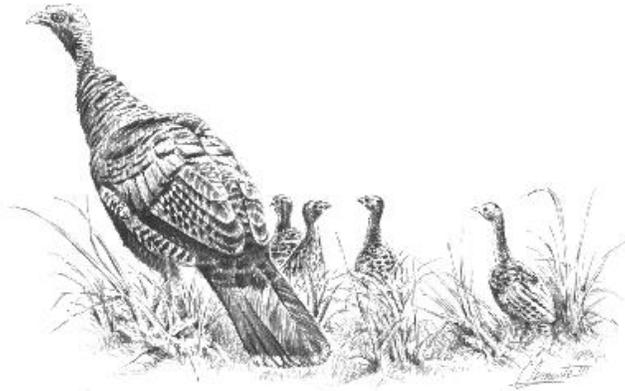


2015 Turkey Brood Survey Report

Gary Norman
Wild Turkey Project Leader
Verona, VA 24482
and
Katie Martin
District Wildlife Biologist
Farmville, VA 23901



One of the Department's key mission statements is: to manage Virginia's wildlife and inland fish to maintain optimum populations of all species to serve the needs of the Commonwealth. This report focuses on the Department's efforts to monitor wild turkey populations as directed in the Department's Wild Turkey Management Plan. This Project not only monitors reproduction, it provides information that is relative to the Plan's population objectives (stabilize or increase). This project does not reach the county level objectives as specified in the plan; however it does provide important statewide and regional production and abundance levels.

METHODS

Department staff submitted observations of young turkeys (poults) seen in August; poults that survive until August are likely to be recruited into the population. Along with the numbers of poults seen, staff report the number of adult hens with the brood, hens without any broods, males, and unidentified birds. These observations are noted during their normal work assignments and observers report the total number of miles driven during the month so an estimate of densities (total birds, broods, etc.) can be made. Poults per hen (PPH) are calculated by dividing the total number of poults by the total number of hens; this includes hens without poults, and is done on an individual observation basis. Regional calculations are based on Department administrative units when the agency used 5 units.

RESULTS

Effort

A total of 141 reports were submitted in August 2015 (Table 1). This represents a significant (41%) increase over the 2014 survey where 100 reports were submitted. The increase in participation resulted in more than 50,000 miles of observations by staff in 2015 compared to 2014. For the first time, all regions of the state were well represented in the survey (Table 2). Participation was the highest since the current format was implemented in 2007. All totaled, 2,518 turkeys were seen while participating staff drove 222,043 miles in August 2015.

Poult Production – Poults Per Hen (PPH)

Statewide.—A total of 380 broods (hens with at least 1 poult) were sighted in August, 2015. The long-term (2007-2015) statewide average PPH (poults per hen) in this survey is 2.7 (Table 1). In 2015, the statewide PPH average was 2.5, which was 7% below the long-term survey average. The survey high of 3.3 PPH was seen in 2011 while the low (2.3 PPH) was seen in 2009.

PPH reflect poult losses from weather, predators, condition, or other unknown factors based on observations of all hens. Complete brood losses are not uncommon and thus PPH includes hens without any poults as they serve as an index of hen failure to recruit any poults until August.

Regions. — There was only one region (North Mountain) that exceeded its long-term PPH average (2.7; Table 2). This is very encouraging news for this region as their PPH ratio has been very low and population trends have been declining and current population densities are among the lowest in the state. The South Piedmont produced 2.6 PPH in 2015, second in the state, which was slightly below the long-term average. The balance of the regions had PPH ratios below their respective long-term averages.

Brood Abundance

Statewide. —Brood abundance incorporates PPH ratios with population size to determine the relative number of turkeys that will be added to the population. Simply put, PPH ratios alone do not drive a turkey population; they work in tandem with, or are affected by the number of females in a particular turkey population to determine the extent of annual change in turkey populations.

Regions.— The South Piedmont Region had outstanding Brood Abundance (6.8 broods/1,000 miles) in 2015 (Table 2). Regrettably, the balance of the regions had Brood Abundance ratios that were below average (Table 2). The North Mountain Region again had the lowest numbers of broods seen. The cause of the low production in the North Mountain Region is unknown but hypotheses have been offered that include the loss of brood habitat, weather, hen condition, and/or changes in predator communities that include bobcats, coyotes and black bear. Black bear are unlikely predators of adult turkeys but may predate turkey nests, as do other predators. The positive news is that the North Mountain Region abundance of broods moved in a positive direction between 2014 and 2015 (0.3 vs. 0.9, respectively).

Turkey Abundance

Statewide. — The spring turkey harvest from electronic checking is believed to be a crude index (10%) of the spring population. Likewise, Turkey Abundance, the number of turkeys seen (per 1,000 miles) in this survey should be a reasonable index to the August turkey population but the relationship has not been validated with a study.

Using the spring kill as an index, Virginia's turkey population reached a plateau of approximately 200,000 birds in 2013 and has been relatively stable since then. Turkey Abundance from this survey has followed the harvest trend.

Turkey Abundance in 2015 (30.0) was second only to the 2011 (30.1) record abundance for this survey, which also supports spring gobbler harvest figures indicating that our turkey population is at record levels for modern times. Reproduction in the turkey population in 2015 should sustain the turkey population at current record levels, which is positive at the statewide level.

