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2019 MICHIGAN FALL TURKEY HUNTER SURVEY

Brian J. Frawley

ABSTRACT

A survey of turkey hunters was conducted following the 2019 fall hunting season to determine turkey harvest and hunter participation. Overall, 24,654 people purchased 26,429 licenses in 2019 (versus 27,269 people purchased 29,330 licenses in 2018). The number of licenses sold in 2019 decreased by 10% from 2018 and decreased by 14% from 2017. Excluding the Pure Michigan Hunt and Mentored Youth Hunt licenses, 15,188 hunters purchased 16,878 licenses in 2019, which was nearly 9% fewer licenses sold than in 2018 and 12% fewer licenses sold than in 2017 (18,088 hunters purchased 19,770 licenses in 2018). Most license buyers (95%) purchased a single hunting license in 2019. During the 2019 fall hunt, an estimated 12,061 hunters harvested about 3,618 turkeys. Hunter numbers decreased significantly by 17% from 2017, and their hunting effort decreased significantly by 18%. Also, the 2019 harvest decreased significantly by 16% from 2017 (4,305 turkeys were harvested in 2017). Hunter success was 26% in 2019 (versus 27% success in 2017). About 58% of the hunters in 2019 rated their hunting experience as excellent, very good, or good (versus 60% satisfaction in 2017). Hunting success and hunter satisfaction in 2019 did not change significantly from 2017.

INTRODUCTION

Fall wild turkey (*Meleagris gallopavo*) hunting seasons were implemented in Michigan to help maintain turkey populations at levels matching biological and social carrying capacities. In 2019, 11 management units totaling about 44,943 square miles were open for fall turkey hunting from September 15 through November 14 (Figure 1). The area open to hunting in 2019 was the same as during 2013-2018.

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People interested in obtaining a fall turkey hunting license could enter a random drawing (lottery) for the licenses conducted by the Department of Natural Resources (DNR) or purchase a license that wasn't distributed in the drawing. Applicants could choose one hunt area for the drawing. Any licenses available after the drawing was completed were made available on a first-come-first-served basis to applicants unsuccessful in the drawing. Beginning one week after licenses were available to unsuccessful applicants, all remaining licenses were made available to nonapplicants. All units except GC (Hunt 403) had left-over licenses after the drawing (Table 1). Hunters could purchase one of these remaining licenses per day until quotas were met.

Licenses for Hunt 410 (Unit HA) and Hunt 501 (Unit YY) were valid on private lands only, while licenses for hunts 401-409 (units G, GB, GC, J, L, M, T, W, and WA) were valid on either public or private lands. Hunters could take one turkey of either sex with the harvest tag issued with each license. Also, turkeys could be harvested with a shotgun, crossbow, or archery equipment.

A mentored youth hunting program started in 2012. Under this program, a mentored youth hunting license was created and could be purchased by youth hunters aged 9 and younger. The youth hunter had to participate with a mentor who was at least 21 years old. The mentored youth hunting license allowed the youth hunter to hunt small game, turkey, deer, trap furbearers, and fish for all species. A turkey kill tag issued under the mentored youth hunting license was valid for one turkey during any hunt period, in any open hunt unit, on private or public land. No application was required to purchase the mentored youth license.

The Pure Michigan Hunt (PMH) was a unique multi-species hunting opportunity offered for the first time in 2010. Individuals could purchase an unlimited number of applications for the PMH. Three individuals were randomly chosen from all applications, and winners received elk, bear, spring turkey, fall turkey, and antlerless deer hunting licenses and could participate in a reserved waterfowl hunt on a managed waterfowl area. The fall turkey hunting license was valid for all areas open for hunting turkey.

The Natural Resources Commission and DNR have the authority and responsibility to protect and manage the wildlife resources of the state of Michigan. Harvest surveys are one of the management tools used to meet their statutory responsibility. Estimating harvest, hunting effort, and hunter satisfaction are among the primary objectives of these surveys.

METHODS

The DNR provided hunters the option to voluntarily report information about their turkey hunting activity via the internet. This option was advertised in the hunting regulations booklet, on the DNR website, and in an email message that was sent to licensees that had provided an email address to the DNR. Hunters could report information anytime during the hunting season. Hunters reported whether they hunted, the number of days spent afield, and how many turkeys they harvested. Successful hunters also were asked to report where their turkeys were taken (public or private land) and the beard

length of harvested birds. Birds with a beard <4 inches long were classified as juveniles (<1 year old), while birds with longer beards were adults (>1 year old) (Kelly 1975). Also, hunters were asked what type of hunting equipment was used to hunt and kill turkeys. Finally, hunters rated their overall hunting experience (excellent, very good, good, fair, or poor).

Following the 2019 fall turkey hunting season, a questionnaire (Appendix A) was sent to 10,439 randomly selected people that had purchased a 2019 turkey hunting license (resident turkey, senior resident turkey, nonresident turkey, Mentored Youth Hunt, and Pure Michigan licenses) and had not already voluntarily reported harvest information via the internet. Hunters receiving the questionnaire were asked to report the same information that was collected from hunters that reported voluntarily on the internet.

Estimates were calculated using a stratified random sampling design that included 15 strata (Cochran 1977). Strata 1-11 consisted of hunters with licenses for a single management unit (N_G=116; N_{GB}=137; N_{GC}=115; N_{HA}=982; N_J=930; N_L=308; N_M=1,038; N_T=125; N_W=136; N_{WA}=48; and N_{YY}=10,571). The twelfth stratum included hunters obtaining only a Mentored Youth Hunt license (N=9,463). The thirteenth stratum included hunters obtaining only a Pure Michigan Hunt license (N=3). The fourteenth stratum consisted of hunters having licenses for multiple management units (N=229). Finally, hunters that had voluntarily reported information about their hunting activity via the internet before the mail survey sample was selected were treated as the fifteenth stratum (N=453).

Because estimates were based on information collected from random samples of hunting license buyers, these estimates were subject to sampling errors (Cochran 1977). Thus, a 95% confidence limit (CL) was calculated for each estimate. In theory, this CL can be added and subtracted from the estimate to calculate the 95% confidence interval. The confidence interval is a measure of the precision associated with the estimate and implies the true value would be within this interval 95 times out of 100. Unfortunately, there are several other possible sources of error in surveys that are probably more serious than theoretical calculations of sampling error. They include the failure of participants to provide answers (nonresponse bias), question-wording, and question order. It is very difficult to measure these biases; thus, estimates were not adjusted for these possible biases.

Statistical tests are used routinely to determine the likelihood that the differences among estimates are larger than expected by chance alone. The overlap of 95% confidence intervals was used to determine whether estimates differed. Non-overlapping 95% confidence intervals were equivalent to stating the difference between the means was larger than would be expected 95 out of 100 times if the study had been repeated (Payton et al. 2003).

Questionnaires were mailed initially during mid-December 2019, and up to two follow-up questionnaires were mailed to nonrespondents. Although 10,439 people were sent the questionnaire, 235 surveys were undeliverable resulting in an adjusted sample size of 10,204. Questionnaires were returned by 5,331 people, yielding a 52% adjusted

response rate. Also, 453 people voluntarily reported information about their hunting activity via the internet.

RESULTS

In 2019, the DNR offered 51,350 fall turkey hunting licenses for sale, excluding Pure Michigan Hunt and Mentored Youth Hunt licenses (Table 1). The 2019 quota matched the quotas used during the previous two years. A total of 3,886 people were eligible for a license via the drawing, and 3,647 people were awarded a license (94% of applicants). The 3,647 successful applicants purchased 2,300 licenses that they had been awarded in the drawing (63% of successful applicants).

All units except GC (Hunt 403) had left-over licenses after the drawing. A total of 584 leftover licenses were purchased by people that had applied for a hunt in the drawing. In addition, 13,994 leftover licenses were purchased by people that had not entered the drawing. Also, 3 people were awarded a Pure Michigan Hunt license, and 9,548 youth obtained a turkey hunting license when they obtained their Mentored Youth Hunt license. Among the hunters buying a quota license in 2019 (excluded Pure Michigan Hunt and Mentored Youth Hunt licenses), 14% purchased a license that was awarded in the drawing and 86% purchased a left-over license (Figure 2).

