Annual Wild Turkey Status Report
2022

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TENNESSEE WILDLIFE RESOURCES AGENCY

Roger Shields, Wild Turkey Management Program Coordinator

TWRA Wildlife Technical Report 23-1

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Spring Turkey Season

Reported Harvest

Traditionally, turkey harvest has been monitored by the Tennessee Wildlife Resources Agency (TWRA) through mandatory hunter reporting, or checking, of harvested game. Starting in about 2010, physical check stations largely have been replaced by reporting options using the internet (GoOutdoorsTN.com) and smart-phone mobile applications (the "TWRA On the Go" app). Beginning spring of 2020, big-game hunters in Tennessee are required to tag their harvest before moving it ("Tag Before You Drag") and then report it as previously required (i.e., by the end of the calendar day of harvest and before transferring the animal to another person or leaving the state). Checking a bird in the field at the time of harvest using the mobile app meets both the tagging and reporting requirement and nothing more is required of the hunter.

Beginning spring of 2021, several regulation changes took effect for the spring turkey season. The statewide season bag limit was reduced from four bearded turkeys to three, and "bonus" birds were eliminated. Additionally, in light of steep harvest declines occurring in several counties adjacent to the Mississippi River (Dyer, Lake, Lauderdale, Shelby and Tipton counties) and in southern middle Tennessee (Giles, Lawrence, Lincoln and Wayne counties), the Commission adjusted hunting regulations designed to improve turkey population numbers in these counties. The spring turkey season in these counties opened two weeks later (April 16th for 2022) and was two weeks shorter, ending with the statewide season closure. This delayed start to the hunting season is based on an average median date of nest initiation of April 15th and allows time for most breeding to occur without disturbance from hunters and before any gobblers are removed by harvest. In addition to the spring season delay, the bag limit for the counties along the Mississippi River (collectively referred to as the Mississippi Alluvial Valley, or MAV, Unit) was reduced to two birds for the unit collectively, and these birds counted toward the statewide bag limit. This further bag limit reduction was taken in response to extensive and prolonged flooding of the Mississippi River over the past several years that is believed to have greatly impacted adult survival.

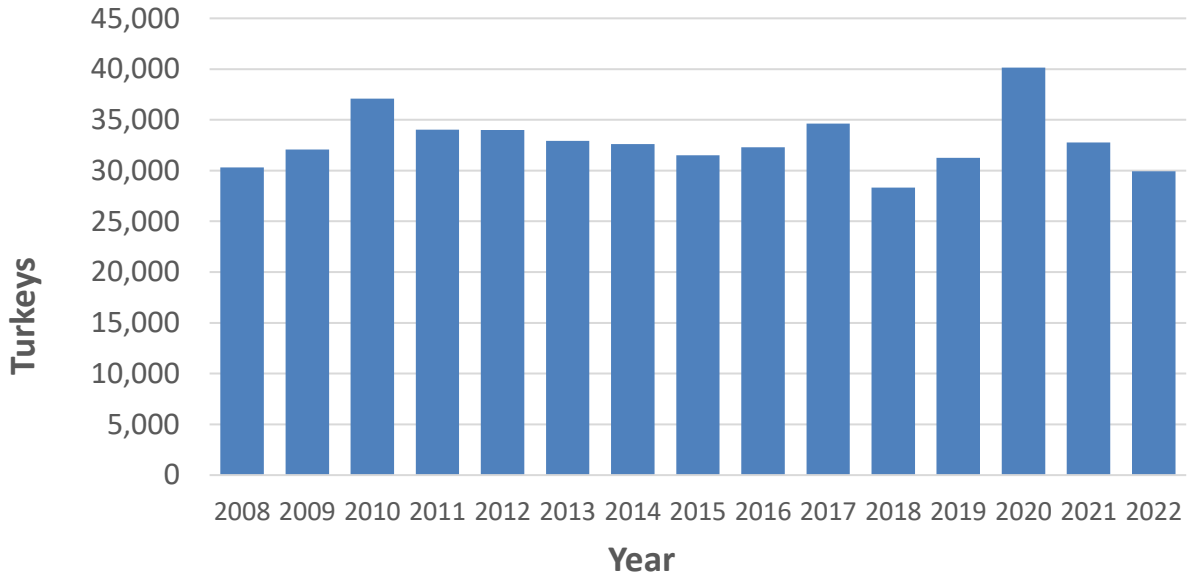


Figure 1. Total reported harvest during spring turkey season, 2008 - 2022.

Table 1. Total reported spring turkey harvest by county (inclusive of WMA harvests), 2022.

County	Region	Total Harvest
Anderson	4	136
Bedford	2	539
Benton	1	305
Bledsoe	3	237
Blount	4	288
Bradley	3	242
Campbell	4	291
Cannon	2	235
Carroll	1	419
Carter	4	157
Cheatham	2	429
Chester	1	110
Claiborne	4	312
Clay	3	162
Cocke	4	312
Coffee	2	314
Crockett	1	71
Cumberland	3	334
Davidson	2	296
Decatur	1	245
Dekalb	3	275
Dickson	2	783
Dyer	1	147
Fayette	1	411
Fentress	3	161
Franklin	2	216
Gibson	1	341
Giles	2	498
Grainger	4	240
Greene	4	840
Grundy	3	175
Hamblen	4	166
Hamilton	3	246
Hancock	4	140
Hardeman	1	450
Hardin	1	460
Hawkins	4	487
Haywood	1	146
Henderson	1	269
Henry	1	449
Hickman	2	453
Houston	1	287
Humphreys	1	430
Jackson	3	269
Jefferson	4	401
Johnson	4	159
Knox	4	342
Lake	1	63

County	Region	Total Harvest
Lauderdale	1	139
Lawrence	2	208
Lewis	2	199
Lincoln	2	411
Loudon	4	215
Macon	2	251
Madison	1	310
Marion	3	299
Marshall	2	619
Maury	2	1087
McMinn	3	382
McNairy	1	294
Meigs	3	229
Monroe	3	287
Montgomery	2	669
Moore	2	145
Morgan	3	198
Obion	1	257
Overton	3	298
Perry	1	176
Pickett	3	126
Polk	3	94
Putnam	3	265
Rhea	3	269
Roane	3	320
Robertson	2	618
Rutherford	2	710
Scott	4	204
Sequatchie	3	185
Sevier	4	243
Shelby	1	105
Smith	2	327
Stewart	1	343
Sullivan	4	391
Sumner	2	548
Tipton	1	124
Trousdale	2	136
Unicoi	4	56
Union	4	211
Van Buren	3	173
Warren	3	270
Washington	4	388
Wayne	2	305
Weakley	1	554
White	3	355
Williamson	2	514
Wilson	2	695
Grand total		**29,940**

Based on reported harvest, the 2022 spring harvest of 29,940 was 9% lower than the 2021 reported harvest, and 10% below the 5-year average (Figure 1). Harvest during the 2022 two-day Young Sportsman hunt (1,039) was 5% lower than 2021 and was down 7% compared to the recent five-year average harvest of 1,114. Harvest on public lands and WMAs where harvest is tracked separately was 2,188, a decrease of 5% from last year, but essentially unchanged (1% greater) from the previous 5-year average of 2,157. The top five counties in the state for reported harvest were Maury, Greene, Dickson, Rutherford, and Wilson counties (Table 1).