Region.— The South Mountain (56 birds/1,000 miles) and South Piedmont (52 birds/1000 miles) led this survey in Turkey Abundance (Table 2). Normally the Tidewater Region leads the state in other turkey density indices (e.g. harvest). And the Tidewater Region has ranked low among other regions in previous years in this study. The causes of the low observation rates in the Tidewater Region are unknown.

The North Mountain Region was again the lowest of any region in the state (0.9). Last year the turkey abundance rate in the North Mountain region was 0.3 birds/1,000 miles. At least turkey abundance appears to be moving in a positive direction in this region! This information will be valuable as we evaluate fall regulation changes in the future.

Table 1. August brood observation reports by year in Virginia.

Year	Reports	Turkeys/ 1,000 Miles	Broods/ 1,000 Miles	Poults/ Hen
2007	51	19.2	2.6	2.6
2008	72	17.2	2.8	3.1
2009	56	12.2	2.1	2.3
2010	38	18.7	3.5	2.8
2011	119	30.1	5.1	3.3
2012	75	12.4	1.9	2.5
2013	127	26.0	3.4	2.4
2014	100	29.4	4.0	2.4
2015	141	30.0	3.1	2.5
Average		21.7	3.2	2.5

Table 2. 2015 August brood observations by region in Virginia.

Region	Reports	Turkeys/ 1,000 Miles	Broods/ 1,000 Miles	Poult/ Hen
Tidewater	30	16.7	2.2	2.3
South Piedmont	30	50.4	6.7	2.6
South Mountain	29	56.7	2.9	2.6
North Mountain	23	5.5	0.8	2.9
North Piedmont	29	15.1	2.6	2.5
State	141	30.0	3.2	2.5

Summary

- Department staff report the number of turkeys they observe in August annually to evaluate turkey population production and abundance. The survey has been conducted since 2007
- In 2015, 141 reports covering more than 222,000 miles. They saw 80 broods and a total of 2,518 turkeys. All regions were well represented
- Production or growth in the turkey population was measured on a daily basis and was calculated by dividing the number of young by the number of hens observed. Observations where hens had no young were also included because they index hens without any poults. Production is expressed as poults per hen (PPH)
- PPH ratios in 2015 were 2.5, 7% lower than the survey average (2.7)
- PPH varied among regions
- PPH ratios were highest (2.9) in the North Mt. region.
- Abundance of broods and turkeys is reported based on units per 1,000 miles driven
- Brood Abundance was exceptional (6.8) in the South Piedmont Region, twice the statewide average (3.1). Brood Abundance was similar among the other regions except the North Mountain was very low (0.9)
- Turkey Abundance was exceptional in the South Mountain (56.1) and South Piedmont (51.6) and were nearly two times higher than the statewide average (29.3)
- Based on other indices, the Tidewater Region has the state's highest density, however, in this survey the Tidewater Region (16.7) had the state's 2nd lowest Turkey Abundance, which we cannot explain
- Turkey Abundance was lowest in the North Mountain Region (6.2); these results appear to support the reduction in the fall season in many counties in the region
- Significant changes in PPH and Brood Abundance may help predict changes in the turkey population
- Virginia's current turkey population is estimated to be at record levels for modern times. Reproduction in 2015 was moderate at the statewide level and based on previous histories, should allow for stable turkey populations

- PPH was high in Region 4, in which many counties in the region had Population Objectives to increase their populations. Unfortunately, Brood and Turkey Abundance indices in Region 4 were still the lowest in the state.

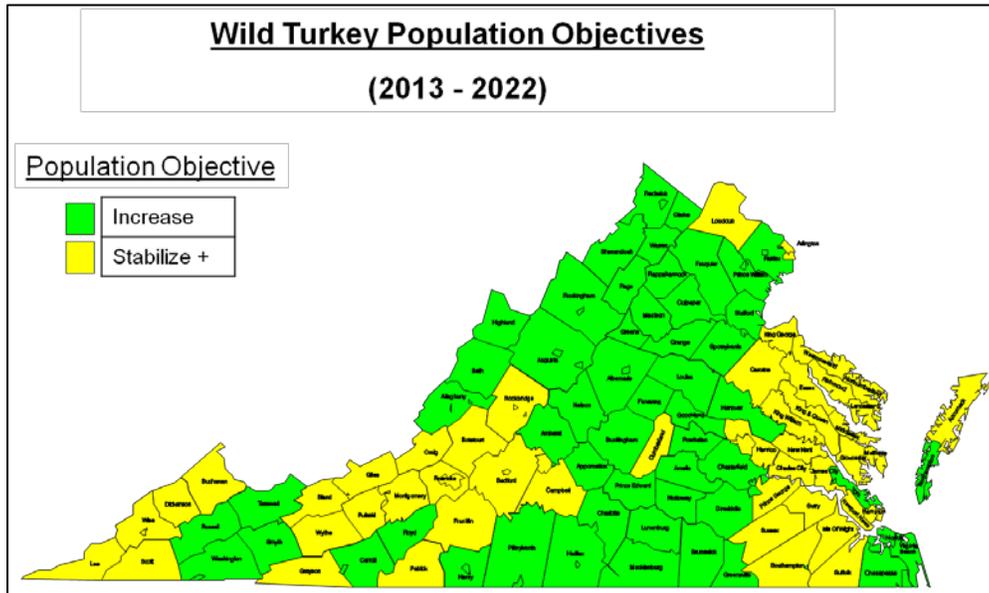


Figure 1. Wild turkey population objectives by county management unit in Virginia, 2013-2022