Overall, 24,654 people purchased 26,429 licenses in 2019 (versus 27,269 people purchased 29,330 licenses in 2018, and 28,557 people purchased 30,306 licenses in 2017). The number of licenses sold in 2019 decreased by 10% from 2018 and decreased by 14% from 2017. Excluding the Pure Michigan Hunt and Mentored Youth Hunt licenses, 15,188 hunters purchased 16,878 licenses in 2019, which was nearly 9% fewer licenses sold than in 2018 and 12% fewer licenses sold than in 2017 (18,088 hunters purchased 19,770 licenses in 2018, and 17,524 hunters purchased 19,186 licenses in 2017).

Excluding people obtaining a Mentored Youth Hunt license, the average age of the 17,191 license buyers was 50 years (Figure 3), and about 5% of the license buyers were younger than 17 years old (788). Hunters with a Mentored Youth Hunt license were excluded because only 14 ± 2% of them hunted (Table 2).

Including all license types, most license buyers (95%) purchased a single hunting license in 2019 (Figure 4). About 4% of hunters purchased 2 licenses and about 1% of hunters purchased 3 or more licenses.

Excluding people obtaining a Mentored Youth Hunt license, the number of people buying a license in 2019 (15,191) decreased by about 27% in ten years from 2009 (20,758 people purchased a license in 2009, Figure 5).

In 2019, about 12,061 hunters spent 74,826 days afield pursuing turkeys ($\bar{x} = 6.2 \pm 0.2$ days/hunter) (Tables 3 and 4, Figure 6). Hunter numbers decreased significantly by 17% from 2017, and their hunting effort decreased significantly by 18%.

About 90% of the hunters that went afield were males (10,904 ± 252) and 7% were females (789 ± 114). Also, the sex of about 3% of the hunters was unknown (368 ± 64).

About 26% of active hunters successfully harvested a turkey in 2019, and they harvested an estimated 3,618 turkeys (Tables 5 and 6). The number of turkeys harvested decreased significantly by 16% from 2017 (4,305 turkeys harvested in 2017). Hunter success was not significantly different between 2019 and 2017 (26% versus 27%, Figure 6). Among the 3,146 hunters that took at least one turkey, 90% (2,835 ± 172) of these hunters took one turkey, 7% (219 ± 47) took 2 turkeys, and about 3% (92 ± 30) took more than 2 turkeys (Figure 7). Hunter success was statistically greater for hunters using private lands than for hunters using public lands in 2019 (26% versus 19%, Table 5).

About 89% (10,792 ± 253) of turkey hunters hunted solely on private land, 7% (850 ± 63) hunted on public land only, and 3% (380 ± 50) hunted on both private and public lands. Additionally, less than 1% of hunters (40 ± 26) hunted on land of unknown ownership. Of the 3,618 turkeys harvested in 2019, 92% of these birds were taken on private land (3,327), while about 8% of the harvest (286) was taken on public land (Table 6). About 61% of the harvested birds had a beard (2,220 ± 170). Most of these bearded birds (86%) were adults (1,906 ± 159); 14% were juvenile birds (314 ± 59).

Of the 12,061 turkey hunters in 2019, nearly 58% rated their hunting experience as either excellent, very good, or good (Table 7). Satisfaction was statistically greater for hunters using private lands than for hunters using public lands (58% versus 50%). Changes in hunter satisfaction between years generally parallel changes in hunter success (Figure 8). Between 2017 and 2019, neither hunter's success (27% in 2017 versus 26% in 2019) nor satisfaction changed significantly (60% in 2017 versus 58% in 2019).

Hunter numbers were greatest in Newaygo, Tuscola, Genesee, Lapeer, and Washtenaw counties; these counties had more than 400 hunters (Table 8). Harvest was greatest in Livingston, Lapeer, Midland, Allegan, and Sanilac counties; these counties had more than 130 turkeys taken.

Most hunters (56 ± 2%; 6,702 ± 242 hunters) used shotguns while hunting turkeys, although 40 ± 2% (4,776 ± 223) used a crossbow, and 18 ± 1% (2,167 ± 152) of the hunters used either a compound, recurve, or long bow. About 64% (2,306 ± 186) of the harvested turkeys were taken with a shotgun, while 26% (947 ± 116) of harvested turkeys were taken with a crossbow. About 9% (327 ± 65) were taken with either a compound, recurve, or long bow. About 29 ± 2% of the hunters using a shotgun took at least one turkey with their shotgun; 19 ± 2% of the hunters using a crossbow harvested a turkey; and 15 ± 3% of hunters using either a compound, recurve, or long bow took a turkey.

