

# Turkey Production and Population Survey

## Wild Turkey Production and Population Survey Results for 2013

The 2013 hunting season was the 35<sup>TH</sup> year of our annual turkey population survey. The continuing cooperation of turkey hunters has made the survey possible. Your assistance is vital to managing wild turkeys in Georgia. We greatly appreciate this partnership. Consider encouraging a friend to get involved as well.

### Turkey Production Index Survey

Historically, this survey was conducted from May through August from 1978 thru 1990. Beginning in 1991, the annual survey period was shortened to June through August. Field personnel of the Game Management, Law Enforcement, and Fisheries Management Sections of the Wildlife Resources Division are involved in data collection. All observations of turkey broods and hens, with and without poults, are reported.

During the summer of 2013, 424 broods were seen, which was up 40% from 303 in 2012. The average brood size of 6.0 poults observed in 2013 was 20% less than 2012 (7.4) and 25% less than the previous 5-years average (8.0). The statewide production index of poults per observer (13.1) was less than last year (13.53) and about the same as the 5-year average (13.6). The production index 'poults + hens' was 4396 in 2013, which was 9% higher than the 2012 index of 4022 and similar to the 5-year average of 4437. The average number of poults per hen was 1.37 in 2013 up 8.1% from 1.26 in 2012. This was also 17% lower than the previous 5-years average (1.7). The past several years of production data and harvest data indicate that reproductive levels around 2 poults per hen or slightly less have been able to maintain our current population level. A production index of 1.37 poults/hen is fair. Statewide poult production is still down 22% from 2011 to 2013. Some of the state will not be impacted, but much of the state will notice the effect of lower production during the 2014 spring season.

Reproduction data suggests that turkey production was variable across Georgia in 2013. The Blue Ridge area of the state experienced the most significant increases. The poults/hen index was 1.36, which is a 110% increase from 2012. Poults/observer was up 34% with an average of 13.55 poults observed/observer. Additionally, the Blue Ridge saw a 134% increase in the number of broods counted. The coastal plain had mixed results. The Lower Coastal Plain (LCP) experienced a 61% increase in the number of broods counted, a 25% increase in poults/observer, and a 24% increase in poults/hen. The LCP did see a 25% decrease in the average number of poults/brood. The Upper Coastal Plain an 80% increase in the number of broods counted, 42% decrease in the number of poults/brood, and a slight 5.3 % increase in the poults/hen index (1.7). However, 1.7 poults/hen is the highest productivity index recorded in the state in 2013. The

Piedmont region rebounded some from the summer of 2012, but the numbers are still low. The poult/hen index was 1.27, up 6.8% from 2012 (1.19). The Piedmont region saw a 17% increase in the number of broods, 8.8% decrease in poult/brood, a 20% decrease in poult/observer. The Ridge and Valley had the worst reproductive season in the state. This region recorded a 23% decrease in the number of broods counted, a 46% decrease in the number of poult/observer, and a 43% decrease in the poult/hen index from 1.37 (2012) to .79 (2013).

## **Hunting Population Index Survey**

Usable hunt data was supplied by 495 cooperators (which is 9% above the 5-year average of 453 [2008-12]). Of these, 440 came from the permanent cooperator list, 45 from the DNR quota list and 10 from the NWTF list which resulted in a reporting rate (after deleting wrong addresses, deceased, quit hunting, incorrect data collection, etc.) of 36.4% from the permanent, 12.5% from the DNR quota list and 3% from the NWTF list cooperators, respectively. These cooperators reported spending a total of 16,354.25 hours hunting (which is 3% above last year [15,927.85 = 2012] and nearly equal to the 5-year average of 16,196.9). The average season hunter effort was 9.7 trips (which is the same as last year and 7% less than the 5-year average of 10.4) totaling 33.0 hours (which is nearly identical to last year [33.3 = 2012] and 8% less than the 5-year average of 35.8). They reported observing 10,253 turkeys (which is 10% more than last year [9,256 = 2012] and 6% more than the 5-year average of 9,686) and hearing 8,375 gobblers (which is nearly identical to last year [8,282 = 2012] and 6% more than the 5-year average of 7,870). The statewide population index of 1.6 was almost the same as last year and the 5-year average. The effort per gobbler heard of 2.0 was 5% worse than last year (1.9 = 2012) but 5% better than the 5-year average of 2.1, and 22.3 hours/turkey harvested was 16% worse than last year (18.8, 2012) but 3% better than the 5-year average of 23.1. The least hunting effort per turkey seen occurred in the Ridge and Valley and Lower Coastal Plain (second year in a row). The effort per gobbler heard was least in Upper and Lower Coastal Plain and greatest in the Blue Ridge Mountains. This year's harvest effort was up from last year by nearly 6 hrs/gobbler harvested (but still better than the 5-year average), with the least effort observed in the Ridge and Valley and Lower Coastal Plain, while the greatest effort was in the Blue Ridge Mountains.

This was the first season we asked cooperators to report gobblers and hens seen separately. From this, we observed that statewide the hen:gobbler ratio was 1.3, whereas during the reproductive season 2012 it was 2.0. This ratio only varied from 1.2 (Piedmont) - 1.6 (Blue Ridge Mountains) hens:gobbler across the 5 physiographic regions. You would expect fewer hens to be seen during the harvest season because as the season progresses hens leave the gobblers to nest. Statewide, hours hunted per gobbler seen were 3.8, while it took 2.8 hours

to see a hen. Hours per gobbler seen varied from 2.7 (Ridge and Valley) - 4.2 (Piedmont) across the regions. Hours per hen seen varied from 1.9 (Ridge and Valley & lower Coastal Plain) – 3.4 (Piedmont) across the regions.

