

Spring Turkey Harvest Survey Report 2021



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2021 Spring Turkey Harvest Survey Report



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Abstract

Following the 2021 spring turkey hunting season, a stratified random sample of statewide big game hunting license holders (both resident and non-resident) was contacted by a combination of email and mail surveys to estimate the turkey hunting participation, hunting effort, and harvest in Tennessee. Of 17,000 total license-holders contacted, 5,198 responses were received. During the spring 2021 turkey season, an estimated 91,247 hunters (67,091 adult and 24,156 youth) statewide participated in turkey hunting and spent 682,302 days afield. Adult and youth hunters statewide harvested an estimated 53,669 turkeys (47,895 adult gobblers, 5,153 jakes, and 621 bearded hens). An estimated 7,214 birds were shot but not killed or recovered during the 2021 spring turkey season. Overall, 59% of the statewide respondents were somewhat or very satisfied with their turkey hunting experience in the 2021 spring turkey season. Sixty percent of the respondents perceived the turkey population in areas they hunt to have decreased over the years. The three most frequently mentioned reasons behind a perceived decline in turkey populations included predation on nests and poults, nesting success and poult survival, and predation on adults.

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Introduction

The Tennessee Wildlife Resources Agency (TWRA) is a state agency in Tennessee responsible for the management of game species including turkey, deer, etc. For better monitoring of the turkey population and harvest trends over time, the agency benefits from understanding annual hunting participation, hunting effort, and harvest estimates for all game species including wild turkey. Estimating participation, effort, and harvest by types of land (e.g., private and public) and by TWRA administrative regions (R1, R2, R3, R4) as shown in Figure 1 allows for comparing effort and success and devising programs to enhance the hunting experience. In addition to participation and harvest, it is also important to continue monitoring hunters' satisfaction and perception of population trends. Estimating harvest often involves designing a systematic survey of randomly selected hunters to collect data on seasonal hunting participation and harvests.

In order to meet the above-mentioned needs, the primary objective of this turkey hunters survey was to estimate hunter numbers, hunting effort, and harvest at the statewide level as well as by TWRA administrative region. The other objective was to assess satisfaction and perception of population in the areas hunted and perceived reasons for changes in population.

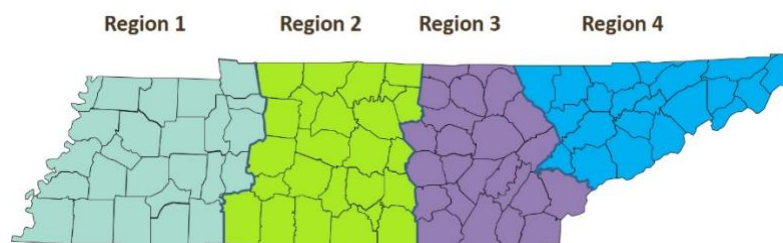


Figure 1: Map of TWRA administrative regions (Source: Tennessee Wildlife Resources Agency)

Methods

This study utilized a mixed-mode survey of resident and non-resident hunters in Tennessee for the 2021 spring turkey hunting season. The sampling frame used for this survey was the population of individuals aged 18 years and older who had a valid license to hunt turkeys, or who reported harvesting a turkey, in Tennessee during the 2021 spring turkey

season. Because of the wide variety of license types that include turkey hunting privileges in Tennessee, a stratified random sampling approach was adopted to ensure representation of all license categories in the survey sample. Based on expected differences in response rate and a general similarity in license types, license holders and hunters who reported to have harvested a turkey during the 2021 spring season were assigned to one of six sampling strata (Annual, Disability, Lifetime, Non-resident, Permanent Senior, and Harvest). Youth hunting license types were not considered in the sampling because only hunters who were at least 18 years of age were surveyed. The first stratum (Annual) included licenses that are annually renewable (types: 04, 09, 10, 11, 164, 167). The second stratum (Disability) included licenses that are available to individuals with physical or intellectual disabilities (types: 169, 189, 198). The third stratum (Lifetime) included all lifetime licenses that did not require annual renewal (types: 401, 402, 403, 404, 405, 406). Those under 18 years of age in lifetime license categories were excluded from the study.

A separate question was asked of adult respondents in the sample to collect data on turkeys harvested by youth guided or mentored during the turkey season. The fourth stratum (Non-resident) included non-junior, non-resident licenses (types: 73, 74). The fifth stratum (Permanent Senior) included the permanent senior citizen hunting license only available to those 65 years and older (type: 166). The final stratum (Harvest) included the individuals who reported to have harvested a turkey in Tennessee during the 2021 spring season.

A total of 17,000 contacts were selected for the mixed-mode survey that was administered in May-June of 2021. Following a modified Tailored Design Method for mail and internet surveys (Dillman et al. 2009), individuals who had an email address on file were first invited to complete the online survey at Qualtrics.com, a secure online survey program housed at University of Tennessee's website. A two-page survey questionnaire (Appendix A) was developed in collaboration with TWRA staff and then approved by the University of Tennessee's Institutional Review Board for human subjects research (Approval #: UTK IRB-20-05821-XM). Those who did not respond to the initial email survey invitation were sent three follow-up reminder emails during a period of two weeks. After the email survey concluded, non-respondents, or those who did not have an email address on file, were contacted by mail. The

initial mail survey packet included a personalized cover letter, survey questionnaire, and a business reply envelope. A week later, a final reminder packet including a copy of the survey questionnaire and a business reply envelope was mailed to encourage participation.