ACKNOWLEDGEMENTS

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Payton, M. E., M. H. Greenstone, and N. Schenker. 2003. Overlapping confidence intervals or standard error intervals: what do they mean in terms of statistical significance? Journal of Insect Science 3:34.
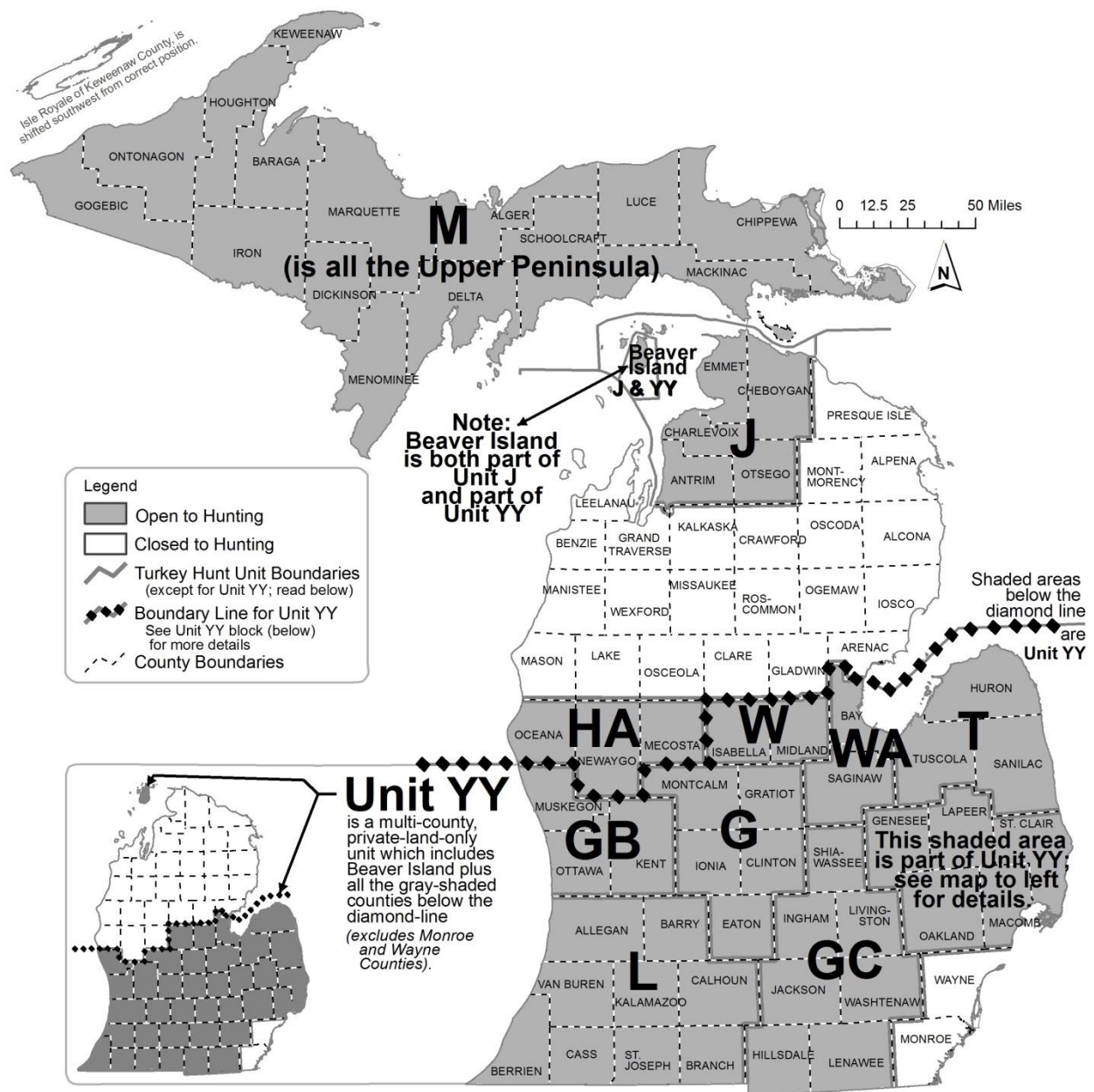
Figure 1. Management units open for fall turkey hunting in Michigan, 2019.
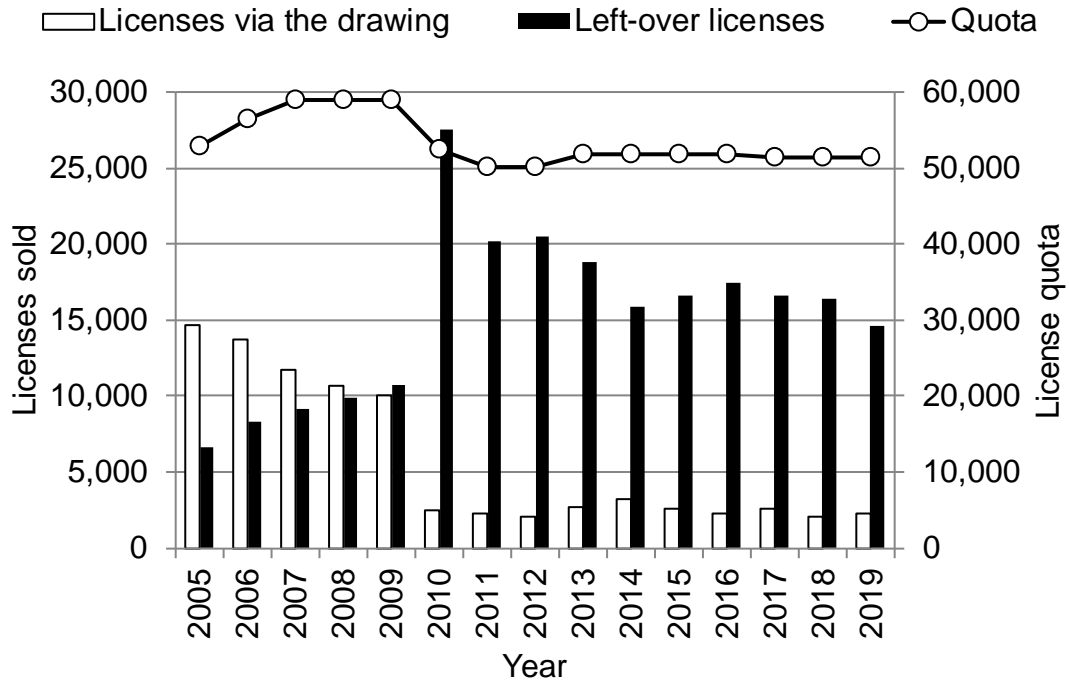
Figure 2. The number of fall turkey hunting licenses available for quota hunts (excluded Mentored Youth licenses and Pure Michigan hunts), the number of quota hunt licenses sold via the drawing, and the number of quota hunt licenses sold as left-over licenses during 2005-2019.
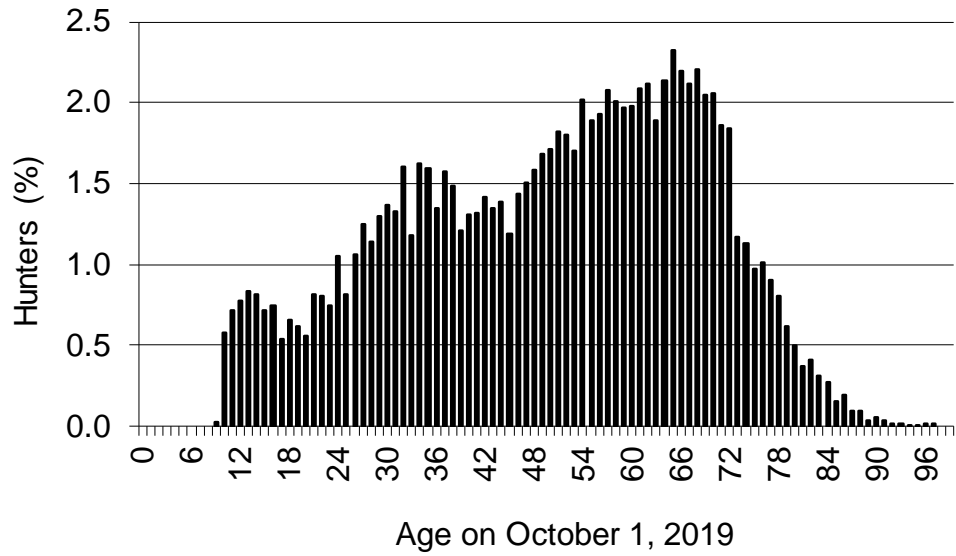
Figure 3. Age of people that purchased a turkey hunting license in Michigan for the 2019 fall hunting season ($\bar{x}$ = 50 years). Licenses were purchased by 15,191 people, excluding Mentored Youth Hunt license buyers.
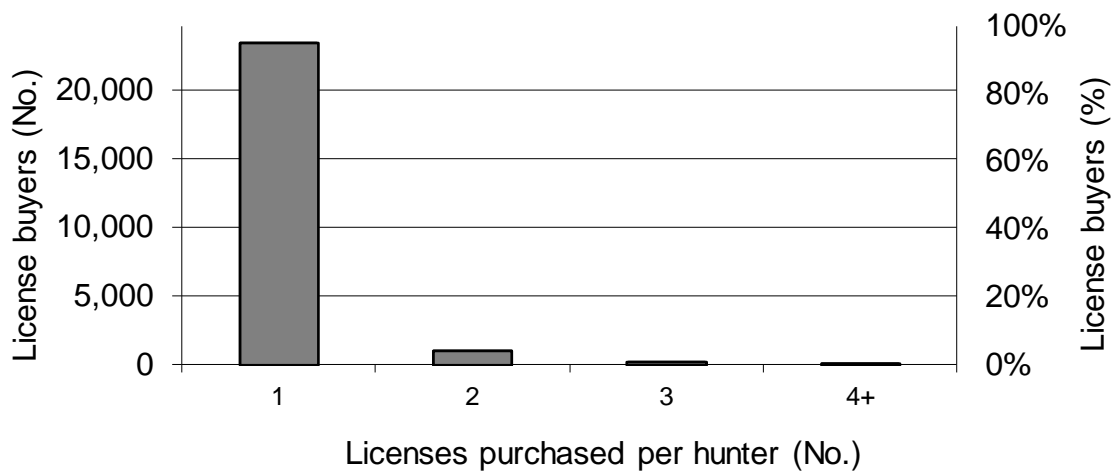
Figure 4. Number of licenses purchased per person for hunting turkey in Michigan during the 2019 fall hunting season (included all hunting license types).
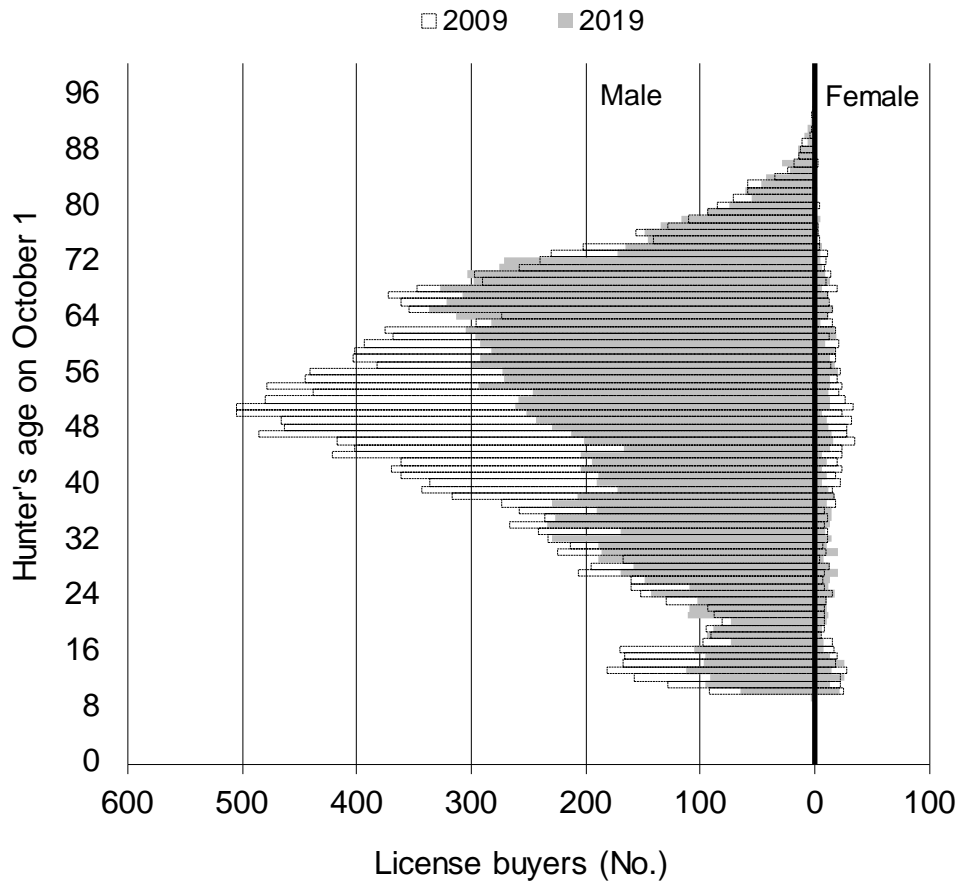
Figure 5. Number of fall turkey hunting license buyers in Michigan by age and sex during 2009 and 2019 hunting seasons, excluding Mentored Youth Hunt licenses. The number of people buying a license was 20,758 in 2009 and 15,191 in 2019.
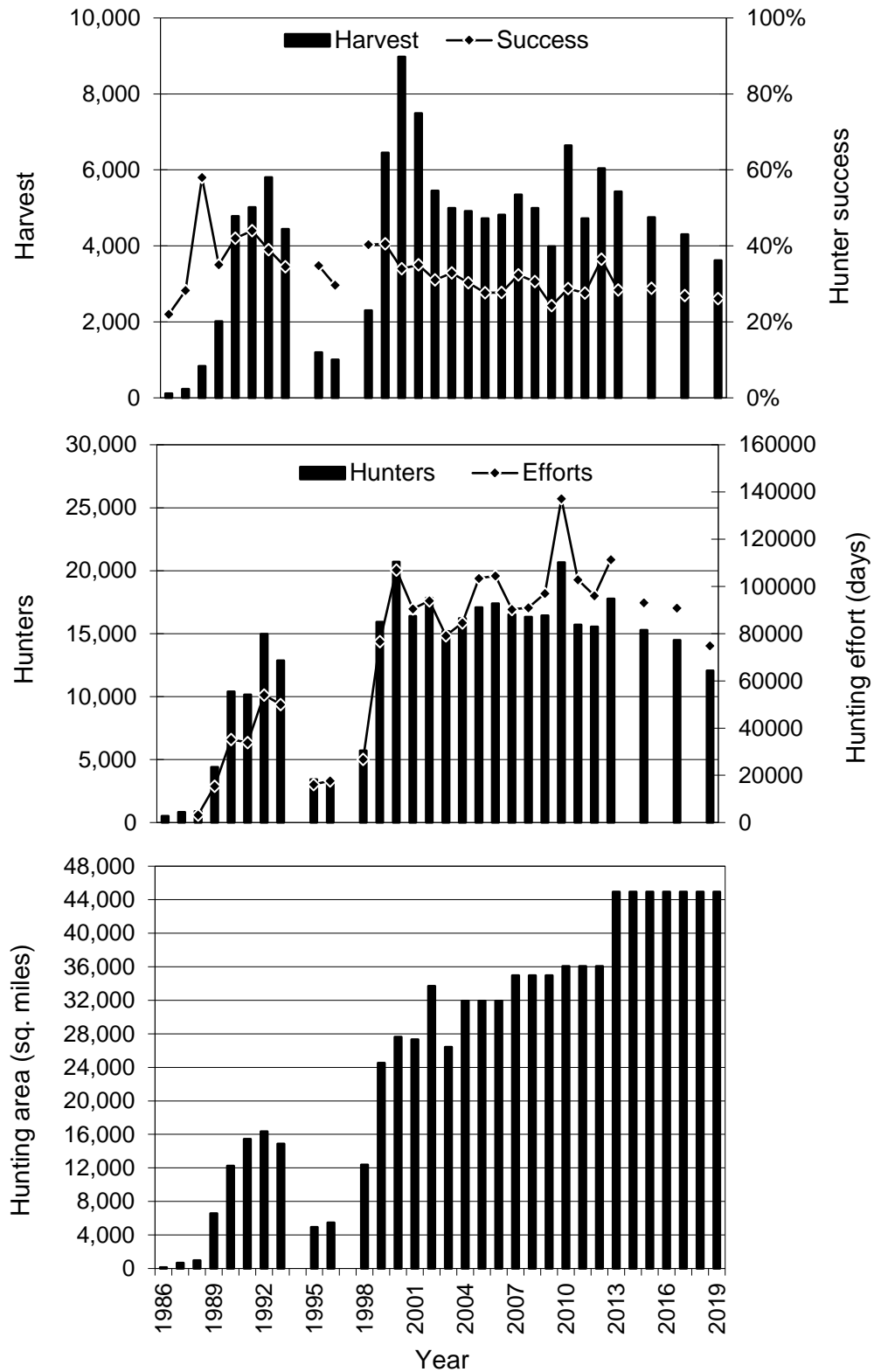
Figure 6. Number of hunters, hunting efforts (days), harvest, hunting success, and hunting area during the fall turkey hunting season, 1986-2019. Turkeys were not hunted during the fall in 1994 and 1997. No surveys were done in 2014, 2016, and 2018.

