen	1.28
Christian	502	Grant	1.20
Grayson	498	Logan	1.19



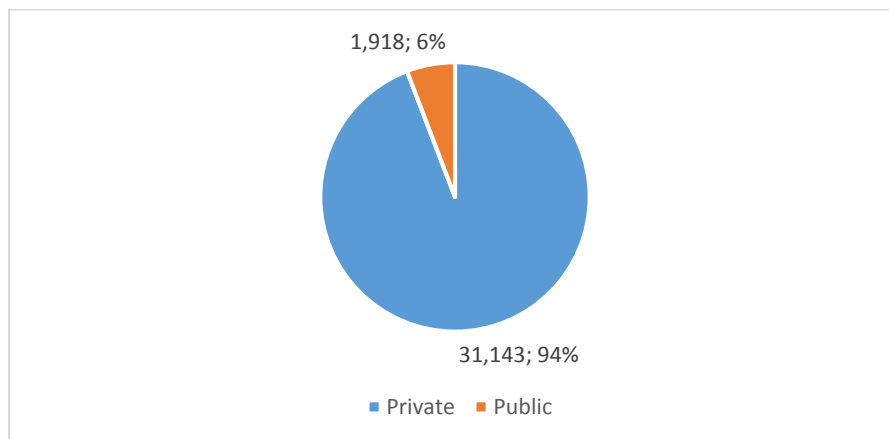
- 2017 Spring Harvest Per Square Mile



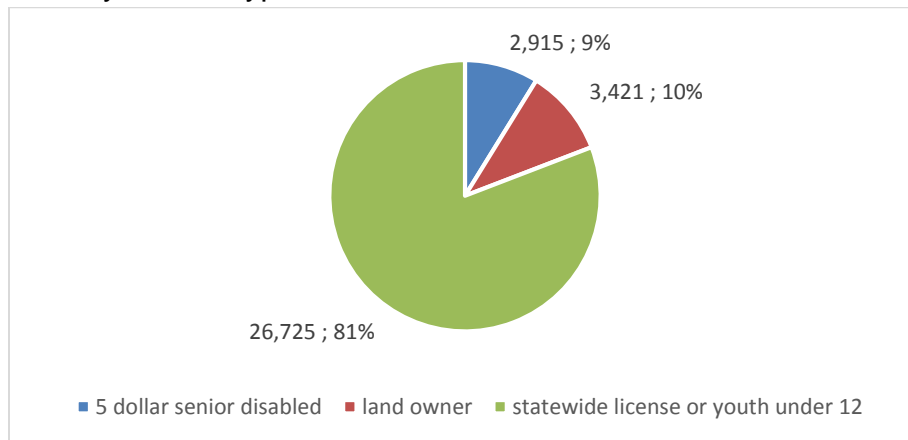
- Top ten public hunting areas by total harvest, Spring 2017.

Public Area	Total	Approximate Acres	Acres / Harvested Turkey
Daniel Boone National Forest	508	638,529	1257
Peabody WMA	181	45,679	252
Land Between The Lakes NRA	140	107,594	769
Wendell H. Ford RTC	68	11,261	166
Green River Lake WMA	61	21,037	345
Clay WMA	53	8,953	169
Taylorville Lake WMA	47	9,417	200
Lake Cumberland WMA	38	41,948	1,104
Yellowbank WMA	37	6,761	183
Big Rivers WMA & State Forest	33	7,574	230