Twelve out of 17,000 license holders contacted for the survey were undeliverable and another 39 were deceased. At the end of survey administration, 5,198 responses (2,927 from email and 2,271 from mail) were received. After adjusting for the undeliverable mails and deceased respondents, the adjusted response rate for the survey was 31%. Although less than ideal, this response rate is attributable to the nature of the sampling frame used. In Tennessee, many sportsmen license types include turkey hunting rights and, consequently, possessors of these licenses are considered as potential hunters in the sampling design. However, many in the sample do not use the turkey hunting privilege included in their license, and therefore, may not respond to a turkey harvest survey request. Nevertheless, this response rate is higher than the range reported in several recent hunter surveys in the southeastern U.S. (Watkins et al. 2018; Mingie et al. 2019; Poudyal et al. 2020).

Statewide number of hunters, days afield, and harvest were calculated separately for adult and youth. In addition, estimates for these metrics were also calculated for the types of land hunted (private, public, both) and the TWRA administrative region (e.g., R1, R2, R3, R4). Any harvest reported without the location of the hunt was recorded in the "Unknown" category. Estimates of harvest were also calculated separately by type of turkey harvested (adult gobblers, jakes, bearded hens). Estimates for relevant variables of hunting effort and harvest metrics were calculated following a stratified random sampling design (Chochran 1977).

As in any survey research, the estimates are subject to sampling error. Where applicable, 95% confidence limits (CL) around the estimates were also reported. Theoretically, the 95% confidence interval can be estimated by adding and subtracting the CL from the estimate. It should be noted that many sources of errors that are beyond researchers' control can influence results in survey studies. Those could include participants failing to provide complete or accurate answers, measurement error due to misinterpretation of question by respondents, etc. However, we do not expect those issues to have substantial effect on the results.

Results

Respondent characteristics

Of 5,198 survey recipients who responded, 91% were male and 95% were white. The average age of the respondents was 53 years. It should be noted that only adults (18 or older) were surveyed. These statistics are very similar to the key demographics of the original sampling frame sample of 17,000 (male: 90%, white: 94%, average age: 50 years). About 47% of the overall respondents indicated they hunted turkeys in Spring 2021 and 6% indicated they hunted as well as guided a youth. Another 2% indicated they did not hunt but guided a youth, whereas the remaining 46% indicated they did not hunt or guide a youth for turkey hunting in 2021. Those who said they did not hunt turkeys in 2021 were asked about the reason. About 25% indicated they are not a hunter, 20% indicated they do not hunt turkeys during the spring, 19% indicated they typically hunt turkeys but 2021 was an exception, 2% indicated they hunted in another state in 2021, and 9% indicated they stopped hunting to allow the populations to rebuild/restore. The remaining 25% indicated other reasons including health, time, work, and COVID as the most frequently mentioned reasons.

Statewide estimation of hunters, hunting days and harvest

An estimated 67,091 ($\pm 3,408$) adult hunters participated in turkey hunting in Tennessee during the 2021 spring turkey season (Table 1). Based on the number of adult respondents who indicated they guided or mentored youth during the spring season, 24,156 ($\pm 4,976$) mentored youth hunters (hereafter referred to as simply youth hunters) also participated in turkey hunting. Of note, it is possible there are likely additional youth hunters not accounted for because some under 18 years may hunt without adult supervision. Taken together, the total number of adult and youth turkey hunters in Tennessee in the 2021 spring turkey season was estimated to be 91,247 ($\pm 8,385$). When the license-exempt stratum is excluded, estimated proportions that reported hunting turkeys in 2021 spring season were 54% in Annual, 12% in Disability, 40% in Lifetime, 89% in Non-resident, and 5% in Permanent Senior strata.

In terms of hunting effort, average days afield per hunter was 9.46 (± 0.47) for adult hunters and 4.48 (± 0.53) for youth hunters. During the entire 2021 spring turkey season, adult

and youth turkey hunters respectively spent 609,857 ($\pm 30,786$) and 72,445 ($\pm 8,671$) in total days afield. On average, adult and youth hunters spent 4.50 hours and 4.01 hours hunting, respectively, on the days they hunted.

Table 1: Estimated number of hunters, average hunting hours, and total days spent hunting during the 2021 spring turkey hunting season in Tennessee

| | Adult | | Youth | | Adult and Youth Combined |
|---------------------|----------|--------|----------|--------|--------------------------|
| | Estimate | 95% CL | Estimate | 95% CL | Estimates |
| Hunters | 67,091 | 3,408 | 24,156 | 4,976 | 91,247 |
| Total days | 609,857 | 30,786 | 72,445 | 8,671 | 682,302 |
| Average days/hunter | 9.46 | 0.47 | 4.48 | 0.53 | 7.48 |
| Average hours/day | 4.50 | 0.08 | 4.01 | 0.20 | 4.26 |