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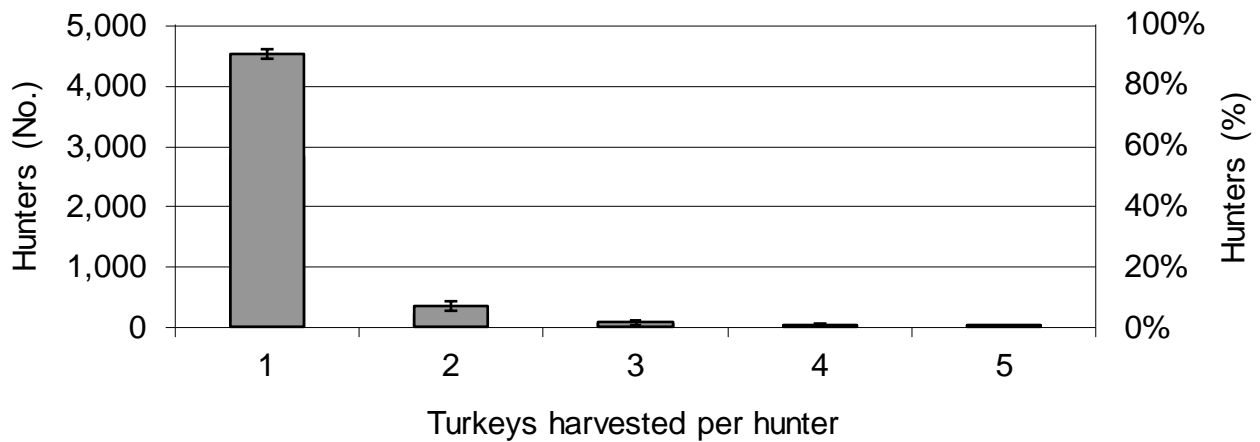
Figure 7. Number of turkeys harvested per successful hunter in Michigan during the 2019 fall hunting season.