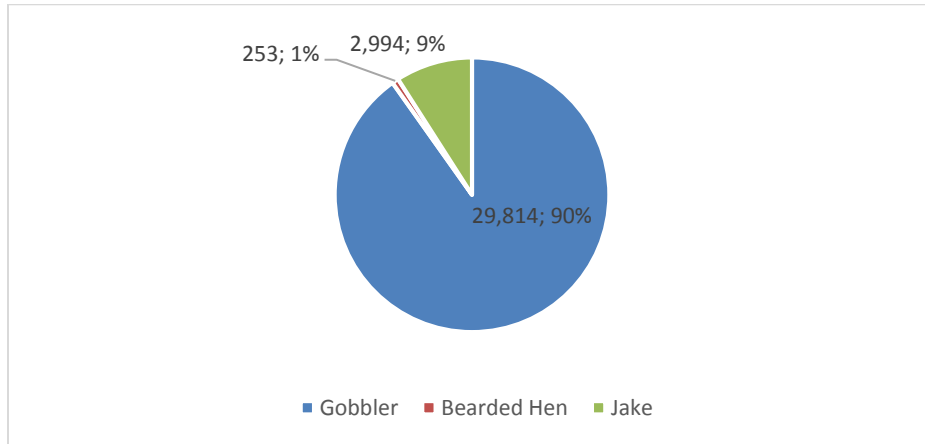
- Spring harvest by land ownership type.



- Spring harvest by license type.

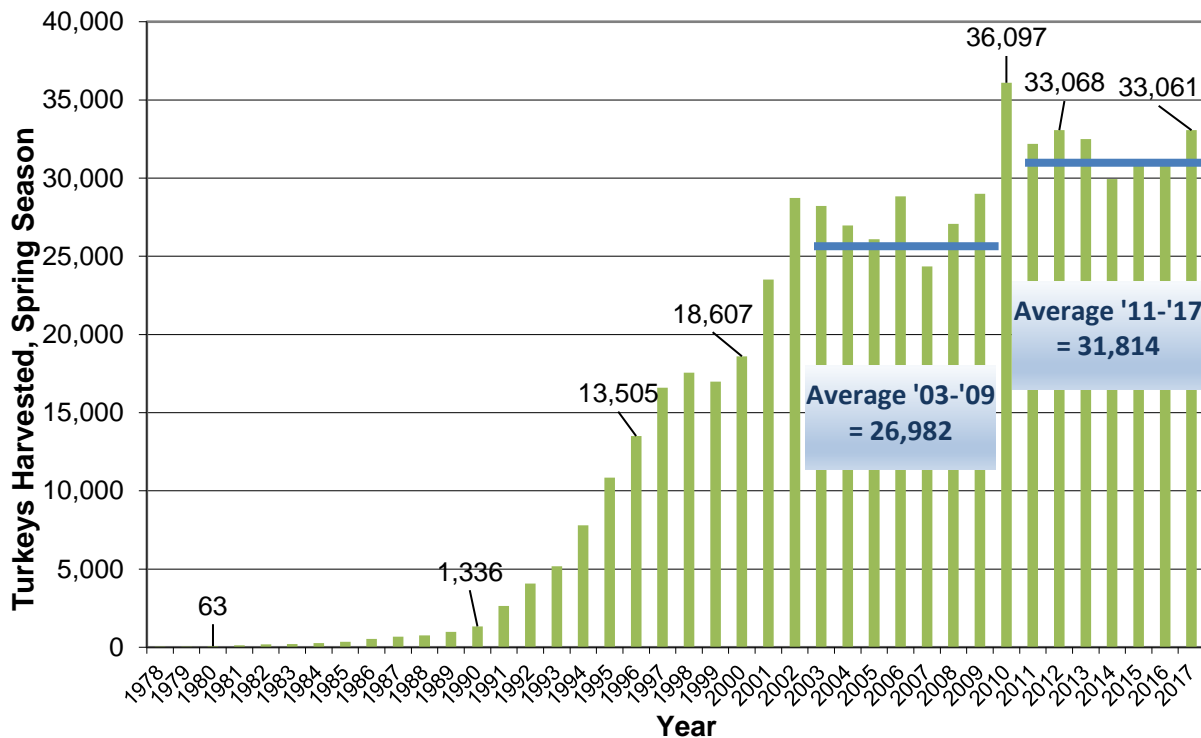


- Spring harvest by sex/age of birds.