With regard to harvest, adult hunters statewide harvested an estimated 41,810 ($\pm 3,114$) adult gobblers, 3,753 (± 937) jakes, and 513 (± 274) bearded hens in the 2021 spring turkey season (Table 2). Similarly, harvest by youth hunters was estimated at 6,085 ($\pm 1,723$) adult gobblers, 1,400 (± 745) jakes, and 108 (± 120) bearded hens. Taken together, adult and youth hunters in Tennessee took 47,895 adult gobblers, 5,153 jakes, and 621 bearded hens during the 2021 spring turkey season. Overall, based only on the sample of license holders, 57% of adult hunters and 46% of youth hunters harvested at least one turkey during the 2021 spring turkey season. Among all successful adult hunters, 61% reported harvesting only one bird, 25% reported exactly two birds, and the remaining 15% reported three birds. Average days per bird was 8.26 (± 0.54) for successful adult hunters. Among the successful youth hunters, 74% reported harvesting only one bird, 20% reported exactly two birds, and the remaining 6% reported three. Average days per bird was 4.52 (± 0.92) for successful youth hunters

To calculate a harvest rate, the number of birds harvested was divided by total number of days spent hunting. This metric was computed at the individual respondent level and the mean value was estimated for the statewide sample. For the 2021 spring turkey season, 0.14 birds were harvested per day by adult hunters statewide and 0.20 birds per day by youth hunters.

Table 2: Estimated number of turkeys harvested by adult and youth hunters during the 2021 spring turkey hunting season in Tennessee

| | Adult | | Youth | | Adult and Youth Combined |
|----------------|----------|--------|----------|--------|--------------------------|
| | Estimate | 95% CL | Estimate | 95% CL | Estimates |
| Adult Gobblers | 41,810 | 3,114 | 6,085 | 1,723 | 47,895 |
| Jakes | 3,753 | 937 | 1,400 | 745 | 5,153 |
| Bearded Hens | 513 | 274 | 108 | 120 | 621 |
| Total | 46,076 | | 7,593 | | 53,669 |
| Harvest rate | 0.14 | 0.01 | 0.20 | 0.05 | 0.17 |

Estimates of hunting effort and harvest by land type

Statewide estimates of hunters, days afield, and harvest by land type are presented in table 3. About 72% of adult and 73% of youth hunters exclusively hunt on private land. Only 8% of adults and 6% of youth hunt exclusively on public land. Consequently, in terms of the land types where hunting took place, respondents reported hunting more days on private lands. Comparison of total hunting days by adult hunters between land types showed about two-thirds (66%) of total hunting days were by those hunting on private lands only, 7% for those hunting on public land only, and the remaining 27% of total days for those who hunted on both land types. In terms of harvest, those hunting on only private land accounted for an estimated 74% of total birds harvested, 3% of total harvest was by those hunting on public land only, and 22% of the total harvest was by those who hunted on both land types. The remaining 1% of total birds harvested was represented by harvest on an unreported (i.e., unknown) land type. Jakes accounted for 9% of the total gobblers harvested by adult hunters who hunted private land only. This metric was 5% among adult hunters who hunted public land only and 6% for those who hunted both lands.

Comparison of total hunting days and total bird harvest by youth hunters between land types showed about 71% of total hunting days were estimated for those hunting on private lands only, 7% for those hunting on public land only, and the remaining 22% of total days for those who hunted on both land types. In terms of harvest, 84% of total birds harvested was estimated to have been taken by those hunting on private land only, 2% by those hunting on

public land only, and 13% for those who hunted on both land types. The remaining 1% of total birds harvest was estimated for unreported (i.e., unknown) land types. Jakes accounted for 20% of the total gobblers harvested by youth hunters who hunted private land only. This metric (i.e., percent jakes) was 21% for those youth hunters who hunted public land only and 14% for those who hunted both lands.

Percentage of adult hunters that harvested at least one bird was 70% for those hunting on private lands only, 40% for those hunting on public land only, and 64% for those hunting on both land types. Among successful adult hunters that hunted on private land only, 61% reported harvesting only one bird, 24% reported exactly two birds, and the remaining 14% reported three birds. Similarly, among the successful adult hunters that hunted on public land only, 75% reported bagging only one bird, 16% reported two birds, and the remaining 9% reported three birds. For those who hunted both types of lands and successfully harvested, 50% reported bagging only one bird, 32% reported two birds, and the remaining 18% reported three birds.

Among youth hunters, percentage harvesting at least one bird was 48% for those hunting on private land only, 27% for those hunting on public land only, and 43% for those hunting both types of lands. Among the successful youth hunters that hunted on private land only, 75% reported harvesting only one bird, 20% reported exactly two birds, and the remaining 6% reported three birds. For the successful youth hunters who hunted on public land only, 67% percentage reported bagging only one bird and the remaining 33% reported exactly two. Finally, for those youth hunters who hunted both types of lands and killed at least one bird, 61% reported harvesting only one bird, 25% reported two birds, and the remaining 14% reported three birds.