$$y = 0.2365x + 0.5137$$
$$R^2 = 0.0454$$
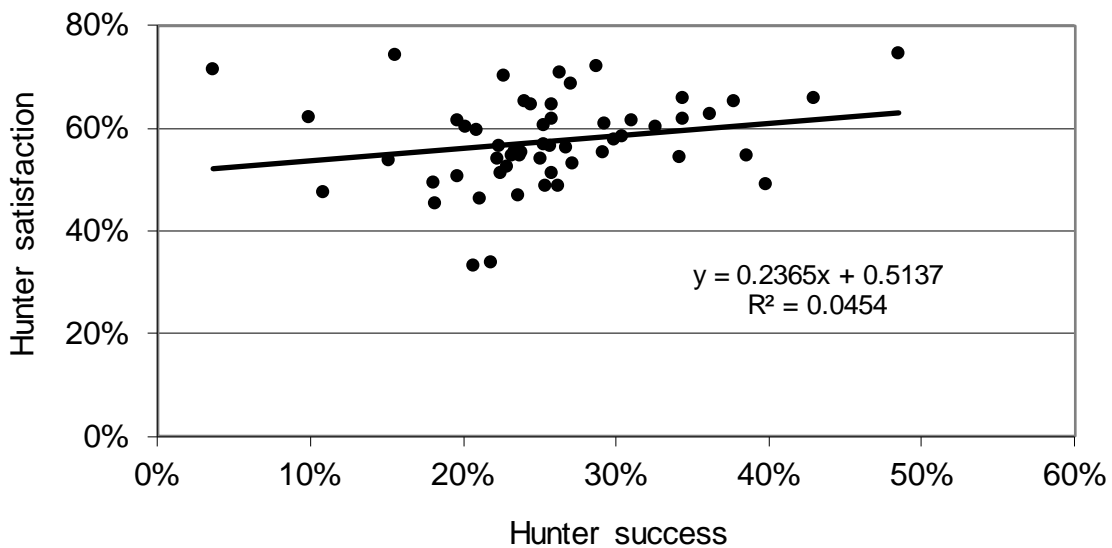
Figure 8. Hunter satisfaction (expressed as the percentage of hunters rating their hunting experience as excellent, very good, or good) associated with hunter success for each of 55 counties in Michigan during the 2019 fall turkey hunting season (only included counties with at least 20 hunters).

Table 1. Number of hunting licenses available and number of people applying for licenses during the 2019 Michigan fall turkey hunting season.

Manage-ment unit	Hunt	Licenses available (quota)[a]	Number of eligible applicants	Number of applicants successful in drawing	Number of licenses remaining after drawing	Number of licenses purchased by successful applicants	Number of leftover licenses purchased by applicants	Number of leftover licenses purchased by people not in the drawing	Licenses sold
G	401	200	176	176	24	120	9	15	144
GB	402	250	160	160	90	99	17	73	189
GC	403	200	439	200	0	143	0	0	143
HA[b]	410	1,700	469	469	1,231	280	50	845	1,175
J	404	1,500	432	432	1,068	239	54	828	1,121
L	405	500	383	383	117	272	34	83	389
M	406	1,500	527	527	972	381	97	875	1,353
T	407	200	163	163	37	120	10	27	157
W	408	200	61	61	139	37	18	121	176
WA	409	100	52	52	48	31	11	36	78
YY[b]	501	45,000	1,024	1,024	43,976	578	284	11,091	11,953
Pure MI[c]	NA[c]	NA	0	0	NA	0	0	0	3
MYH[d]	Any	NA	0	0	NA	0	0	0	9,548
Statewide	All	51,350	3,886	3,647	47,402	2,300	584	13,994	26,429

[a]Quotas were assigned by hunts within each management unit.
[b]Licenses were valid on private lands only.
[c]Pure Michigan Hunt. These hunters could hunt in any management unit.
[d]Mentored Youth Hunts. These hunters could hunt in any management unit.

Table 2. Number of hunters, hunting effort, harvest, hunter success, and hunter satisfaction during the 2019 Michigan fall turkey hunting season, summarized for hunters that obtained a Mentored Youth Hunt license.

| Hunters | | Hunting efforts (days) | | Harvest | | Hunter success | | Hunter satisfaction[a] | |
Total	95% CL	Total	95% CL	Total	95% CL	%	95% CL	%	95% CL
1,317	171	5,228	1,038	200	71	15	5	61	7

[a]Proportion of hunters that rated their hunting experience as excellent, very good, or good.

Table 3. Number of hunters during the 2019 Michigan fall turkey hunting season.

| Area and hunting license | Land type | | | | | | All land types | |
| | Private | | Public | | Unknown | | | |
	Total	95% CL	Total	95% CL	Total	95% CL	Total[a]	95% CL
G								
401	38	7	62	7	1	2	93	6
501[b]	693	97	0	0	0	0	693	97
MYH[c]	69	42	8	14	0	0	77	44
Multiple[d]	46	7	14	4	0	0	56	7
Subtotal	846	107	84	16	1	2	918	107
GB								
402	52	10	36	9	0	0	80	10
501[b]	582	90	0	0	0	0	582	90
MYH[c]	108	52	8	14	8	14	123	56
Multiple[d]	47	7	19	5	0	0	61	8
Subtotal	789	105	63	17	8	14	847	107
GC								
403	16	7	66	10	0	0	80	9
501[b]	1,627	142	0	0	0	0	1,627	142
MYH[c]	200	71	15	20	0	0	208	72
Multiple[d]	88	6	18	4	0	0	103	6
Subtotal	1,932	159	99	22	0	0	2,018	160
HA								
410[b]	695	35	0	0	0	0	695	35
MYH[c]	85	46	0	0	0	0	85	46
Multiple[d]	69	7	0	0	0	0	69	7
Subtotal	849	58	0	0	0	0	849	58
J								
404	435	41	245	36	3	4	609	39
501[b]	5	8	0	0	0	0	5	8
MYH[c]	46	34	8	14	0	0	46	34
Multiple[d]	23	5	15	3	0	0	35	5
Subtotal	509	54	267	39	3	4	694	53
L								
405	106	14	162	14	5	4	235	12
501[b]	1,478	137	0	0	0	0	1,478	137
MYH	185	68	15	20	0	0	200	71
Multiple[c]	102	7	19	5	2	2	115	8
Subtotal	1,870	153	196	25	7	4	2,028	155

[a]Number of hunters may not add up to total because hunters could hunt on both private and public lands.
[b]Licenses were valid on private lands only.
[c]Mentored Youth Hunts.
[d]Hunters that purchased multiple hunting licenses for multiple hunting areas.
[e]Included Genesee, Lapeer, Macomb, Oakland, and St. Clair counties within Management Unit YY.
[f]Hunting activity occurred at unknown location within Management Unit YY.

Table 3 (continued). Number of hunters during the 2019 Michigan fall turkey hunting season.

Area and hunting license	Land type						All land types	
	Private		Public		Unknown			
	Total	95% CL	Total	95% CL	Total	95% CL	Total[a]	95% CL
M								
406	550	36	322	34	2	3	737	33
MYH[c]	92	49	38	31	0	0	115	54
Multiple[d]	38	6	23	4	0	0	56	6
Subtotal	681	61	383	46	2	3	908	64
T								
407	39	8	65	8	0	0	93	7
501[b]	804	104	0	0	0	0	804	104
MYH[c]	123	56	0	0	0	0	123	56
Multiple[d]	41	6	15	4	2	2	53	7
Subtotal	1,007	119	80	9	2	2	1,072	119
W								
408	65	9	24	7	3	3	87	9
501[b]	303	66	0	0	0	0	303	66
MYH[c]	38	31	8	14	8	14	54	37
Multiple[d]	17	2	0	0	0	0	17	2
Subtotal	423	73	32	16	11	14	461	76
WA								
409	15	5	18	5	0	0	31	5
501[b]	303	66	0	0	0	0	303	66
MYH[c]	23	24	0	0	0	0	23	24
Multiple[d]	18	5	7	3	0	0	21	5
Subtotal	359	70	25	6	0	0	379	70
Eastern YY[e]								
501[b]	1,324	130	0	0	0	0	1,324	130
MYH[c]	131	58	0	0	0	0	131	58
Multiple[d]	58	5	0	0	0	0	58	5
Subtotal	1,513	143	0	0	0	0	1,513	143
Unknown YY[f]								
501[b]	477	82	0	0	0	0	477	82
MYH[c]	131	58	8	14	8	14	146	61
Multiple[d]	15	5	3	3	0	0	15	5
Subtotal	622	100	11	14	8	14	638	102
Statewide								
Total	11,171	255	1,233	76	41	26	12,061	257

[a]Number of hunters may not add up to total because hunters could hunt on both private and public lands.
[b]Licenses were valid on private lands only.
[c]Mentored Youth Hunts.
[d]Hunters that purchased multiple hunting licenses for multiple hunting areas.
[e]Included Genesee, Lapeer, Macomb, Oakland, and St. Clair counties within Management Unit YY.
[f]Hunting activity occurred at unknown location within Management Unit YY.