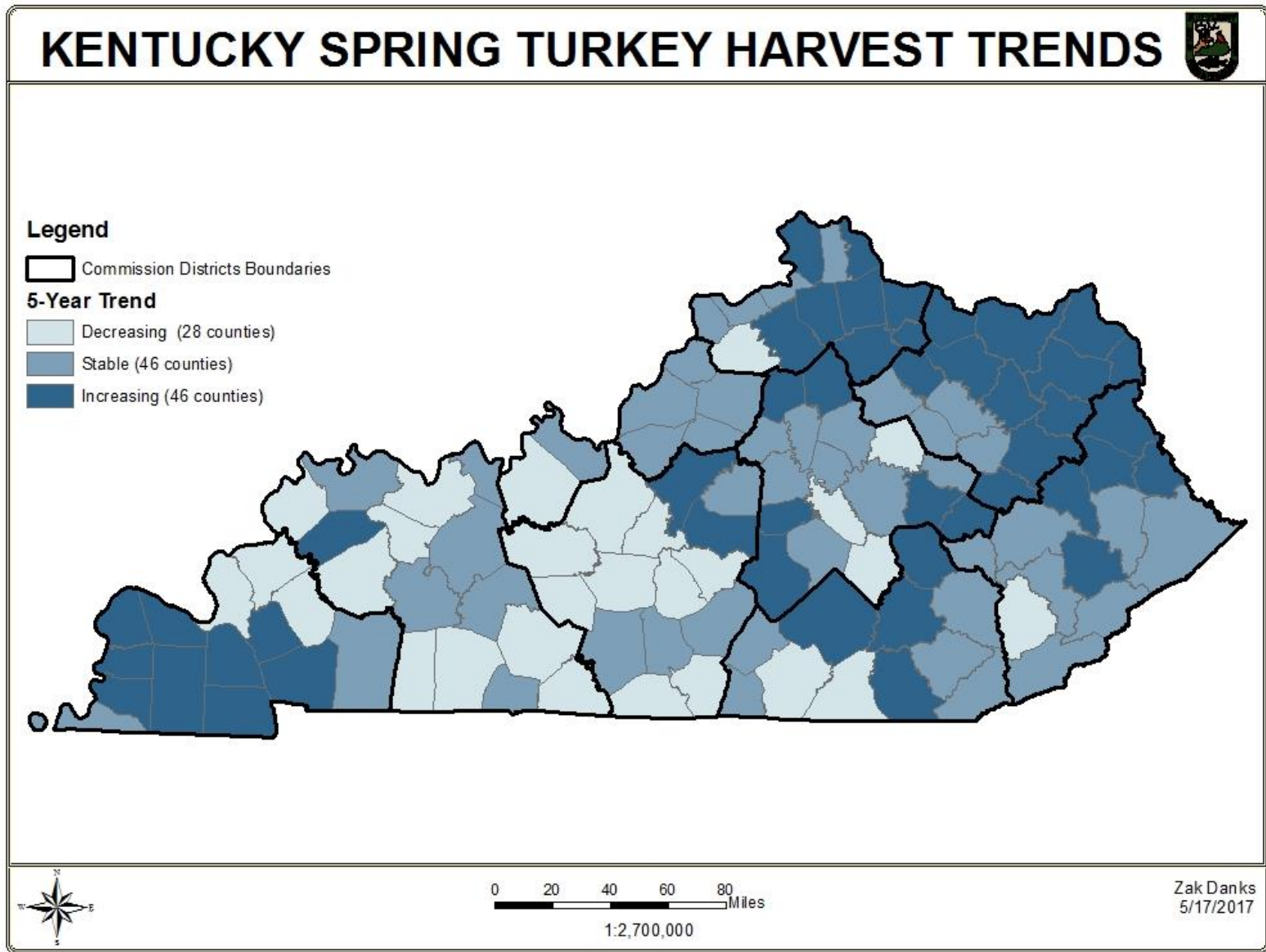


### Spring Harvest Trends

- Since spring turkey season opened in all 120 counties in 1996, the statewide spring turkey harvest has increased from 13,505 to 33,061 (144%).
- Peak statewide harvest was in 2010 at over 36,000. This record year resulted from excellent poult production from widespread periodic cicada emergence in 2008.
- Since the 2010 peak, statewide spring harvest has averaged over 31,000. For the 7 years prior to 2010, the average was just under 27,000.