Region 2 continued to have the highest reported harvest, followed distantly by Region 1 (Figure 2). Specific to the two areas of the state with special regulations, total reported harvest was down 16% from the 5-year average for these counties; however, the season was 14 days shorter by comparison. When harvest through just the first 32 days of hunting (equivalent to the shortened season) are compared, harvest in 2022 was only down 8% from the 5-year average, similar to the statewide season results.

Despite the change in bag limits the previous spring, the breakdown of the number of birds per hunter during the 2022 spring season changed little from previous years, basically shifting percentages up or down slightly (1% - 3%) in each category: 68% of successful hunters harvested 1 bird; 22% bagged 2 birds; and 9% of successful hunters took home 3 birds. Of harvested gobblers, 84% were adult males and 16% were jakes based on self-reported harvest figures.

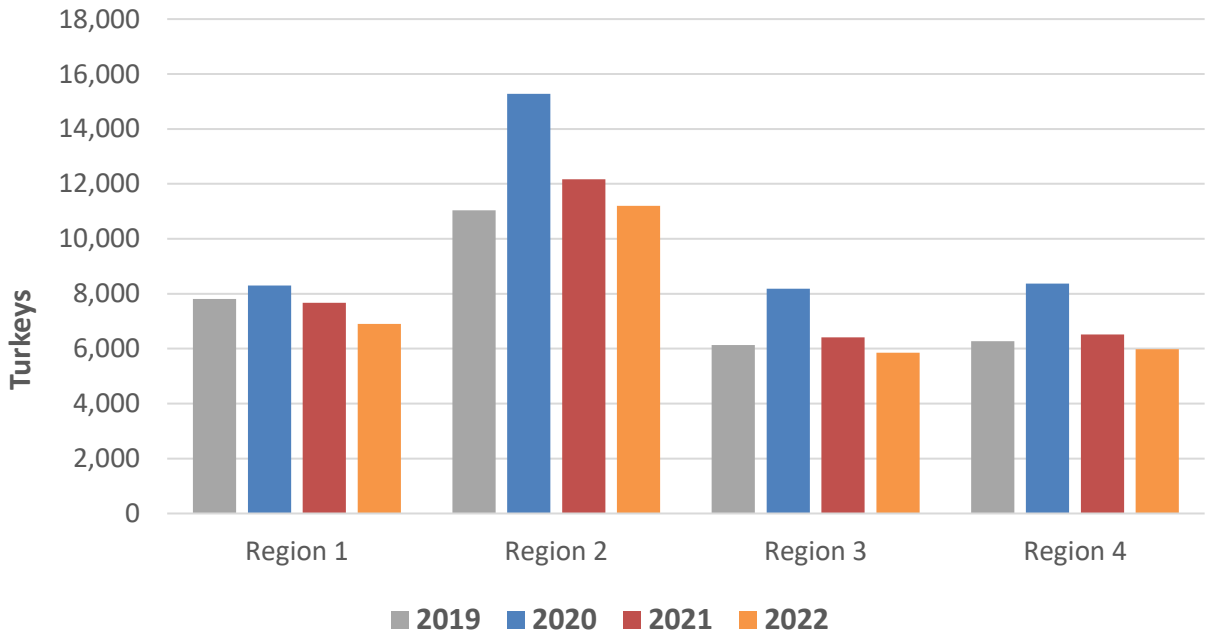


Figure 2. Total reported spring turkey harvest by TWRA administrative region, 2019 - 2022.

Hunter Harvest Survey

Beginning with the 2020 spring turkey season, TWRA has contracted with the University of Tennessee to conduct an annual harvest survey of wild turkey hunters. The primary objective of this turkey hunter

survey is to estimate hunter numbers, hunting effort, and harvest success at the statewide level as well as by TWRA administrative region. Another objective is to understand hunter satisfaction and their opinions regarding various topics related to wild turkeys. One of the strengths of this survey is it uses standardized survey protocols and a statistically valid sample representative of the hunter population that allows results to be estimated with confidence intervals. So, even though estimates generated from the survey may differ markedly from reported harvest numbers, one can assess the level of confidence associated with these estimates. Further, the survey guarantees respondent anonymity, which bolsters honest reporting. This additional, statistically valid information on hunting effort and success provides for better monitoring of the turkey population and harvest trends over time than simply harvest numbers alone.

The sampling frame used for this survey consisted of individuals ≥18 years of age who had a valid license to hunt turkeys in Tennessee during the spring turkey season. We also included individuals who reported harvesting a turkey during the season to account for landowners who hunted their own property and were therefore exempt from license requirements. We used a stratified random sampling approach to ensure all license types were represented and we assigned participants to one of six strata (Annual, Disability, Lifetime, Non-resident, Permanent Senior, and Reported Harvest) based on expected differences in response rate and a general similarity in license types. To collect data on turkeys harvested by youth during the turkey season, we asked the adult survey participants a series of questions regarding turkey harvest by youth they guided or mentored.

We used a mixed-mode approach to survey resident and non-resident spring turkey hunters in Tennessee. Individuals who had an email address on file were first invited to complete an online version of the survey. Three reminder emails were sent over a 2-week period. We then sent a hard copy of the survey with a business reply envelope to those who did not respond to the email invitation and those who did not have an email address on file. After a week, a final survey packet was mailed to participants. For additional details on survey methodology and analysis, as well as complete survey results, please refer to the full survey technical report available online at: https://www.tn.gov/content/tn/twra/hunting/big-game/turkey.html.

Results

During the spring 2022 turkey season, an estimated 95,905 ± 6,425 hunters (72,307 ± 3,685 adults and 23,598 ± 2,740 youth) statewide participated in turkey hunting and spent 724,726 ± 43,688 days afield. This was an increase in terms of hunters and time spent afield over spring 2021 (Table 2), although neither difference was significant. Adult and youth hunters combined harvested an estimated 48,359 turkeys (41,492 ± 4,462 adult gobblers, 6,676 ± 1,452 jakes, and 191 ± 243 bearded hens). The statewide harvest rate (the number of birds harvested per day of hunting) averaged 0.10 ± 0.01 for adult hunters and 0.14 ± 0.02 birds per day for youth hunters. This was the lowest harvest rate seen over the three years we have been conducting the hunter survey and a significant drop from 2021 rates (0.14 ± 0.01 and 0.20 ± 0.05, respectively) for adult hunters, although not for youth hunters. Overall, for license holders, 53% of adult hunters and 35% of youth hunters harvested at least one turkey during the 2022 spring turkey season. An additional estimated 2,939 ± 919 turkeys were shot but not killed or recovered by hunters (estimate excludes clean misses) during the 2022 spring turkey hunting season.

Most Tennessee hunters pursued turkeys to some degree on private land. From survey responses regarding where people hunt, an estimated 52,219 adults hunted only private land with another estimated 10,908 hunting both private and public land, whereas only 6,789 adult hunters exclusively

Table 2. Estimated numbers of hunters and days afield for spring turkey seasons, 2020-2022.

	Total Hunters	95% CL	Total Days	95% CL
Spring 2020	90,015	5,659	728,558	47,737
Spring 2021	91,247	8,384	682,302	39,457
Spring 2022	95,905	6,425	724,726	43,688

hunted public land. Adult hunters who hunted both public and private land spent 14.7 ± 1.5 days afield on average, significantly greater than the 8.5 ± 0.5 and 7.2 ± 1.2 days spent by hunters on exclusively private and public lands, respectively. Harvest rate also differed significantly by land type. The harvest rate for those who hunted on both public and private land was 0.06 ± 0.01, well below the 0.10 ± 0.01 harvest rate estimated for both private land-only and public land-only hunters.