Table 4. Days of hunting effort during the 2019 Michigan fall turkey hunting season.

Area and hunting license	Land type							
	Private		Public		Unknown		All land types	
	Total	95% CL	Total	95% CL	Total	95% CL	Total[a]	95% CL
G								
401	319	87	341	63	22	24	681	100
501[b]	4,352	859	0	0	0	0	4,352	859
MYH[c]	246	185	38	70	0	0	285	198
Multiple[d]	362	38	64	27	0	0	427	56
Subtotal	5,279	884	444	98	22	24	5,745	889
GB								
402	279	83	238	92	0	0	517	117
501[b]	3,630	740	0	0	0	0	3,630	740
MYH[c]	593	340	8	14	23	42	624	343
Multiple[d]	236	48	81	22	0	0	317	53
Subtotal	4,737	820	327	96	23	42	5,087	825
GC								
403	133	83	455	134	0	0	588	147
501[b]	10,749	1,317	0	0	0	0	10,749	1,317
MYH[c]	539	262	38	58	0	0	577	274
Multiple[d]	565	36	92	27	0	0	657	47
Subtotal	11,986	1,346	585	148	0	0	12,572	1,354
HA								
410[b]	4,494	442	0	0	0	0	4,494	442
MYH[c]	331	246	0	0	0	0	331	246
Multiple[d]	339	39	0	0	0	0	339	39
Subtotal	5,164	507	0	0	0	0	5,164	507
J								
404	2,082	289	1,018	203	6	9	3,106	340
501[b]	43	76	0	0	0	0	43	76
MYH[c]	115	88	8	14	0	0	123	93
Multiple[d]	108	19	44	11	0	0	152	22
Subtotal	2,349	312	1,070	204	6	9	3,424	361
L								
405	723	134	1,249	191	54	46	2,027	221
501[b]	11,096	1,394	0	0	0	0	11,096	1,394
MYH	716	350	23	31	0	0	739	351
Multiple[c]	637	62	87	28	46	53	770	97
Subtotal	13,172	1,445	1,359	196	101	71	14,631	1,458

[a]Column and row totals for hunting effort may not equal statewide totals because of rounding errors.
[b]Licenses were valid on private lands only.
[c]Mentored Youth Hunts.
[d]Hunters that purchased multiple hunting licenses for multiple hunting areas.
[e]Included Genesee, Lapeer, Macomb, Oakland, and St. Clair counties within Management Unit YY.
[f]Hunting activity occurred at unknown location within Management Unit YY.

Table 4 (continued). Days of hunting effort during the 2019 Michigan fall turkey hunting season.

Area and hunting license	Land type						All land types	
	Private		Public		Unknown			
	Total	95% CL	Total	95% CL	Total	95% CL	Total[a]	95% CL
M								
406	2,834	296	1,964	298	12	17	4,810	428
MYH[c]	254	159	69	67	0	0	323	187
Multiple[d]	199	28	138	18	0	0	336	33
Subtotal	3,287	337	2,171	306	12	17	5,470	468
T								
407	157	38	378	84	0	0	535	92
501[b]	4,419	781	0	0	0	0	4,419	781
MYH[c]	423	222	0	0	0	0	423	222
Multiple[d]	201	40	37	10	3	4	241	42
Subtotal	5,201	814	415	84	3	4	5,619	818
W								
408	390	103	134	58	15	12	539	113
501[b]	1,704	462	0	0	0	0	1,704	462
MYH[c]	323	342	15	28	177	324	516	472
Multiple[d]	72	4	0	0	0	0	72	4
Subtotal	2,490	584	150	64	192	324	2,831	670
WA								
409	66	28	134	56	0	0	200	55
501[b]	1,901	615	0	0	0	0	1,901	615
MYH[c]	100	108	0	0	0	0	100	108
Multiple[d]	102	32	37	19	0	0	139	43
Subtotal	2,170	626	171	59	0	0	2,341	628
Eastern YY[e]								
501[b]	7,644	1,071	0	0	0	0	7,644	1,071
MYH[c]	408	247	0	0	0	0	408	247
Multiple[d]	325	40	0	0	0	0	325	40
Subtotal	8,377	1,100	0	0	0	0	8,377	1,100
Unknown YY[f]								
501[b]	2,681	663	0	0	0	0	2,681	663
MYH[c]	708	542	46	84	23	42	778	550
Multiple[d]	93	41	14	13	0	0	107	45
Subtotal	3,483	858	60	85	23	42	3,566	863
Statewide								
Total[a]	67,694	2,566	6,751	485	381	338	74,826	2,636

[a]Column and row totals for hunting effort may not equal statewide totals because of rounding errors.
[b]Licenses were valid on private lands only.
[c]Mentored Youth Hunts.
[d]Hunters that purchased multiple hunting licenses for multiple hunting areas.
[e]Included Genesee, Lapeer, Macomb, Oakland, and St. Clair counties within Management Unit YY.
[f]Hunting activity occurred at unknown location within Management Unit YY.

Table 5. Hunting success (proportion of hunters taking at least one turkey) during the 2019 Michigan fall turkey hunting season.

| Area and hunting license | Land type | | | | | | All land types | |
| | Private | | Public | | Unknown | | | |
	%	95% CL	%	95% CL	%	95% CL	%[a]	95% CL
G								
401	12	7	5	4	0	0	8	4
501[a]	23	6	0	0	0	0	23	6
MYH[b]	11	19	0	0	0	0	10	17
Multiple[c]	37	8	22	15	0	0	36	7
Subtotal	22	5	7	4	0	0	21	5
GB								
402	17	9	5	6	0	0	13	6
501[a]	29	7	0	0	0	0	29	7
MYH[b]	7	13	0	0	0	0	6	11
Multiple[c]	39	7	13	9	0	0	32	6
Subtotal	26	6	7	5	0	0	24	5
GC								
403	11	14	19	9	0	0	18	8
501[a]	23	4	0	0	0	0	23	4
MYH[b]	19	14	0	0	0	0	19	14
Multiple[c]	45	3	22	4	0	0	42	3
Subtotal	23	4	17	7	0	0	23	4
HA								
410[b]	25	4	0	0	0	0	25	4
MYH[b]	0	0	0	0	0	0	0	0
Multiple[c]	23	5	0	0	0	0	23	5
Subtotal	23	4	0	0	0	0	23	4
J								
404	25	6	19	7	0	0	26	5
501[a]	0	0	0	0	0	0	0	0
MYH[b]	17	28	0	0	0	0	17	28
Multiple[c]	36	9	7	1	0	0	26	6
Subtotal	25	5	17	6	0	0	25	5
L								
405	19	6	7	3	33	34	14	4
501[a]	26	4	0	0	0	0	26	4
MYH[b]	21	15	50	65	0	0	23	15
Multiple[c]	37	4	37	14	100	0	39	4
Subtotal	26	4	14	7	49	31	25	4

[a]Licenses were valid on private lands only.
[b]Mentored Youth Hunts.
[c]Hunters that purchased multiple hunting licenses for multiple hunting areas.
[d]Included Genesee, Lapeer, Macomb, Oakland, and St. Clair counties within Management Unit YY.
[e]Hunting activity occurred at unknown location within Management Unit YY.

Table 5 (continued). Hunting success (proportion of hunters taking at least one turkey) during the 2019 Michigan fall turkey hunting season.