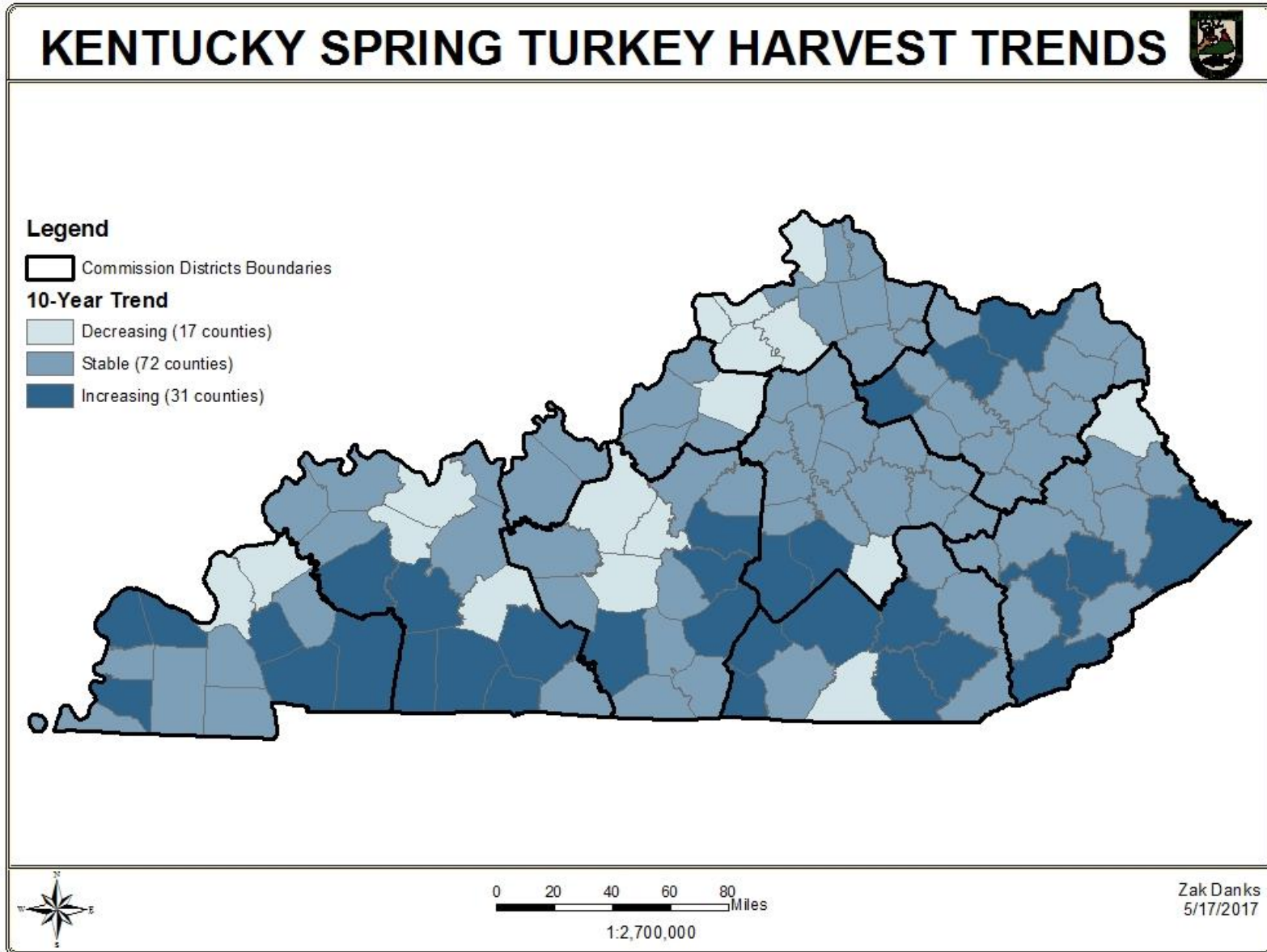


- 5-year county-level trends in spring turkey harvest, 2013-2017. At the county level, turkey harvest varies from year to year due to changes in local populations, but also weather and its effects on hunter effort.