Regional differences occurred in harvest results. Significantly more adults hunted in Region 2 than any other region, and significantly more birds were harvested by adult hunters in Region 2 than in Regions 3 and 4 (Table 3). Likewise, the estimated harvest rate was greatest in Region 2 (0.11 ± 0.02 birds/day) and differed significantly from that of Region 3, which had the lowest rate (0.07 ± 0.02; Table 3). Interestingly, the percentage of the gobbler harvest comprised of juvenile birds generally increased from west to east (Table 3).

Table 3. Estimated numbers of adult spring turkey hunters, harvest by adult hunters, and harvest metrics by TWRA administrative region, 2022.

	Adult Hunters	95% CL	Total Harvest	95% CL	Harvest Rate	95% CL	% Jakes
Region 1	18,212	1,985	10,067	1,384	0.09	0.02	8.73
Region 2	24,285	2,134	12,579	1,394	0.11	0.02	12.15
Region 3	15,160	1,970	5,327	1,154	0.07	0.02	11.61
Region 4	15,306	1,984	7,811	2,150	0.09	0.02	15.74

Slightly more than half (52%) of Tennessee turkey hunters reported being somewhat or very satisfied with their hunting experience in 2022. Another 16% of respondents indicated being neither dissatisfied nor satisfied and around a third (32%) of respondents reported being dissatisfied or very dissatisfied with their turkey hunting experience this year (Figure 3). Satisfaction levels differed very little by administrative region, but a greater proportion of hunters in regions 2 and 3 reported being somewhat or very satisfied compared to hunters in regions 1 and 4 (Figure 3).

From the 2022 survey, we obtained information on hunter opinions about turkey populations in the areas they hunt. Nearly two-thirds (64%) of the respondents perceived the turkey population in areas they hunt to have decreased over the years, whereas just 14% feel populations have increased (Figure 4). A relatively greater proportion of hunters in Region 1 reported declines in turkey populations compared to hunters in the other regions (Figure 4). When asked, hunters who reported observing declining populations in the areas they hunt overwhelmingly (62%) believed low nest success and poult survival to be the primary reason for observed declines, with predation on adults being cited by 45% of

respondents. Only a third or fewer of hunters believed other potential causes (e.g., hunting pressure loss of habitat, bad weather during nesting season) were related to declining populations.

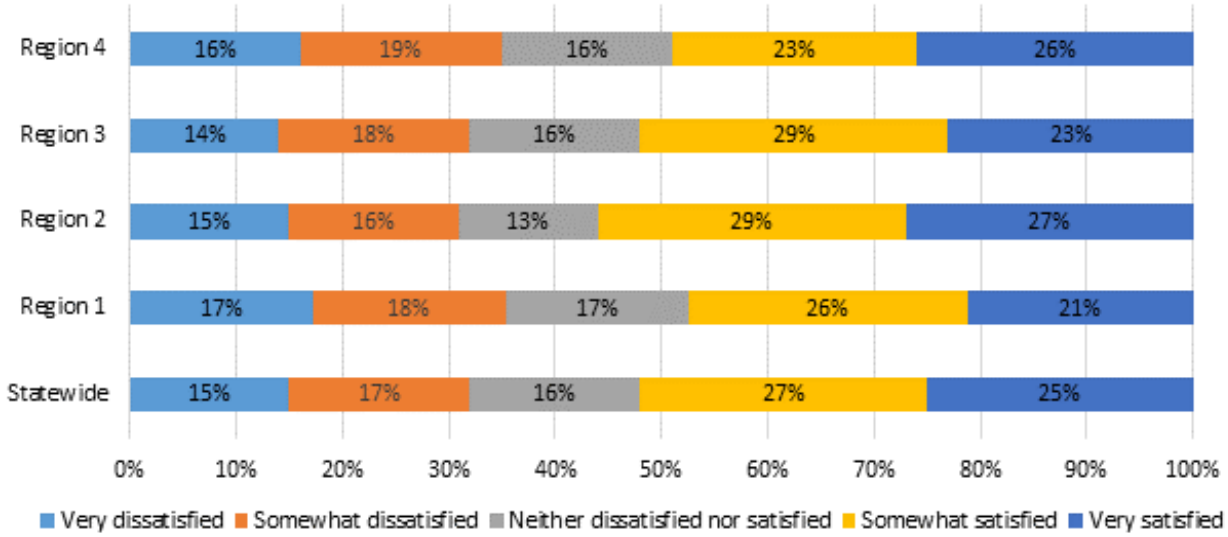


Figure 3. Reported satisfaction of spring turkey hunters with their spring 2022 hunting experience.

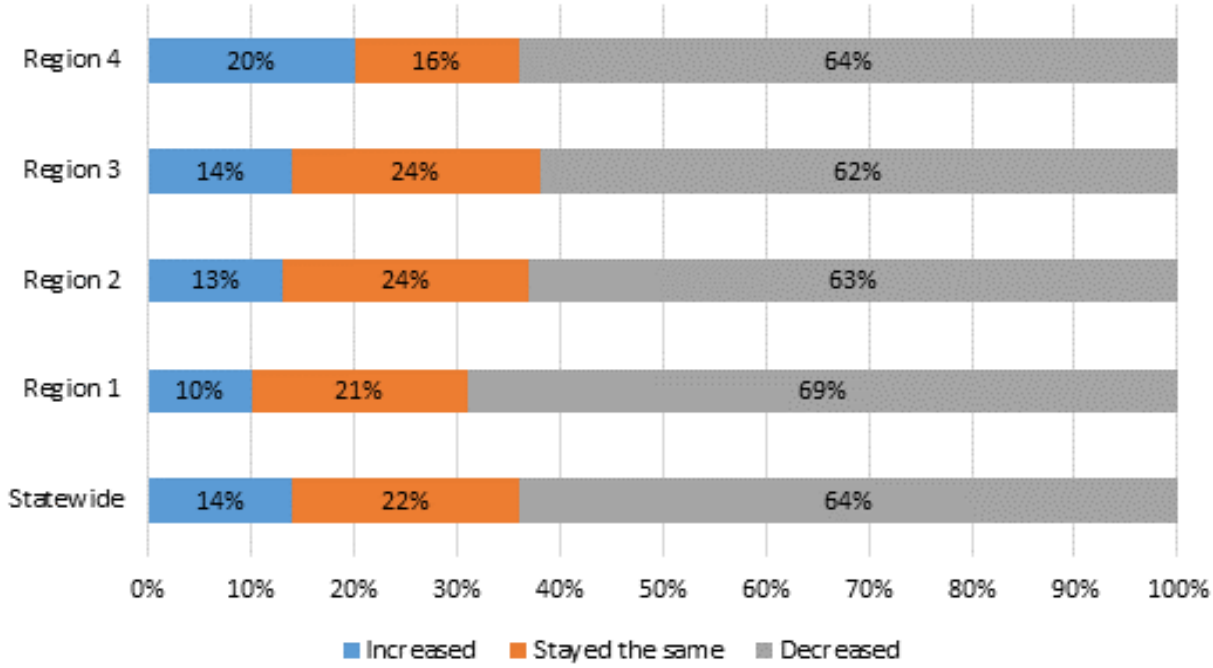


Figure 4. Perceptions of Tennessee turkey hunters in 2022 regarding how turkey populations in the areas they hunt have changed over time.