Area and hunting license	Land type							
	Private		Public		Unknown		All land types	
	%	95% CL	%	95% CL	%	95% CL	%[a]	95% CL
M								
406	39	5	28	6	0	0	41	4
MYH[b]	8	15	0	0	0	0	7	12
Multiple[c]	42	7	22	4	0	0	38	5
Subtotal	35	5	25	5	0	0	36	4
T								
407	12	8	19	7	0	0	17	6
501[a]	25	6	0	0	0	0	25	6
MYH[b]	25	20	0	0	0	0	25	20
Multiple[c]	35	7	43	13	0	0	40	6
Subtotal	25	5	24	6	0	0	25	5
W								
408	28	9	27	14	50	43	30	8
501[a]	33	10	0	0	0	0	33	10
MYH[b]	20	33	100	0	0	0	29	31
Multiple[c]	60	7	0	0	0	0	60	7
Subtotal	32	8	44	27	15	25	33	8
WA								
409	22	17	55	19	0	0	42	14
501[a]	24	9	0	0	0	0	24	9
MYH[b]	33	50	0	0	0	0	33	50
Multiple[c]	63	13	0	0	0	0	52	12
Subtotal	26	9	40	15	0	0	28	8
Eastern YY[d]								
501[a]	29	5	0	0	0	0	29	5
MYH[c]	12	14	0	0	0	0	12	14
Multiple[c]	40	4	0	0	0	0	40	4
Subtotal	28	4	0	0	0	0	28	4
Unknown YY[e]								
501[a]	28	8	0	0	0	0	28	8
MYH[b]	12	14	0	0	0	0	11	13
Multiple[c]	38	17	0	0	0	0	38	17
Subtotal	25	7	0	0	0	0	24	7
Statewide								
Total	26	1	19	3	12	10	26	1

[a]Licenses were valid on private lands only.
[b]Mentored Youth Hunts.
[c]Hunters that purchased multiple hunting licenses for multiple hunting areas.
[d]Included Genesee, Lapeer, Macomb, Oakland, and St. Clair counties within Management Unit YY.
[e]Hunting activity occurred at unknown location within Management Unit YY.

Table 6. Number of turkeys harvested during the 2019 Michigan fall turkey hunting season.

Area and hunting license	Land type						All land types	
	Private		Public		Unknown			
	Total	95% CL	Total	95% CL	Total	95% CL	Total[a]	95% CL
G								
401	4	3	3	2	0	0	7	4
501[b]	183	61	0	0	0	0	183	61
MYH[c]	8	14	0	0	0	0	8	14
Multiple[d]	18	5	5	4	0	0	22	6
Subtotal	213	63	8	5	0	0	220	63
GB								
402	9	5	2	2	0	0	10	5
501[b]	217	73	0	0	0	0	217	73
MYH[c]	8	14	0	0	0	0	8	14
Multiple[d]	28	13	3	2	0	0	31	13
Subtotal	261	76	4	3	0	0	266	76
GC								
403	2	2	13	6	0	0	15	6
501[b]	404	84	0	0	0	0	404	84
MYH[c]	38	31	0	0	0	0	38	31
Multiple[d]	46	5	4	0	0	0	50	5
Subtotal	491	90	17	6	0	0	508	90
HA								
410[b]	198	36	0	0	0	0	198	36
MYH[c]	0	0	0	0	0	0	0	0
Multiple[d]	23	9	0	0	0	0	23	9
Subtotal	221	38	0	0	0	0	221	38
J								
404	122	30	46	18	0	0	168	34
501[b]	0	0	0	0	0	0	0	0
MYH[c]	8	14	0	0	0	0	8	14
Multiple[d]	11	6	3	0	0	0	14	6
Subtotal	141	34	49	18	0	0	190	37
L								
405	20	7	14	7	2	2	36	10
501[b]	428	87	0	0	0	0	428	87
MYH	38	31	8	14	0	0	46	34
Multiple[c]	50	9	7	4	2	2	58	10
Subtotal	537	93	28	16	3	3	569	95

[a]Column and row totals for hunting effort may not equal statewide totals because of rounding errors.
[b]Licenses were valid on private lands only.
[c]Mentored Youth Hunts.
[d]Hunters that purchased multiple hunting licenses for multiple hunting areas.
[e]Included Genesee, Lapeer, Macomb, Oakland, and St. Clair counties within Management Unit YY.
[f]Hunting activity occurred at unknown location within Management Unit YY.

Table 6 (continued). Number of turkeys harvested during the 2019 Michigan fall turkey hunting season.

Area and hunting license	Land type						All land types	
	Private		Public		Unknown			
	Total	95% CL	Total	95% CL	Total	95% CL	Total[a]	95% CL
M								
406	247	38	121	33	0	0	369	48
MYH[c]	8	14	0	0	0	0	8	14
Multiple[d]	28	6	7	0	0	0	35	6
Subtotal	283	41	128	33	0	0	411	50
T								
407	5	3	14	6	0	0	19	7
501[b]	241	78	0	0	0	0	241	78
MYH[c]	31	28	0	0	0	0	31	28
Multiple[d]	16	4	8	2	0	0	24	5
Subtotal	292	83	21	6	0	0	314	84
W								
408	19	7	8	5	2	2	29	8
501[b]	120	48	0	0	0	0	120	48
MYH[c]	8	14	8	14	0	0	15	20
Multiple[d]	12	0	0	0	0	0	12	0
Subtotal	159	51	16	15	2	2	177	53
WA								
409	3	3	15	7	0	0	18	7
501[b]	72	32	0	0	0	0	72	32
MYH[c]	8	14	0	0	0	0	8	14
Multiple[d]	11	4	0	0	0	0	11	4
Subtotal	94	36	15	7	0	0	109	36
Eastern YY[e]								
501[b]	424	88	0	0	0	0	424	88
MYH[c]	15	20	0	0	0	0	15	20
Multiple[d]	25	3	0	0	0	0	25	3
Subtotal	464	91	0	0	0	0	464	91
Unknown YY[f]								
501[b]	149	51	0	0	0	0	149	51
MYH[c]	15	20	0	0	0	0	15	20
Multiple[d]	6	3	0	0	0	0	6	3
Subtotal	170	55	0	0	0	0	170	55
Statewide								
Total[a]	3,327	219	286	45	5	3	3,618	223

[a]Column and row totals for hunting effort may not equal statewide totals because of rounding errors.
[b]Licenses were valid on private lands only.
[c]Mentored Youth Hunts.
[d]Hunters that purchased multiple hunting licenses for multiple hunting areas.
[e]Included Genesee, Lapeer, Macomb, Oakland, and St. Clair counties within Management Unit YY.
[f]Hunting activity occurred at unknown location within Management Unit YY.

Table 7. Proportion of hunters that rated their hunting experience as excellent, very good, or good during the 2019 Michigan fall turkey hunting season.

Area and hunting license	Land type							
	Private		Public		Unknown		All land types	
		95 CL		95 CL		95 CL	[a]	95 CL
G								
401	50	11	50	9	100	0	51	7
501[a]	63	7	0	0	0	0	63	7
MYH[b]	67	29	100	0	0	0	70	27
Multiple[c]	30	9	54	14	0	0	36	8
Subtotal	61	6	55	10	100	0	60	6
GB								
402	63	11	38	14	0	0	54	9
501[a]	60	8	0	0	0	0	60	8
MYH[b]	64	23	0	0	0	0	56	23
Multiple[c]	33	8	24	13	0	0	28	7
Subtotal	59	7	29	11	0	0	57	6
GC								
403	44	22	33	10	0	0	36	10
501[a]	61	5	0	0	0	0	61	5
MYH[b]	42	18	0	0	0	0	41	17
Multiple[c]	14	5	17	12	0	0	13	4
Subtotal	57	4	25	9	0	0	55	4
HA								
410[b]	57	5	0	0	0	0	56	5
MYH[b]	36	27	0	0	0	0	36	27
Multiple[c]	18	6	0	0	0	0	18	6
Subtotal	51	5	0	0	0	0	51	5
J								
404	50	6	45	8	0	0	50	5
501[a]	0	0	0	0	0	0	0	0
MYH[b]	33	35	100	0	0	0	33	35
Multiple[c]	27	12	31	14	0	0	26	9
Subtotal	47	6	46	8	0	0	48	5
L								
405	73	7	51	6	100	0	58	5
501[a]	58	5	0	0	0	0	58	5
MYH[b]	67	18	100	0	0	0	69	17
Multiple[c]	23	5	56	14	0	0	24	5
Subtotal	58	4	55	7	77	24	57	4

[a]Licenses were valid on private lands only.
[b]Mentored Youth Hunts.
[c]Hunters that purchased multiple hunting licenses for multiple hunting areas.
[d]Included Genesee, Lapeer, Macomb, Oakland, and St. Clair counties within Management Unit YY.
[e]Hunting activity occurred at unknown location within Management Unit YY.