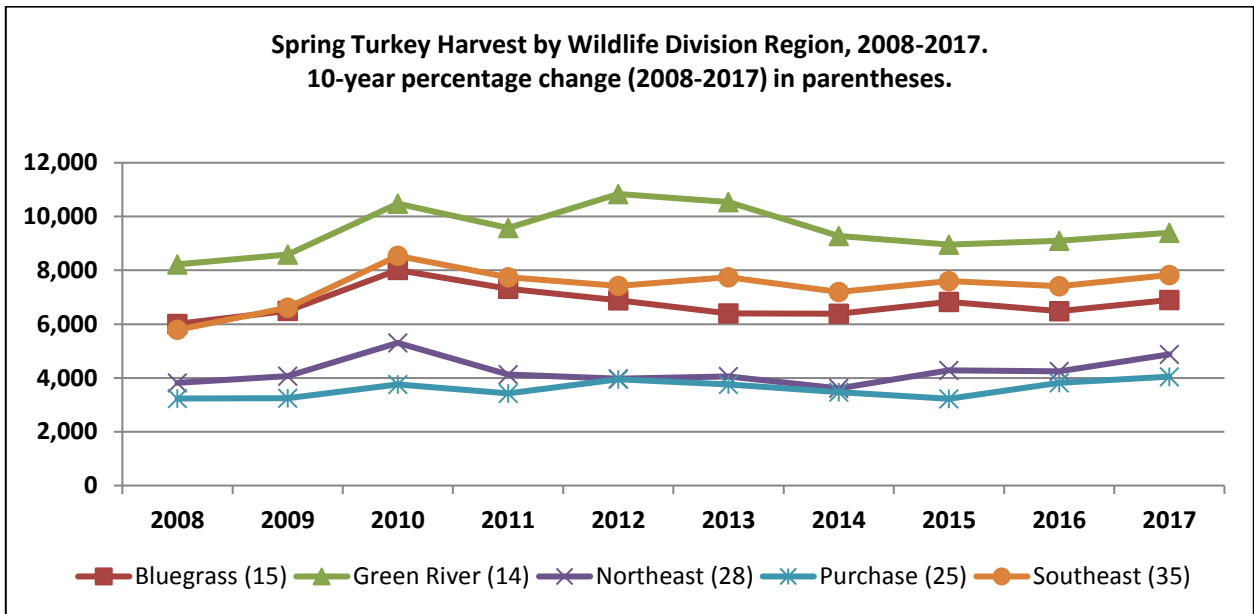


- 10-year county-level trends in spring turkey harvest, 2008-2017. Over a longer time span, trends indicate a stabilizing population in most areas of the state.