Fall Turkey Season

In 2018, the Tennessee Fish and Wildlife Commission eliminated either-sex fall hunting in favor of bearded turkeys only during the fall beginning with the 2018 season. Consequently, subsequent fall harvest numbers are not readily comparable to earlier harvests. The total reported 2022 fall season harvest was 404 birds, an increase of 79% from the 2021 fall season harvest of 226 birds and the highest harvest since the new fall regulations took effect in 2018. Hickman, Cheatham, Greene, Sullivan, and Davidson counties were the top five counties in the state for fall 2022 (Table 4). Harvest in the fall on WMAs was minimal, with just 16 birds reported harvested on 12 WMAs (Table 5).

Juvenile males (i.e., “jakes”) accounted for roughly 9% of the statewide fall gobbler harvest in 2022. Jakes comprised the highest proportion of the harvest in Region 2, representing 10% of the gobbler harvest (Figure 5). Bearded females represented about 7% (28 birds) of the fall harvest in 2022. Clearly, regulatory efforts to protect the female segment of the turkey population from harvest are succeeding. Even though the bag limit during the fall is one bearded turkey per county, only nine hunters reported harvesting more than a single bird during the fall season.

Table 4. Reported fall turkey harvest by county (inclusive of WMA harvests), 2022. (Note, counties with no value for harvest were closed during the fall season.)

County	Region	Total Harvest
Anderson	4	3
Bedford	2	4
Benton	1	4
Bledsoe	3	.
Blount	4	8
Bradley	3	.
Campbell	4	4
Cannon	2	2
Carroll	1	7
Carter	4	1
Cheatham	2	15
Chester	1	2
Claiborne	4	3
Clay	3	1
Cocke	4	10
Coffee	2	2
Crockett	1	1
Cumberland	3	5
Davidson	2	13
Decatur	1	4
Dekalb	3	2
Dickson	2	10
Dyer	1	.
Fayette	1	2
Fentress	3	3
Franklin	2	4
Gibson	1	3
Giles	2	.
Grainger	4	2
Greene	4	15
Grundy	3	1
Hamblen	4	3
Hamilton	3	9
Hancock	4	5
Hardeman	1	5
Hardin	1	2
Hawkins	4	10
Haywood	1	.
Henderson	1	3
Henry	1	5
Hickman	2	17
Houston	1	5
Humphreys	1	0
Jackson	3	5
Jefferson	4	7
Johnson	4	4
Knox	4	8
Lake	1	.

County	Region	Total Harvest
Lauderdale	1	.
Lawrence	2	.
Lewis	2	7
Lincoln	2	.
Loudon	4	1
Macon	2	0
Madison	1	4
Marion	3	9
Marshall	2	12
Maury	2	8
McMinn	3	.
McNairy	1	4
Meigs	3	4
Monroe	3	.
Montgomery	2	7
Moore	2	0
Morgan	3	3
Obion	1	1
Overton	3	2
Perry	1	6
Pickett	3	.
Polk	3	.
Putnam	3	4
Rhea	3	9
Roane	3	5
Robertson	2	4
Rutherford	2	7
Scott	4	5
Sequatchie	3	2
Sevier	4	7
Shelby	1	.
Smith	2	3
Stewart	1	5
Sullivan	4	15
Sumner	2	10
Tipton	1	.
Trousdale	2	0
Unicoi	4	.
Union	4	2
Van Buren	3	4
Warren	3	4
Washington	4	8
Wayne	2	.
Weakley	1	3
White	3	5
Williamson	2	4
Wilson	2	11
Grand total		**404**

Table 5. Fall turkey harvest by WMA, 2022.

WMA	Region	2020 Harvest
A.E.D.C. WMA	2	1
Bear Hollow Mountain WMA	2	1
Cheatham WMA	2	1
Chickamauga WMA	3	1
Cross Creeks NWR	1	2
Harmon Creek WMA	1	1
North Cumberland WMA	4	1
Pea Ridge WMA	3	1
Tennessee NWR	1	1
Watts Bar WMA	3	1
Yanahli WMA	2	1
Other	na	4
Grand total		**16**

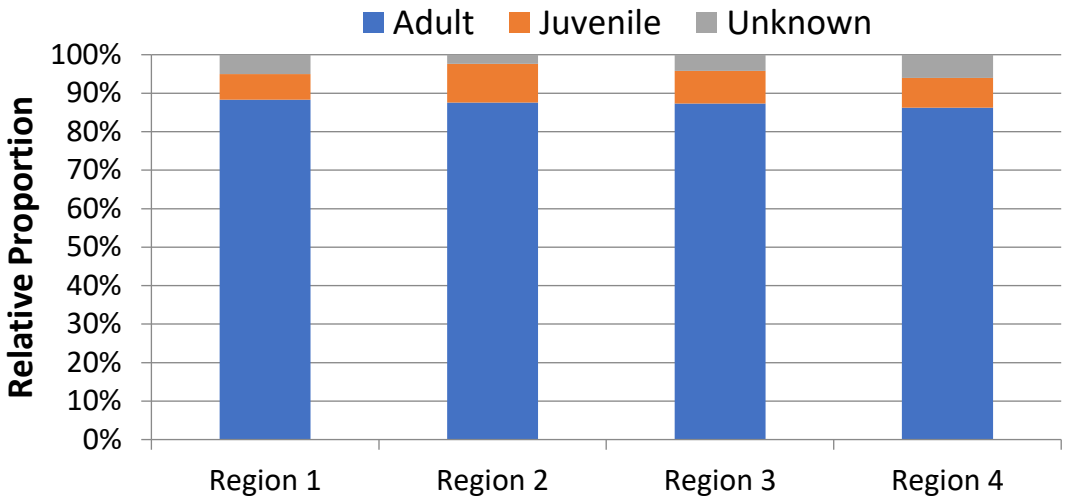


Figure 5. Proportion of juvenile males in the fall gobbler harvest by TWRA administrative region, 2022.

Statewide Summer Wild Turkey Survey

TWRA maintains records of sightings of wild turkeys to provide supplemental data on population trends. Each year since the 1980s, we conduct a wild turkey summer observational survey. These sightings provide us estimates for monitoring trends in nesting success, trends in brood survival, trends in annual productivity, peak hatching dates on turkey brood range, and carry-over of males from the spring hunting season.

The main purpose of the summer survey is to obtain wild turkey production and population data which can be compared with previous year's data in evaluation of population trends. Data is collected from June to August, but historically only August data has been used to obtain most of the estimates, including an overall poult to hen ratio estimate. The reasoning behind this is based on the fact that if a poult makes it into the month of August, survival odds are much greater.

Metrics estimated from data collected during the survey provide indices of productivity and population status. The percentage of hens observed with poults is an estimate of annual nesting success. The number of poults accompanying hens observed with poults (or poults per brood) is an indication of poult survival, as is brood attrition by age-class. The poults per hen ratio is a measure of overall productivity. Back-dating based on age class of poults observed generates an estimated nest chronology and an indication of when peak nesting for the year occurred. Lastly, the ratio of gobblers to hens provides an estimate of gobbler carry-over from the spring hunting season. Large harvests in the spring will typically lead to lower numbers of gobblers observed in the summer relative to hens. In broad terms, estimates <0.50 gobblers per hen indicate that excessive gobbler harvests may be occurring if quality spring harvest (i.e., abundant older-aged gobblers) is a management goal, while estimates approaching 1.0 gobbler per hen indicate there may be an additional harvestable surplus of gobblers.