Table 3: Estimated number of hunters, days afield and turkeys harvested by land type during the 2021 spring turkey hunting season in Tennessee

| | | Hunters | Days Afield | Adult Gobblers | Jakes | Bearded Hens |
|----------------------|----------|---------|-------------|----------------|-------|--------------|
| Adult Hunters | | | | | | |
| Private only | Estimate | 48,165 | 404,115 | 30,572 | 2,985 | 448 |
| | 95% CL | 3,144 | 35,521 | 2,732 | 890 | 263 |
| Public only | Estimate | 5,659 | 43,826 | 1,462 | 78 | - |
| | 95% CL | 849 | 9,100 | 529 | 92 | - |
| Both | Estimate | 10,414 | 161,916 | 9,422 | 645 | 65 |
| | 95% CL | 1,317 | 26,113 | 2,438 | 331 | 82 |
| Youth Hunters | | | | | | |
| Private only | Estimate | 17,697 | 51,797 | 5,049 | 1,236 | 75 |
| | 95% CL | 2,752 | 9,577 | 1,646 | 731 | 106 |
| Public only | Estimate | 1,460 | 4,898 | 115 | 30 | - |
| | 95% CL | 721 | 2,781 | 180 | 57 | - |
| Both | Estimate | 2,774 | 15,751 | 830 | 134 | 30 |
| | 95% CL | 898 | 6,321 | 447 | 133 | 57 |

Notes: Number of hunters do not add up to the state total because some respondents did not disclose the type of land their harvest was from

Compared to those who hunted turkeys on public land only, average days of hunting was higher for those who hunted on private land only (Table 4), but average days of hunting was highest among those who hunted both land types. In terms of hunting hours by land type, the average hours spent per day by adult hunter was slightly higher for those who hunted on public lands, compared to those who hunted private land only, or both. A similar difference was observed with the average days and hours spent by youth hunters.

Table 4: Estimated average number of days afield and hunting hours per day for adult and youth hunters during the 2021 spring turkey hunting season in Tennessee

| | Adult Hunters | | | | Youth Hunters | | | |
|--------------|---------------|--------|----------|--------|---------------|--------|----------|--------|
| | Days | | Hours | | Days | | Hours | |
| | Estimate | 95% CL | Estimate | 95% CL | Estimate | 95% CL | Estimate | 95% CL |
| Private only | 8.39 | 0.49 | 4.26 | 0.09 | 3.88 | 0.49 | 3.95 | 0.21 |
| Public only | 7.74 | 1.05 | 5.68 | 0.29 | 4.95 | 2.03 | 4.77 | 0.74 |
| Both | 15.54 | 1.37 | 4.94 | 0.21 | 8.91 | 2.48 | 4.21 | 0.33 |

Compared to those who hunted on public lands only, the harvest rate was much higher among hunters who hunted on private lands only. For example, adult hunters who hunted on only private lands harvested 0.16 birds per day of hunting, whereas those hunting on only public land bagged 0.05 birds.

Table 5: Estimated harvest rates for adult and youth hunters by land types during the 2021 spring turkey hunting season in Tennessee

| | Adult Hunters | | Youth Hunters | |
|--------------|---------------|--------|---------------|--------|
| | Estimate | 95% CL | Estimate | 95% CL |
| Private only | 0.16 | 0.01 | 0.22 | 0.07 |
| Public only | 0.05 | 0.01 | 0.04 | 0.03 |
| Both | 0.08 | 0.01 | 0.15 | 0.05 |

Regional estimates of hunting effort and harvest

The estimated number of adult hunters, hunting effort, and harvest at the TWRA administrative region level was determined based on survey respondents' indication they participated in at least one day of hunting in a given region during the 2021 spring turkey season (Table 6). The estimated number of adult hunters was largest in Region 2 (22,821) and smallest in Region 4 (13,738). Except in Region 4, average days afield per hunter was higher on private land compared to public land in all regions.

In terms of harvest, the highest number of birds harvested by adult hunters was in Region 2. Compared to Regions 1 and 2, Regions 3 and 4 had comparatively higher percentage of jakes in the harvest (Table 6). Jakes accounted for 5.35% of the total gobblers harvested by adult hunters who hunted in Region 1. This metric was highest (12.70%) among those who hunted in Region 4.

Table 6: Estimated number of adult hunters, average days afield by land types, and birds harvested by TWRA administrative region during the 2021 spring turkey hunting season in Tennessee

| | | Total Adult Hunters | Average Days (Private) | Average Days (Public) | Average Days (Both) | Total Birds Harvested | Percent Jakes |
|----------|----------|---------------------------|------------------------------|-----------------------------|---------------------------|--------------------------|------------------|
| Region 1 | Estimate | 16,287 | 9.52 | 6.86 | 17.85 | 10,684 | 5.35% |
| | 95% CL | 1,923 | 1.08 | 2.04 | 2.21 | 1,397 | |
| Region 2 | Estimate | 22,821 | 7.59 | 6.57 | 15.01 | 15,217 | 7.06% |
| | 95% CL | 2,091 | 0.69 | 1.06 | 2.23 | 1,880 | |
| Region 3 | Estimate | 15,566 | 9.03 | 7.89 | 15.32 | 9,724 | 8.37% |
| | 95% CL | 1,835 | 1.28 | 2.00 | 2.59 | 1,252 | |
| Region 4 | Estimate | 13,738 | 8.46 | 9.70 | 16.70 | 10,070 | 12.70% |
| | 95% CL | 1,686 | 0.84 | 2.25 | 2.86 | 1,178 | |

Note: Number of hunters do not add up to the state total because some respondents report hunting in multiple regions or did not disclose their hunting location.