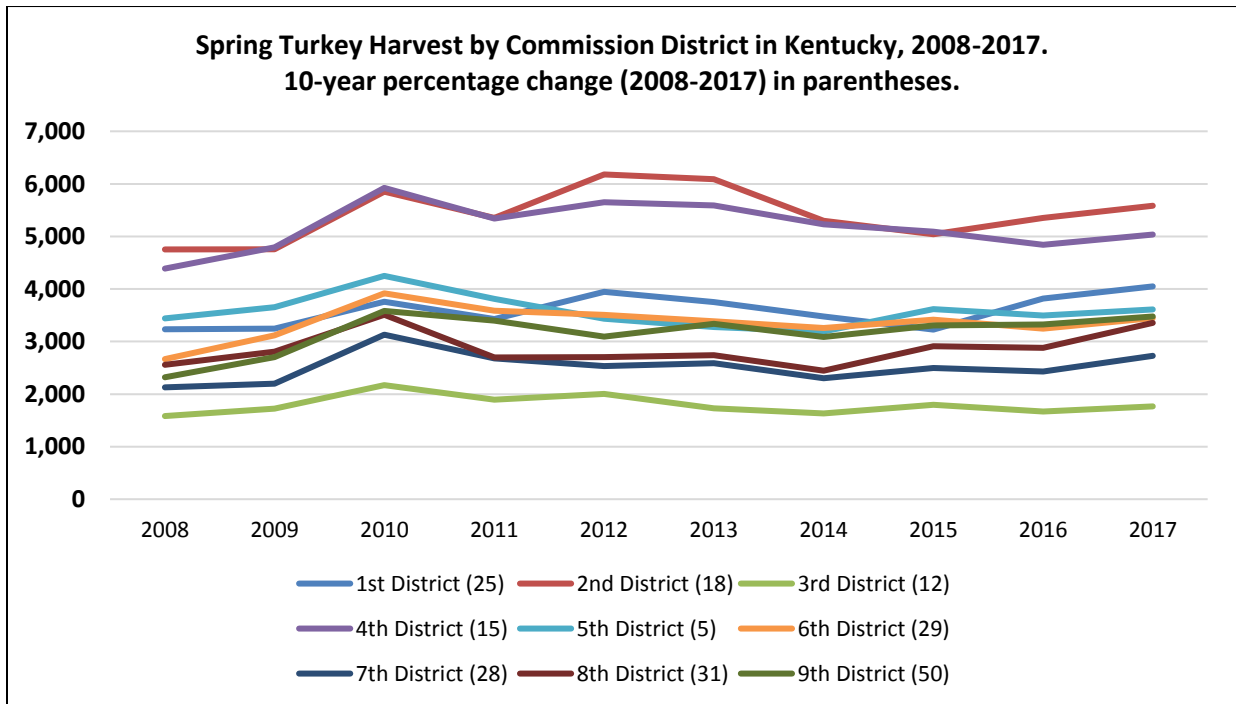




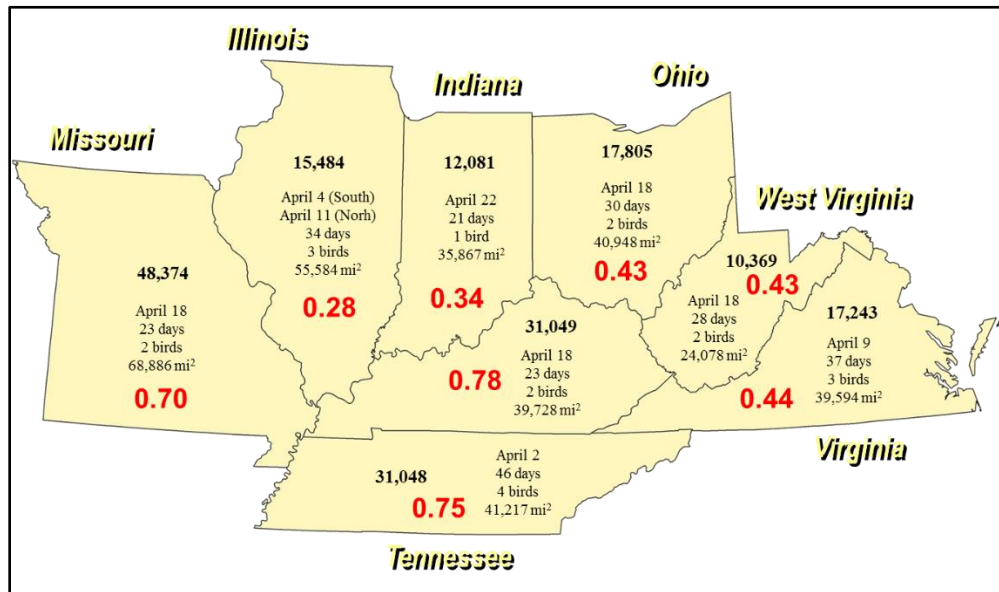
- KDFWR wildlife regions have shown stable to increasing harvest trends over the past ten years.



- Commission Districts show more variability because of smaller county groupings than wildlife regions, but have also shown stable to increasing 10-year harvest trends.