Historically the summer survey has been conducted only by agency staff and other natural resource professionals who record observations of wild turkeys made incidental to regular field activities from June through the end of August (see Appendix A for survey form). Because of poor coverage of the state due to limited numbers of staff and cooperators in some counties, beginning this year, we invited the public to take part in the survey. These citizen scientists were able to report turkey observations using an electronic survey form via the TWRA website or with a mobile device using the Survey 123 app. Each observer was asked to record the date and county of the observation, the number of adult individuals by sex, the number and age class of poults, and whether the observation was made on private or public lands. Accurate counts are important; if more than one hen is present with a group of poults, the observer ascertains if there is more than one age group present. The observer also notes if vegetation inhibited an accurate poult count and whether they had likely seen this group of turkeys before.

Results

Observations were recorded during the 2022 summer survey by 133 different staff and cooperator observers and 2,786 unique public observers. Agency staff and cooperators recorded 1,283 observations and survey participants from the public recorded 4,217 observations. As a result of public participation, all 95 counties were represented in the survey even though staff observations occurred in only 84 total counties. All the same, not all counties were represented equally (Table 6, Figure 6). To

improve reliability of the estimates generated by these surveys, it would be preferable to obtain a more balanced coverage of the state (i.e., all counties with >30 observations).

Table 6. Number of Summer Wild Turkey Survey observations by county, 2022.

Region	County	Staff Count	Public Count	Region	County	Staff Count	Public Count
1	Benton	30	53	3	Bledsoe	4	27
1	Carroll	2	29	3	Bradley		37
1	Chester		13	3	Clay		20
1	Crockett	1	4	3	Cumberland	29	70
1	Decatur	3	12	3	Dekalb	6	36
1	Dyer	11	12	3	Fentress	2	10
1	Fayette	3	26	3	Grundy		20
1	Gibson	30	22	3	Hamilton	5	118
1	Hardeman	1	26	3	Jackson	2	34
1	Hardin	27	21	3	Marion	14	34
1	Haywood		9	3	McMinn	2	51
1	Henderson	5	22	3	Meigs	1	30
1	Henry	8	40	3	Monroe	31	29
1	Houston		33	3	Morgan	1	19
1	Humphreys	7	56	3	Overton	5	43
1	Lake	1	6	3	Pickett	2	6
1	Lauderdale	20	5	3	Polk	13	20
1	Madison	25	31	3	Putnam	8	39
1	McNairy	1	14	3	Rhea	4	98
1	Obion	15	6	3	Roane	7	101
1	Perry	3	11	3	Sequatchie	4	18
1	Shelby	10	45	3	Van Buren	10	32
1	Stewart	102	37	3	Warren	1	12
1	Tipton	6	14	3	White	27	44
1	Weakley	26	23	4	Anderson	7	37
2	Bedford	19	58	4	Blount	4	118
2	Cannon	12	18	4	Campbell	34	19
2	Cheatham	8	83	4	Carter		41
2	Coffee	5	29	4	Claiborne	11	6
2	Davidson	1	202	4	Cocke	7	23
2	Dickson	2	165	4	Grainger	1	13
2	Franklin	92	29	4	Greene	27	74
2	Giles	7	36	4	Hamblen	6	21
2	Hickman	31	43	4	Hancock	1	6
2	Lawrence	28	20	4	Hawkins		66
2	Lewis	2	31	4	Jefferson	23	54
2	Lincoln	1	32	4	Johnson		16
2	Macon		11	4	Knox	4	162
2	Marshall	7	46	4	Loudon	1	43
2	Maury	15	91	4	Scott	17	11
2	Montgomery	271	110	4	Sevier	3	59
2	Moore	1	15	4	Sullivan	3	66
2	Robertson		88	4	Unicoi	6	31
2	Rutherford	29	142	4	Union	22	10
2	Smith	2	34	4	Washington	4	36
2	Sumner	1	126		**Grand Total**	**1,283**	**4,217**
2	Trousdale	1	26				
2	Wayne	18	18				
2	Williamson	19	186				
2	Wilson	15	148				

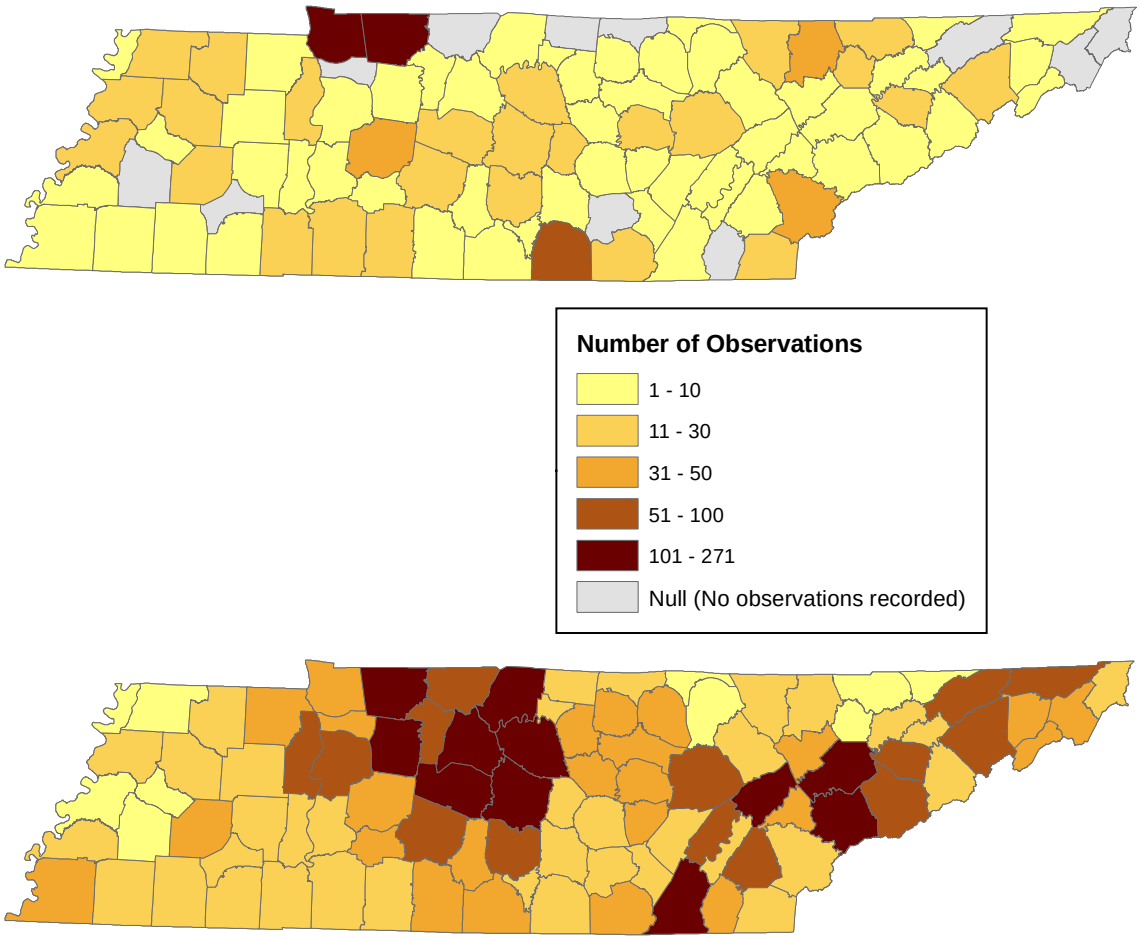


Figure 6. Number of observations of wild turkeys by agency staff (top map) and public observers (bottom map) by county during the Summer Wild Turkey Survey, 2022.

In general, survey metrics obtained from public observations were lower than those obtained by staff (Table 7, Figure 7). The reason for this pattern is unclear, but it may be related to differences in the way observers recorded older age-class poults that can resemble adult hens by late in the summer. Nevertheless, the general trends across regions were consistent between the observer groups.