Estimated number of hunters, average days, and birds harvested were also calculated for youth hunters (Table 7). It should be noted that since the survey did not collect data on location of youth hunting, regional breakdown of these metrics relied on the assumption the youth hunted in the same region where their supervising adult hunted. However, interpretation of these estimates is cautioned since not all adult hunters guide their youth hunters in the same region in which they themselves hunt. Moreover, many adult respondents who provided data for their youth in the survey did not hunt themselves, and therefore no location information was available to place them in a region. Nevertheless, the regional breakdown of youth hunting participation and harvest metrics shown in Table 7 is similar to that of adult hunters (Table 6). Region 2 had the highest number of youth hunters and birds harvested. Region 1, 2 and 3 had higher average days per hunter on private land than on public land whereas the opposite was true in Region 4. Of note, the average days on public lands in Region 4 was based on very small sample size (< 20) and should be interpreted with caution for comparison purpose. Jakes accounted for 38.00% of the total gobblers harvested by youth hunters who hunted in Region 3. This metric was smallest (9.90%) in Region 4.

Table 7: Estimated number of youth hunters, average days afield by land types, and birds harvested by TWRA administrative region during the 2021 spring turkey hunting season in Tennessee

| | | Youth Hunters | Average Days (Private) | Average Days (Public) | Average Days (Both) | Total Birds Harvested | Percent Jakes |
|----------|----------|------------------|------------------------------|-----------------------------|---------------------------|--------------------------|------------------|
| Region 1 | Estimate | 5,684 | 4.27 | 4.07 | 9.98 | 1,532 | 14.84% |
| | 95% CL | 1,737 | 0.98 | 1.47 | 4.12 | 800 | |
| Region 2 | Estimate | 8,036 | 3.31 | 2.69 | 10.14 | 2,458 | 12.30% |
| | 95% CL | 1,925 | 0.53 | 1.20 | 5.47 | 911 | |
| Region 3 | Estimate | 4,203 | 4.38 | 2.36 | 7.46 | 1,637 | 38.00% |
| | 95% CL | 1,143 | 0.79 | 1.02 | 2.78 | 847 | |
| Region 4 | Estimate | 4,540 | 3.67 | 11.12 | 7.81 | 2,166 | 9.90% |
| | 95% CL | 1,668 | 0.86 | 4.94 | 3.35 | 1,380 | |

Note: Number of hunters do not add up to the state total because some respondents report hunting in multiple regions or did not disclose their hunting location.

In terms of hours spent hunting per day afield, adult hunters consistently reported having spent a slightly higher number of hours hunting than their youth counterparts, regardless of region (Table 8). The average number of hours was highest in Region 1 for both the adults and youth hunters.

Table 8: Estimated average number of hunting hours per day by TWRA administrative region for adult and youth hunters during the 2021 spring turkey hunting season in Tennessee

| Region | Adult Hunters | | Youth Hunters | |
|----------|---------------|--------|---------------|--------|
| | Estimate | 95% CL | Estimate | 95% CL |
| Region 1 | 4.61 | 0.20 | 4.27 | 0.53 |
| Region 2 | 4.52 | 0.14 | 4.04 | 0.43 |
| Region 3 | 4.56 | 0.16 | 3.90 | 0.33 |
| Region 4 | 4.50 | 0.18 | 4.16 | 0.37 |

Harvest rate was tabulated for hunters across the different administrative regions (Table 9). Except for Region 2, this metric was consistently higher among youth hunters than adult hunters, and the highest rate was estimated for Region 2 for adult hunters and Region 3 for youth hunters.

Table 9: Estimated harvest rates for adult and youth hunters by TWRA administrative region during the 2021 spring turkey hunting season in Tennessee

| Region | Adult Hunters | | Youth Hunters | |
|----------|---------------|--------|---------------|--------|
| | Estimate | 95% CL | Estimate | 95% CL |
| Region 1 | 0.11 | 0.01 | 0.15 | 0.04 |
| Region 2 | 0.15 | 0.02 | 0.15 | 0.04 |
| Region 3 | 0.12 | 0.02 | 0.27 | 0.20 |
| Region 4 | 0.14 | 0.02 | 0.21 | 0.06 |

Turkeys shot but not killed or recovered by hunters

Respondents were also asked to report the number of turkeys that were shot but not killed or recovered. Based on the data provided, an estimated 7,214 ($\pm 1,662$) turkeys were shot but not killed or recovered by hunters during the 2021 spring turkey hunting season. About 9% of those who answered this question reported to have shot at least one bird they did not recover.

Satisfaction with turkey hunting experience

When asked how they would rate their turkey hunting experience in the 2021 spring turkey season, 59% of respondents from the statewide sample indicated they were somewhat or very satisfied, and another 13% indicated being neither dissatisfied nor satisfied (Figure 2). When compared across land types, the highest percentage (62%) of respondents who indicated being somewhat or very satisfied were those who hunted on private lands only, and the lowest percentage (49%) were those hunting on public lands only. Compared to other lands, the highest percentage of respondents (17%) who indicated neutrality on this satisfaction question hunted only on public land.