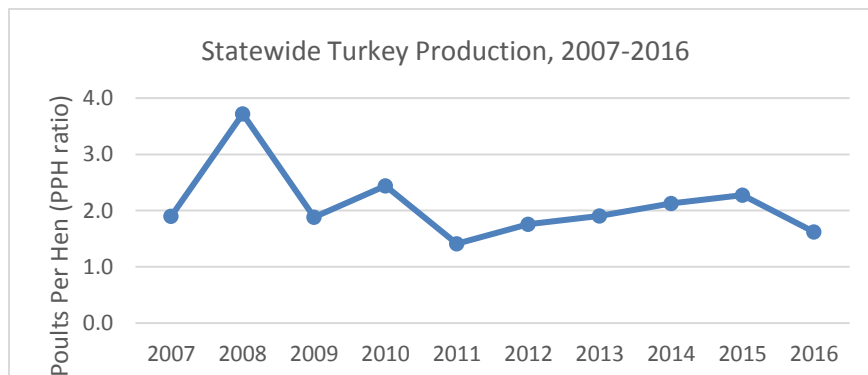


- Under the existing season structure, KY ranks #1 or 2 among all surrounding states for **birds killed per square mile** (map shows 2016 harvest due to data availability).

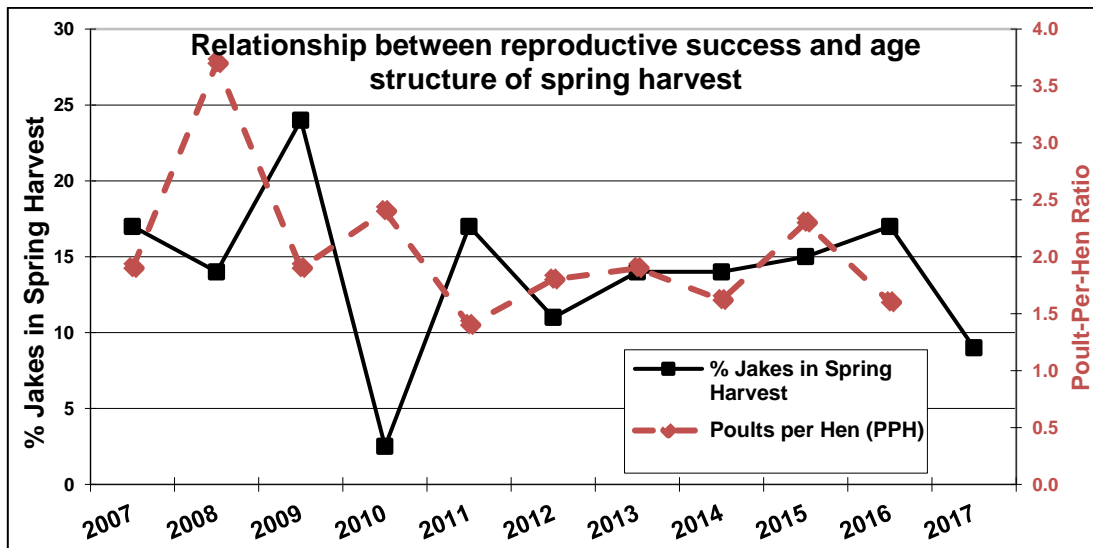


### Brood Production

- In addition to weather and hunter effort, trends in harvest are related to wild turkey productivity.
- KDFWR has conducted annual wild turkey brood surveys for 31 years. Surveys are mailed to KDFWR WD/LED personnel and volunteers for completion in July and August. Observation data are collected opportunistically and mailed back to HQ.
- Like other eastern states, Kentucky data suggest a downward trend in brood production compared to the restoration years ('70s-90's), but stable trends over the past decade.
- Production peaked recently in 2008 with the major cicada emergence.
- Reproduction is driven by weather during the brooding period (May-June). Heavy rains in May and June in many areas contributed to 2016's dip in production.