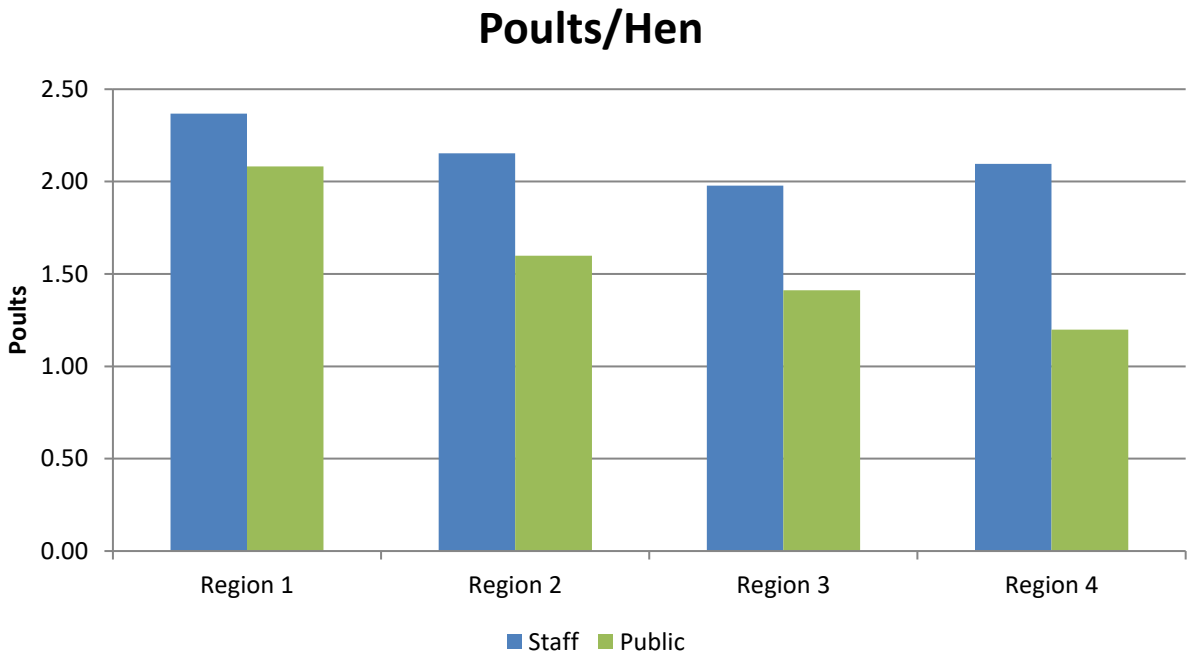
Regionally, west Tennessee (TWRA Region 1) had greater reproductive output in 2022, both in terms of poults per hen and brood size, than the other regions in Tennessee (Table 7, Figure 7). This strong production from west Tennessee was especially needed because productivity has been down in this part of the state for several years. Region 3, which for the past few years has consistently recorded the highest productivity, was among the lowest this year.

Long-term August poult to hen ratios show a fairly steady decline (Table 8, Figure 8), although numbers seem to have leveled off somewhat over the past decade, fluctuating at around 2.0 poults per hen. The 2022 results (2.2 poults per hen, based on traditional staff observer numbers) were above the previous 5-year average (1.9). Broods averaged 3.4 poults (based on traditional staff observer numbers), equivalent to the previous 5-year average (3.4), suggesting poult survival was about average this year (Table 9). (Note, although estimates of brood size are substantially lower than results reported prior to 2015, methodology used to calculate the estimate was different prior to 2015.) The proportion of hens with poults has steadily declined over the years of data collection, from >75% in the 1980's to <60% in the 2010's. This year, 64% of hens were observed with poults, slightly better than last year and marking the second year in a row where >60% of hens were observed with poults, something that hasn't happened since 2003 and 2004. All told, these slightly improved estimates of productivity are encouraging and should provide a small boost to local populations. By and large, the productivity trends of lower, but somewhat stable, measures observed over the past 5-10 years may be reflective of a statewide population that peaked after years of steady increase and has now settled into a more stable population with annual variation around a point of lower average productivity.

Table 7. Summary of reproductive data from the Summer Wild Turkey Survey [a], 2022.

	Total Turkeys Reported	Total Hens Reported	% of Hens w/ Poults	Poults per Hen Ratio	Poults per Brood	Total Poults Reported	Gobbler to Hen Ratio
Staff Observers							
Region 1	735	190	62.6%	2.37	3.78	450	0.53
Region 2	1259	319	63.3%	2.15	3.40	687	0.65
Region 3	299	88	71.6%	1.98	2.76	174	0.35
Region 4	243	63	65.1%	2.10	3.22	132	0.64
Statewide	2,536	660	64.4%	2.19	3.40	1,443	0.58
Public Observers							
Region 1	3,414	935	69.3%	2.08	3.00	1,947	0.46
Region 2	9,455	2,921	65.8%	1.60	2.43	4,672	0.52
Region 3	4,934	1,642	56.3%	1.41	2.50	2,317	0.52
Region 4	4,089	1,444	52.2%	1.20	2.30	1,731	0.58
Statewide	21,892	6,942	61.2%	1.54	2.51	10,667	0.53

[a] All estimates are from August observations only, except the Gobbler to Hen ratio, which is calculated from all observations during the June - August survey period.



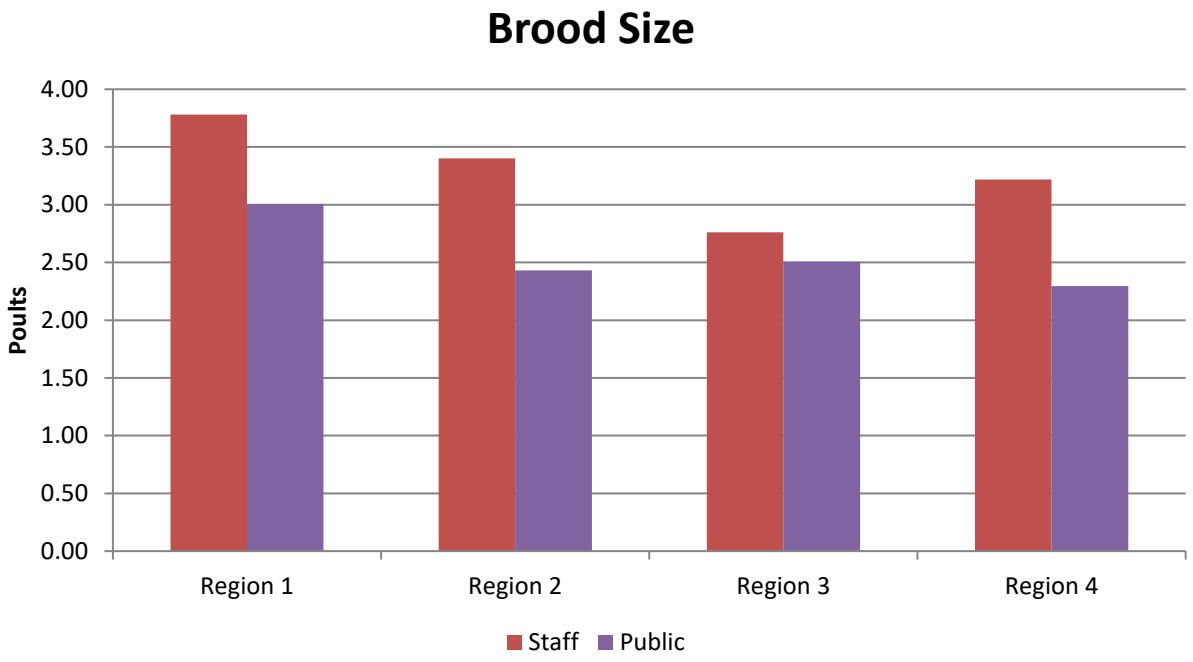


Figure 7. Overall productivity (top graph) and brood size (bottom graph) by TWRA administrative region estimated from the Summer Wild Turkey Survey, 2022.