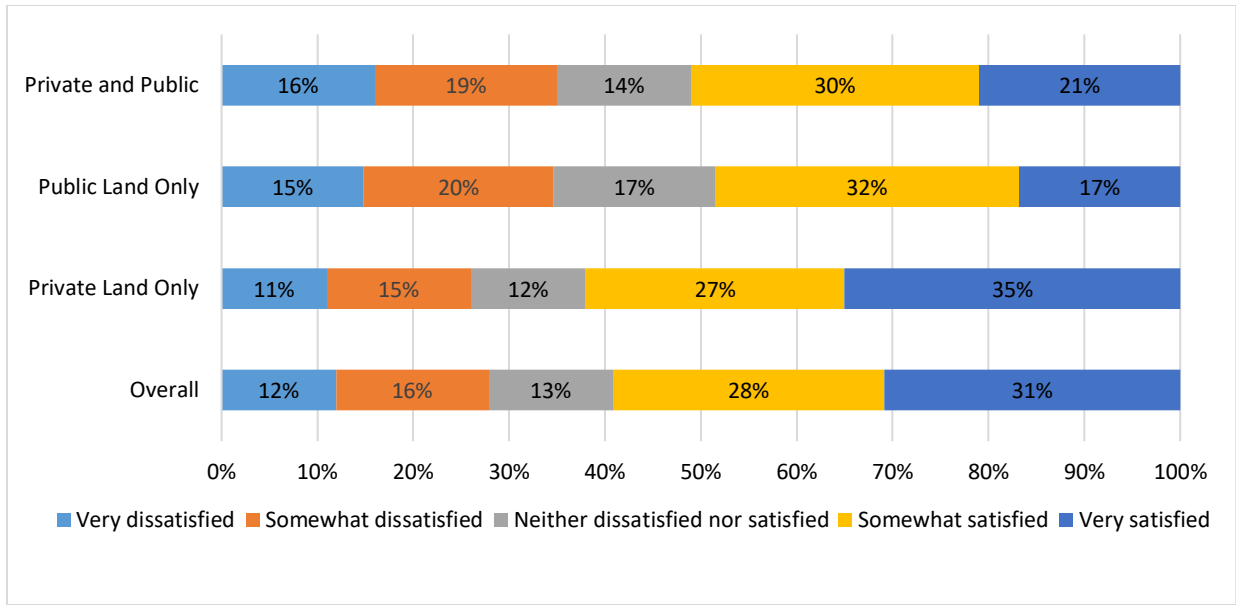


Figure 2: Survey respondents' reported satisfaction with the 2021 spring turkey hunting experience by type of land hunted (From top: n1 = 348, n2 = 309, n3 = 1,828, n4 = 2,517)

A comparison of satisfaction with the 2021 spring turkey hunting experience among the respondents across the different administrative regions showed notable similarity (Figure 3). Compared to Regions 1 and 4, a slightly higher proportion in Regions 2 and 3 indicated being very satisfied.

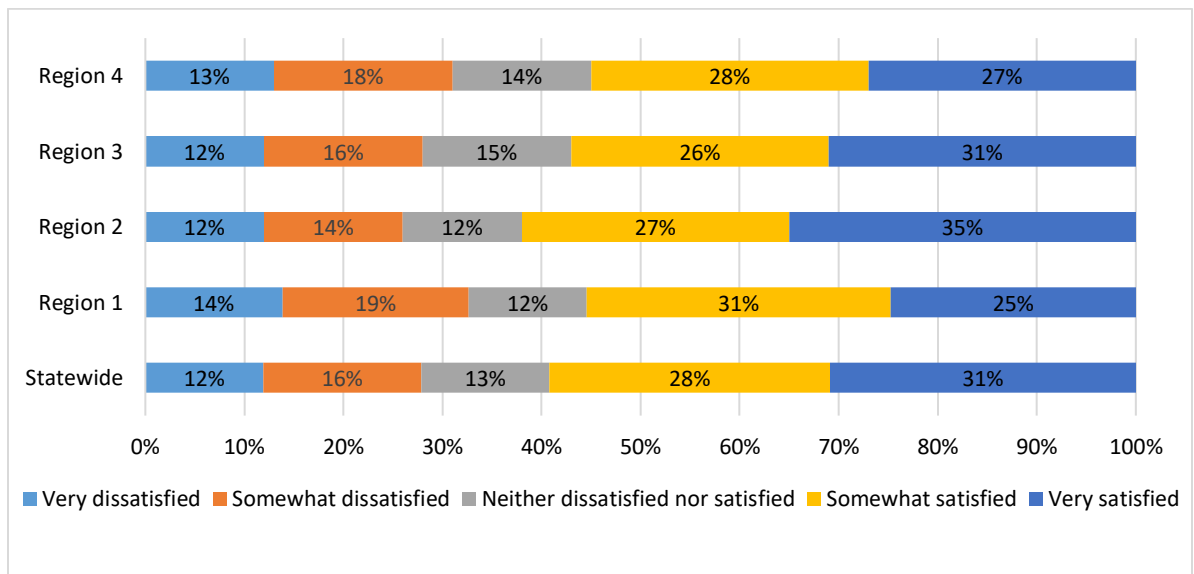


Figure 3: Survey respondents' reported satisfaction with the 2021 spring turkey hunting experience by TWRA region (From top: n1 = 459, n2 = 525, n3 = 994, n4 = 612, n5 = 2,517)

Perceived change in turkey populations

Respondents were asked to indicate (based on their experience over the years) how they perceive the change in turkey populations in areas they hunted. Over half (60%) of the respondents statewide indicated to have perceived a decline in turkey populations, whereas another 16% indicated seeing an increase (Figure 4). A relatively higher proportion of those hunting in Regions 1 and 4 indicated witnessing declining populations of turkey in the areas they hunt.