Statewide peak gobbling activity (2.3, 2.5, and 2.3 gobblers heard per trip) occurred during the second (March 30-31), third (April 6-7) and fourth (April 13-14) weekends, which is unusual compared to past seasons where the first weekend is usually the greatest (5-year average around 2.5). This is most likely due to the weather issues across most of the state during opening weekend. This season there were 3 periods with greater than or equal to 2.0 gobblers heard per trip like last year. In most years, the greatest gobbling activity was the first 7 days of the season, however due to weather issues across the state during the opening week we observed differences. For 2.0 gobblers heard per trip or greater we observed the following for each region: Ridge and Valley – second weekend (March 30-31, 2.0), third weekend (April 6-7, 2.2), sixth weekend (April 27-28, 2.3 tied for the peak) and the seventh week (May 6-10, 2.3 also); Blue Ridge Mountains – fourth weekend (April 13-14, 2.0 [the only time period]); Piedmont – from March 25-April 14 all the time periods were 2.0 or greater with the peak during the third weekend (April 6-7); Upper Coastal Plain – second (March 30-31, 2.3), third (April 6-7, 2.8 and was the peak), fourth (April 13-14, 2.5) and fifth (April 20-21, 2.0) weekends; and Lower Coastal Plain – second (March 30-31, 2.3 and tied for the peak), third (April 6-7, 2.3 also), fourth (April 13-14, 2.0) and fifth (April 20-21, 2.1) weekends. Gobblers heard per trip was down across much of the state except for the Piedmont (up 1.9 from 1.7 last year) and Upper Coastal Plain (1.8, same as last year) compared to last year.

The statewide gobbler harvest during the first seven days of the season amounted to 30% of the total season harvest (which is slightly less than the 5-year average of 32 %). Peak harvest was generally seen within the first seven days of the season in all parts of the state except for the Blue Ridge Mountains which had the greatest 7 day period of April 1-7. Similar to previous seasons, the greatest number of trips made was during the first seven days of the season, except a slight difference in the Ridge and Valley where April 6-12 was 1% greater than the first 7 days of the season. Statewide the first 7 days were the best for gobbler harvest per trip (or efficiency), this also coincides with both the Piedmont and Lower Coastal Plain regions. However, the best two periods for Ridge and Valley was May 4-10 (the seventh weekend and week), Blue Ridge Mountains was April 1-5 and May 13-15, and Upper Coastal Plain was April 6-7 and May 13-15.

Hunter success (64.2 %) was the worst it's been since a comparable year in 2009 (64.3%), which was also a very wet year. So, the hunter success was worse than last year (2012 = 68.5 %) and the 5-year average 66.9 % (2008-2012) with 318 of 495 hunters reported taking or assisting in taking at least one gobbler. Of the successful hunters, 117 (23.5 %, 5 year average was 24.7 %) took or assisted in taking one bird, 85 (17.3 %, 5 year average was 18.0 %) took

or assisted in taking two birds, and 116 (23.3%, 5 year average was 24.1 %; Graph 10) took or assisted in taking three birds. For all bags (1, 2, 3+), this season was worse than last season. Cooperators reported 196 gobblers harvested by companions (which is less than last year [266 = 2012] but greater than the 5-year average of 186).

The predictive model analysis uses Poults+Hens of the reproductive season during the current year to predict the following years harvest season population index of Hours Hunted/Turkey Seen, where the predictor model (1978-2012) is:

Constant + (Slope \*2012 Total Poults+Hens) = 2013 Hours Hunted/Turkey Seen

Therefore:

$3.3189 + (-0.00034 * 4,022) = 1.9$  Hours Hunted/Turkey Seen in 2013.

After the production data from 2012 was entered in the model, the prediction for the 2013 harvest season was 1.9 hours hunted per turkey seen. However, the hunters observed 1.6 hours hunted per turkey seen which is 16% better than what was predicted. A relatively high inverse correlation  $r = -0.81$  was obtained from the comparison of the new nesting season population index versus the following years harvest season population index. Bad weather during the opening week probably accounted for the variance between predicted and actual indices.

## **2014 Season Forecast**

According to a post-season telephone survey, Georgia's estimated 60,936 resident turkey hunters had a great spring season in 2013, harvesting about 35,000 gobblers statewide. The average harvest per hunter (0.58 turkeys) was stable from 2012, and was better than the previous 5 years averaged (0.56). Not surprising, 68.0% of turkey hunters surveyed rated Georgia turkey hunting good or excellent. The turkey population in Georgia has declined since 2003, primarily due to poor reproduction and loss of quality habitat. I think we will continue to experience the ups and downs of normal population cycles typical of a stable population at or near capacity. We recently estimated the population at about 335,000 turkeys and harvest rates remain good.

The 2014 season is going to be fair. We had poor reproduction in 2012 with a statewide productivity index of 1.26 poults /hen. This past summer (2013) was a little better, with an index of 1.37 poults/hen. So, couple poor reproduction with good harvests in 2012 and 2013, the supply of gobblers may be limited. The Coastal Plain will be the best area of the state, with stable reproduction in 2012 and increasing reproduction in 2013. The Piedmont and Ridge and Valley will probably see the most notable reduction in gobblers.