Table 8. Historical statewide Summer Wild Turkey Survey data, 1983-2022.

Year	Total Turkeys Reported	Total Hens Reported	% of Hens With Poults	Poults per Hen Ratio	Poults per Brood [a]	Total # of Poults
1983	471	68	61.8	5.3	6.8	360
1984	837	131	72.5	4.8	6.9	629
1985	1,216	138	76.8	7.0	7.2	966
1986	1,505	198	72.9	5.9	6.4	1,168
1987	1,528	235	81.3	4.9	7.0	1,152
1988	1,838	298	81.3	4.6	4.7	1,371
1989	1,976	232	88.4	6.4	7.4	1,485
1990	1,893	273	89.0	4.4	6.2	1,206
1991	2,739	421	85.5	4.9	7.4	2,028
1992	1,816	424	63.2	2.9	5.9	1,233
1993	3,037	491	84.5	4.6	6.7	2,258
1994	5,310	870	78.9	4.5	6.5	3,895
1995	3,173	518	72.6	4.5	6.7	2,350
1996	4,179	760	78.6	4.2	6.4	3,164
1997	2,856	663	60.5	2.8	5.7	1,831
1998	5,124	893	78.4	4.3	6.2	3,853
1999	3,100	592	74.5	3.8	6.4	2,229
2000	4,726	837	77.3	3.8	5.8	3,192
2001	3,573	606	76.9	4.0	6.1	2,415
2002	5,796	1,063	73.6	3.8	5.8	4,054
2003	2,126	574	60.6	2.4	6.0	1,365
2004	2,640	611	65.3	3.0	6.5	1,828
2005	1,540	369	50.1	2.6	5.0	964
2006	2,768	707	55.7	2.6	6.0	1,819
2007	2,100	593	53.8	2.2	4.2	1,277
2008	2,409	598	54.5	2.4	4.8	1,418
2009	1,478	377	57.8	2.5	6.2	957
2010	1,964	568	53.9	2.2	6.0	1,241
2011	4,278	1,110	56.7	2.3	6.1	2,587
2012	2,066	654	57.4	2.2	5.3	1,412
2013	2,487	806	51.9	2.1	5.6	1,683
2014	2,533	820	53.2	1.8	5.5	1,483
2015	2,760	746	59.8	2.3	3.8	1,689
2016	3,328	1,097	53.3	1.6	3.0	1,737
2017	2,661	836	56.8	1.7	3.0	1,444
2018	2,166	607	58.8	2.1	3.5	1,257
2019	2,128	642	54.7	1.8	3.3	1,166
2020	1,340	470	43.0	1.4	3.3	664
2021	2,820	789	60.3	2.2	3.7	1,754
2022	2,536	660	64.4	2.2	3.4	1,443
Average	2,621	584	66.3	3.4	5.6	1,751

[a] Prior to 2015, surveys recorded number of broods for each observation and the poults per brood (PPB) estimates were calculated based on that number; beginning 2015, PPB was calculated as PPB = #poults/#hens with poults

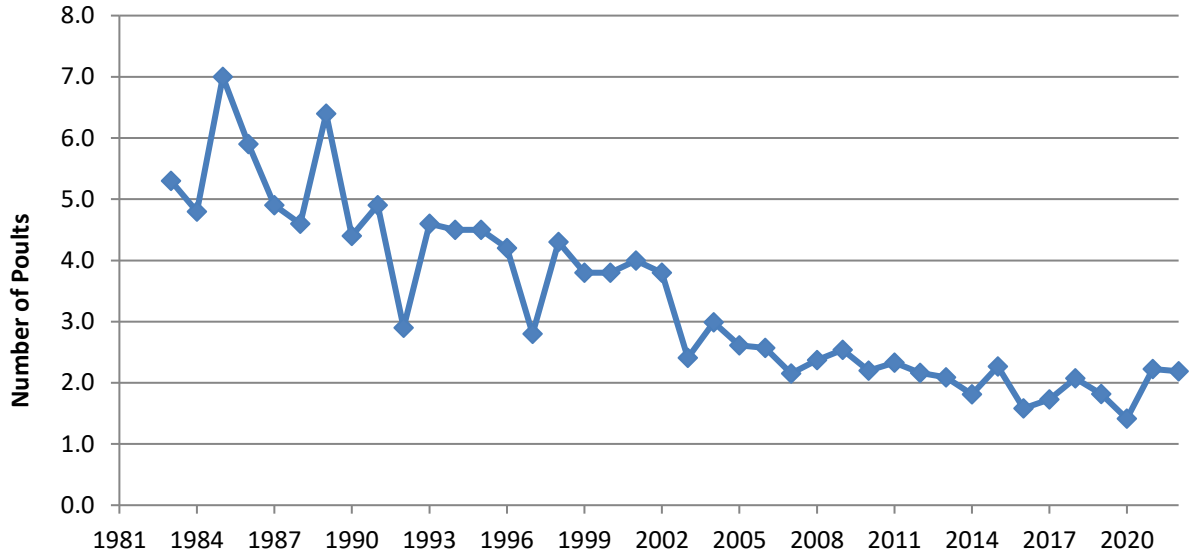


Figure 8. Statewide productivity estimates (poults per hen ratios) obtained from Summer Wild Turkey Survey data during the month of August, 1983-2022.

Table 9. Statewide average brood size by age class, 2003-2022.

	Poult Age Class [a]		
Year	1	2	3
2003	6.6	4.2	5.2
2004	7.4	6.4	5.4
2005	4.8	5.6	5.1
2006	6.4	5.0	4.6
2007	7.3	5.3	4.5
2008	6.3	6.0	4.7
2009	6.8	5.6	5.0
2010	6.6	4.8	5.0
2011	5.3	6.1	5.5
2012	5.1	6.3	5.9
2013	5.8	4.6	4.2
2014	3.7	3.5	4.4
2015	5.1	4.5	4.2
2016	4.1	4.1	3.3
2017	5.0	3.4	3.2
2018	4.7	3.8	3.5
2019	4.2	4.0	3.6
2020	3.4	3.3	3.5
2021	4.4	4.2	3.7
2022	3.4	2.8	3.3
Average	5.3	4.7	4.4

[a] Age classes: 1 = 1 week; 2 = 2-5 weeks; 3 = 6-8 weeks and older

Based on estimated age-classes of poults observed during the Summer Wild Turkey Survey (Table 9) and standard back-dating, earliest onset of egg-laying began the week of March 8 in 2022, but most successful nests (including initial attempts and renesting attempts) were initiated between the weeks beginning April 19 and June 7 (Figure 9). Median initiation date for all nesting attempts was during the week of May 17.