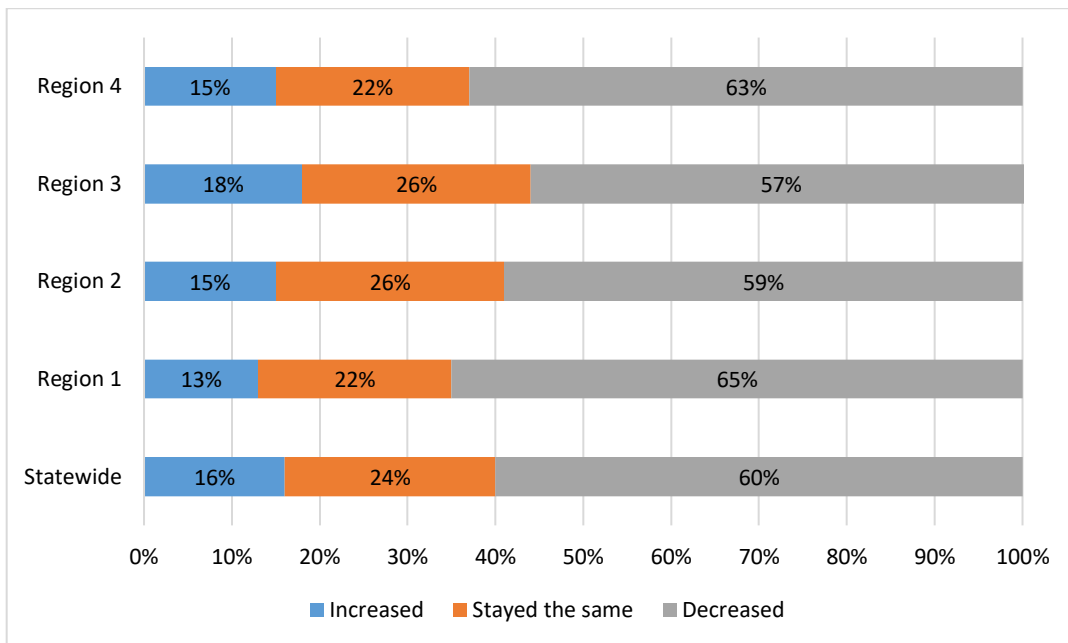


Figure 4: Survey respondents' perception of how turkey populations in the areas they hunt have changed over the years (From top: n1 = 395, n2 = 431, n3 = 832, n4 = 539, n5 = 2,126)

When asked about the perceived reasons behind the decline in the areas they hunt, the two most commonly reported reasons were predation on nests and poults (reported by 70% of respondents) and nesting success and poults survival (reported by 52% of respondents; Figure 5). The next three most frequently mentioned reasons were predation on adults (37%), habitat conditions (24%), and hunting pressure (32%).