- The percentage of jakes in the harvest generally increases the spring after a good reproductive year, then drops the following year as surviving jakes become 2-year-old gobblers sought by hunters. This was evident in 2017; jakes made up just 9% of the statewide harvest compared to 17% in 2016. But 2017's higher overall harvest resulted from better production in 2015.



## Disease Concerns

1. *West Nile Virus*: WNV causes only a mild reaction in turkeys followed by a rapid immune response. Current research suggests that WNV lacks potential to be a major new disease of turkeys and that turkeys will not be a significant amplifying host for infecting mosquitoes.
2. *Lymphoproliferative Disease*: this avian retrovirus was first diagnosed in the U.S. in 2009 and produces lymphoid tumors and outward symptoms characteristic of avian pox. Subsequent testing detected LPDV in 47% of turkeys and in each of 18 states that submitted samples, including Kentucky. Existing evidence suggests that LPDV infection is widespread in wild turkeys, but lymphoid tumors are rare. In addition, fatality from the virus is now considered a relatively rare event.
3. *Avian Influenza*: this is caused by a type A virus which can affect poultry and is carried by free-flying waterfowl. In April 2015, the U.S.D.A. confirmed the presence of highly pathogenic H5N2 AI in a goose and duck in McCracken County, KY. While AI is highly contagious with high mortality rates in domestic turkeys, this disease has never been documented in wild turkeys. Transmission from wild waterfowl to wild turkeys is considered unlikely due to differences in habitat selection and use.

4. *Poultry Litter*: in 2014-15, the Tennessee Wildlife Resources Agency (TWRA) partnered with the University of Tennessee, College of Veterinary Medicine (UT-CVM) and conducted a two-part study: (1) a general disease surveillance study of harvested turkeys in 3 counties along the Alabama border that have experienced decreased harvest and 2 counties where harvest has been stable; and (2) a study of domestic turkey poults raised on chicken litter.

Of 218 hunter-harvested birds analyzed, only 3 (1.4%) showed DNA evidence of blackhead (*Histomoniasis*) – one of the most important parasitic diseases in wild turkeys, which is shed in the feces of affected birds. Population impacts of this and other diseases (including avian influenza, New Castle Disease virus and *Mycoplasma* species) could not be determined.

In the lab study, of 24 domestic Eastern wild turkey poults raised on freshly collected chicken litter from one poultry house, 2 (8.3%) tested positive for blackhead. Results only indicated a possible pathway for transmission. UT-CVM cautions that further work on prevalence, transmission dynamics, environmental persistence and control measures of blackhead in chicken litter is warranted before any definitive statements can be made. The study was not designed to identify direct sources of diseases (including blackhead) in wild turkeys, nor was it designed to determine if diseases (as opposed to predation or other factors) is the cause of turkey harvest declines in middle Tennessee.

The Tennessee Fish and Wildlife Commission recently funded a multi-year turkey research project, which will provide a comprehensive look at turkey survival, reproduction and other factors affecting population trends in middle Tennessee. The project also seeks to identify and understand all causes of turkey mortality, including disease, and the relation of these mortality sources to population variation.

## Summary

- 2017 spring harvest was up 6.5% over 2016 and was the 3<sup>rd</sup> highest spring harvest ever.
- Spring harvest has been stable to increasing in most counties, and stable in most wildlife regions and commission districts. However, a few counties show a decline over the past 5-year period. Some of this is due to a downward rebound following high population years resulting from excellent poult production.
- Brood production has been relatively stable over the past decade, likely indicating a population that is stabilizing with the habitat's carrying capacity.
- We have no data to suggest that disease is a widespread concern to Kentucky's wild turkey flock.
- Goals:
  - 1) Continue monitoring of Telecheck reported turkey harvest.
  - 2) Gather information on hunter effort to better inform changes in harvest.
  - 3) Increase participation among brood survey respondents to strengthen survey results.
  - 4) Work to recruit hunters for observation data via mobile apps and online reporting.
  - 5) Continue surveillance efforts for potential disease concerns.
  - 6) Maintain current spring season structure for wild turkeys, which offers a good compromise between hunter opportunity and the biological needs of the turkey flock.