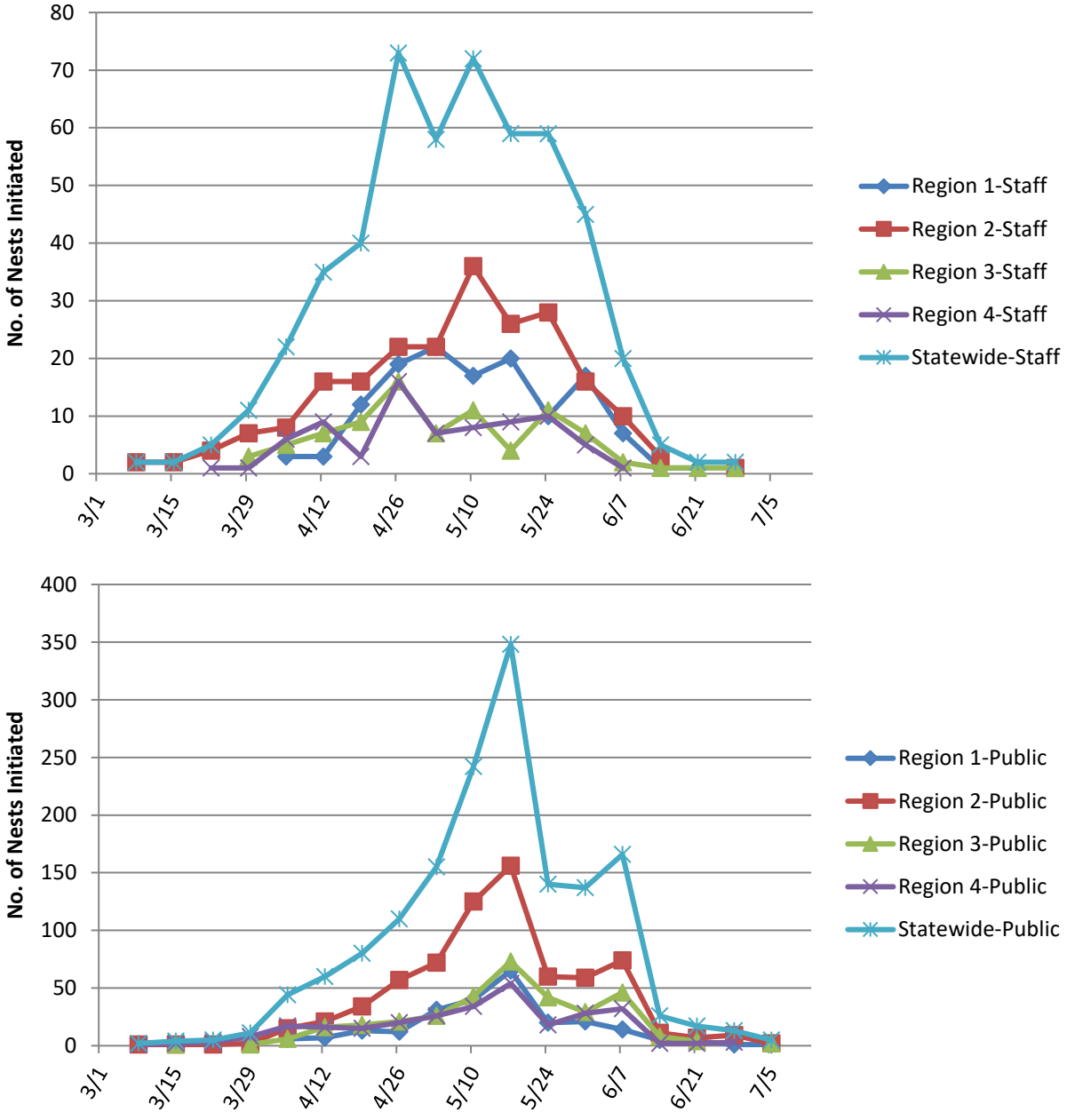


Figure 9. Statewide wild turkey nests initiated per week based on staff (top chart) and public (bottom chart) observations, 2022.

Appendix A.

ANNUAL WILD TURKEY SUMMER SURVEY

Name: _____

Phone Number: _____

RETURN TO:

- Supervisor by September 1
- Regional Biologist by September 5
- Nashville Office by September 10

WILD TURKEY POULT AGE CLASSES

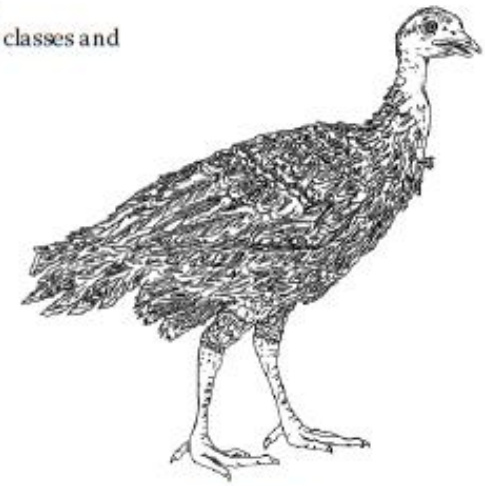
Please classify poults observed as one of these three age classes and record in the "poult age" column.

CLASS 1

cardinal size (Week 1)
up to 6 inches tall
full down
2 wing bars

CLASS 2

quail - wood duck size (Weeks 2–5)
7 - 10 inches tall
downy body, feathered wings
3 - 4 wing bars



CLASS 3

≥ chicken size (Weeks 6–8)
14 - 15 inches tall
body with contour feathers, some down at neck
black and white primaries emerging

Tennessee Wildlife Resources Agency

WILD TURKEY SUMMER SURVEY

Name: _____ Affiliation _____ E-mail: _____ Phone #: _____

Date	County	# of hens without poults	# of hens with poults	# of poults	Poult age class	Complete observation?	# of males	# of ***adults*** unknown gender	Likely seen before?	Private or public land
					1 2 3	yes no			yes no	Priv. Pub.
					1 2 3	yes no			yes no	Priv. Pub.
					1 2 3	yes no			yes no	Priv. Pub.
					1 2 3	yes no			yes no	Priv. Pub.
					1 2 3	yes no			yes no	Priv. Pub.
					1 2 3	yes no			yes no	Priv. Pub.
					1 2 3	yes no			yes no	Priv. Pub.
					1 2 3	yes no			yes no	Priv. Pub.
					1 2 3	yes no			yes no	Priv. Pub.
					1 2 3	yes no			yes no	Priv. Pub.
					1 2 3	yes no			yes no	Priv. Pub.
					1 2 3	yes no			yes no	Priv. Pub.
					1 2 3	yes no			yes no	Priv. Pub.
					1 2 3	yes no			yes no	Priv. Pub.
					1 2 3	yes no			yes no	Priv. Pub.
					1 2 3	yes no			yes no	Priv. Pub.

- Please record all observations of gobblers, hens, and poults on this form.
- Record each observation on a single row. However, if poults of different age classes are present, record the number of poults in each age class on separate lines, with the accompanying hen group (brood).
- Accurate counts are important. When observing from a vehicle, pull over (if possible) to get a good look, preferably using binoculars.
- **Complete Observation**: If you are unable to get an accurate poult count due to vegetation cover, rapid movement, etc., circle "no." Incomplete counts are still used in data analysis.
- **Likely Seen Before**: If you suspect observations of the same turkey(s) are being made, record once per month and circle "yes" for subsequent observations.

Survey period begins June 1 and continues through August 31. Use multiple forms if needed.
Direct question/comments to: Roger Shields, TWRA Wild Turkey Program Coordinator, roger.shields@ tn.gov, (615) 781-6619.

WR-1032 (Rev. 4/21) • Wildlife & Forestry Division

Thank you for participating!