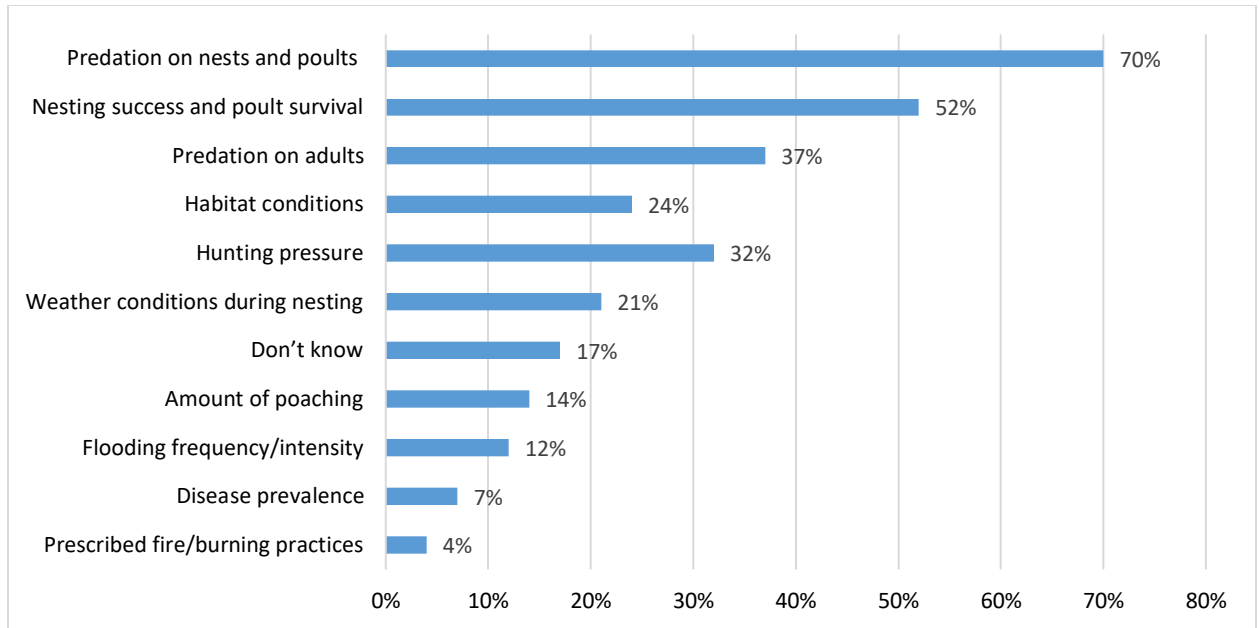


Figure 5: Percentage of survey respondents who perceived a decline in turkey populations indicating the reasons behind perceived declines in turkey populations in the areas they hunt (n = 1,273)

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Appendix A: Survey questionnaire

2021 Tennessee Spring Turkey Harvest Survey



You are one of a few randomly selected sportsmen and sportswomen in Tennessee to be invited to participate in this survey. Your response will help the Tennessee Wildlife Resources Agency (TWRA) and other stakeholders understand hunters' effort and success in turkey hunting, and your opinion and attitude regarding various aspects of turkey hunting will help them make informed decisions. *Even if you did not hunt in the 2021 spring turkey season, please complete the first few questions and return the survey.*

This is a University of Tennessee study with the support of the Tennessee Wildlife Resources Agency

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1. Did you yourself hunt or did you take a youth (under 18 years of age) hunting in Tennessee during the 2021 spring turkey season (which includes the 2-day Young Sportsman hunt)?
 - No, please answer **Q2** and return this survey
 - Yes, I hunted, go to **Q3**
 - I did not personally hunt but I took a youth hunting, go to **Q10**
2. If you did not turkey hunt in Tennessee during any of the 2021 spring season, which best describes your reason for not hunting?
 - I typically hunt turkeys during the spring season but 2021 was an exception
 - I typically do not hunt turkeys during the spring
 - I am not a hunter
 - I hunted in another state in 2021
 - I stopped hunting to allow the population to rebuild/restore
 - Other (please specify): _____

3. In the table below, please report only **your own** (*do not include information for others in your party or those you may have guided*) turkey hunting activities for the 2021 spring turkey season. Report harvest and days hunted in different counties on separate rows, even if you did not harvest any turkeys in that county. For each turkey harvested, indicate the type of turkey (bearded hen, jake, or adult gobbler).

| County Hunted | Number of days hunted on private land | Number of days hunted on public land | Number of turkeys harvested | | |
|----------------------|---------------------------------------|--------------------------------------|-----------------------------|----------|----------------|
| | | | Bearded Hens | Jakes | Adult Gobblers |
| <i>Example: Knox</i> | <i>16</i> | <i>5</i> | <i>0</i> | <i>1</i> | <i>2</i> |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

4. How many turkeys did you shoot but not kill or recover during the 2021 spring turkey season? _____
5. On days you hunted, how many hours did you typically hunt? _____
6. Overall, how would you rate your 2021 spring turkey hunting experience?
- Very dissatisfied Somewhat dissatisfied Neither dissatisfied nor satisfied Somewhat satisfied Very satisfied
7. Based on your experience over the years, how have turkey populations changed in areas you hunt?
- Decreased Stayed the same, go to Q9. Increased Don't know, go to Q9.
8. I believe the population in the area I hunt has decreased/increased because of changes in..... (Mark all that apply)
- | | |
|---|--|
| <input type="checkbox"/> Hunting pressure | <input type="checkbox"/> Habitat conditions |
| <input type="checkbox"/> Amount of poaching | <input type="checkbox"/> Disease prevalence |
| <input type="checkbox"/> Nesting success and poult survival | <input type="checkbox"/> Flooding frequency/intensity |
| <input type="checkbox"/> Predation on adults | <input type="checkbox"/> Weather conditions during nesting |
| <input type="checkbox"/> Predation on nests and poults | <input type="checkbox"/> Don't know |
| <input type="checkbox"/> Prescribed fire/burning practices | <input type="checkbox"/> Others: _____ |
9. Did you take a youth (under 18 years of age) hunting during the 2021 spring turkey hunting season?
- Yes, go to Q10 No, stop here and return the survey
10. Please report only turkey hunting activities for **youth you mentored** during the 2021 spring turkey season. Report days and hours hunted, even if they did not harvest any turkeys.

| Number of youth mentored | Number of days hunted on private land | Number of days hunted on public land | Average number of hours hunted in a day with youth |
|--------------------------|---------------------------------------|--------------------------------------|--|
| | | | |

| | | | |
|--|--|--|--|
| | | | |
|--|--|--|--|

11. How many turkeys were harvested by youth hunters that you mentored in the 2021 season?

Bearded Hens: _____ Jakes: _____ Adult Gobblers: _____

Thank you for taking the time to complete this important survey.