Table 7 (continued). Proportion of hunters that rated their hunting experience as excellent, very good, or good during the 2019 Michigan fall turkey hunting season.

Area and hunting license	Land type							
	Private		Public		Unknown		All land types	
	%	95% CL	%	95% CL	%	95% CL	%[a]	95% CL
M								
406	67	5	59	6	0	0	63	4
MYH[b]	83	20	60	40	0	0	73	21
Multiple[c]	24	9	7	7	0	0	17	7
Subtotal	67	5	56	7	0	0	63	4
T								
407	60	11	50	9	0	0	52	8
501[a]	65	6	0	0	0	0	65	6
MYH[b]	69	21	0	0	0	0	69	21
Multiple[c]	19	8	50	14	100	0	26	8
Subtotal	63	6	50	8	100	0	62	5
W								
408	50	10	67	15	100	0	57	8
501[a]	62	11	0	0	0	0	62	11
MYH[b]	100	0	100	0	100	0	100	0
Multiple[c]	0	0	0	0	0	0	0	0
Subtotal	61	8	75	16	100	0	63	8
WA								
409	67	20	64	18	0	0	63	14
501[a]	54	11	0	0	0	0	54	11
MYH[b]	100	0	0	0	0	0	100	0
Multiple[c]	26	14	46	24	0	0	29	13
Subtotal	56	10	59	15	0	0	56	9
Eastern YY[d]								
501[a]	60	5	0	0	0	0	60	5
MYH[c]	59	22	0	0	0	0	59	22
Multiple[c]	10	5	0	0	0	0	10	5
Subtotal	58	5	0	0	0	0	58	5
Unknown YY[e]								
501[a]	57	9	0	0	0	0	57	9
MYH[b]	71	20	100	0	0	0	68	20
Multiple[c]	52	18	0	0	0	0	52	18
Subtotal	59	8	71	41	0	0	59	8
Statewide								
Total	58	2	50	3	46	30	58	2

[a]Licenses were valid on private lands only.
[b]Mentored Youth Hunts.
[c]Hunters that purchased multiple hunting licenses for multiple hunting areas.
[d]Included Genesee, Lapeer, Macomb, Oakland, and St. Clair counties within Management Unit YY.
[e]Hunting activity occurred at unknown location within Management Unit YY.

Table 8. Number of hunters, hunting effort, harvest, hunter success, and hunter satisfaction during the 2019 Michigan fall turkey hunting season, summarized by county.

County	Hunters[a]		Hunting efforts (days)[a]		Harvest[a]		Hunter success		Hunter satisfaction[b]	
	Total	95% CL	Total	95% CL	Total	95% CL	%	95% CL	%	95% CL
Alger	17	9	132	101	7	6	41	26	68	22
Allegan	469	78	3,342	682	134	42	26	7	65	8
Antrim	154	41	708	187	41	21	24	11	47	13
Baraga	65	25	306	168	38	17	48	19	74	14
Barry	345	65	2,476	580	54	24	15	7	54	9
Bay	88	34	382	174	34	22	39	19	55	19
Berrien	182	48	1,196	423	56	33	25	12	57	13
Branch	110	39	958	533	24	19	22	15	34	17
Calhoun	258	63	1,695	522	85	43	27	11	53	12
Cass	201	49	1,252	392	41	23	20	10	51	12
Charlevoix	87	24	416	157	23	14	23	12	52	15
Cheboygan	139	28	670	193	35	16	21	9	33	10
Chippewa	35	18	169	92	13	11	23	17	70	19
Clinton	193	51	971	316	57	30	27	12	69	12
Delta	101	25	590	171	48	18	40	12	49	13
Dickinson	97	20	520	138	37	14	34	10	62	10
Eaton	134	45	879	435	10	17	4	6	71	15
Emmet	72	21	315	112	16	10	22	12	51	15
Genesee	258	60	1,476	439	71	32	26	10	56	12
Gogebic	54	21	431	205	21	11	34	17	66	17
Gratiot	142	43	773	282	27	17	18	11	45	15

[a]Number of hunters does not add up to statewide total because hunters can hunt in more than one county. Column totals for hunting effort and harvest may not equal statewide totals because of rounding errors.

[b]Proportion of hunters that rated their hunting experience as excellent, very good, or good.

Table 8 (continued). Number of hunters, hunting effort, harvest, hunter success, and hunter satisfaction during the 2019 Michigan fall turkey hunting season, summarized by county.

County	Hunters[a]		Hunting efforts (days)[a]		Harvest[a]		Hunter success		Hunter satisfaction[b]	
	Total	95% CL	Total	95% CL	Total	95% CL	%	95% CL	%	95% CL
Hillsdale	280	65	1,980	629	55	31	20	10	62	11
Houghton	130	33	627	157	54	19	30	10	58	13
Huron	224	53	1,134	416	70	30	31	11	61	11
Ingham	250	59	1,446	509	64	29	26	10	62	12
Ionia	225	55	1,331	374	54	28	24	11	65	12
Iron	130	33	539	143	49	15	38	11	65	12
Isabella	188	49	1,320	413	39	21	20	10	60	12
Jackson	314	67	1,870	533	71	41	18	8	49	11
Kalamazoo	242	58	1,410	417	83	34	33	12	60	12
Kent	304	66	1,837	507	102	47	24	9	55	11
Keweenaw	45	20	242	108	7	6	16	13	74	16
Lapeer	434	82	2,690	739	145	56	29	9	55	10
Lenawee	223	55	1,357	451	29	22	11	7	47	13
Livingston	419	77	2,400	557	148	46	34	9	54	9
Luce	0	0	0	0	0	0	0	0	0	0
Mackinac	8	6	97	105	6	5	71	35	87	9
Macomb	124	42	520	219	36	23	29	16	72	15
Marquette	87	27	512	197	45	21	36	14	63	16
Mecosta	232	45	1,260	294	73	26	23	7	55	10
Menominee	110	25	619	176	36	18	30	12	58	11
Midland	266	59	1,485	531	137	48	43	11	66	10

[a]Number of hunters does not add up to statewide total because hunters can hunt in more than one county. Column totals for hunting effort and harvest may not equal statewide totals because of rounding errors.
[b]Proportion of hunters that rated their hunting experience as excellent, very good, or good.

Table 8 (continued). Number of hunters, hunting effort, harvest, hunter success, and hunter satisfaction during the 2019 Michigan fall turkey hunting season, summarized by county.

County	Hunters[a]		Hunting efforts (days)[a]		Harvest[a]		Hunter success		Hunter satisfaction[b]	
	Total	95% CL	Total	95% CL	Total	95% CL	%	95% CL	%	95% CL
Montcalm	249	55	1,736	521	71	42	22	9	54	11
Muskegon	241	56	1,387	419	81	46	25	10	60	11
Newaygo	354	47	2,346	399	78	20	21	5	46	7
Oakland	344	71	1,640	441	115	47	29	9	61	10
Oceana	121	24	657	195	40	18	27	9	56	10
Ontonagon	43	14	266	105	21	15	26	14	49	17
Otsego	205	36	952	230	55	20	25	8	49	10
Ottawa	319	68	1,838	512	81	39	22	9	57	11
Saginaw	295	63	1,955	605	74	29	23	9	55	11
St. Clair	377	74	2,051	504	96	38	24	8	55	10
St. Joseph	143	45	1,086	422	45	30	25	14	54	16
Sanilac	425	77	1,895	430	133	65	24	8	65	9
Schoolcraft	19	9	111	65	8	6	41	23	84	7
Shiawassee	195	55	1,382	493	19	15	10	7	62	13
Tuscola	437	79	2,579	573	111	44	21	7	60	9
Van Buren	175	48	1,118	395	46	25	26	12	71	12
Washtenaw	398	74	2,122	498	119	45	26	8	51	9
Unknown	971	110	5,372	915	250	59	24	5	59	6

[a]Number of hunters does not add up to statewide total because hunters can hunt in more than one county. Column totals for hunting effort and harvest may not equal statewide totals because of rounding errors.
[b]Proportion of hunters that rated their hunting experience as excellent, very good, or good.

Appendix A. Questionnaire used to collect data for the 2019 fall turkey harvest survey.

MICHIGAN DEPARTMENT OF NATURAL RESOURCES, WILDLIFE DIVISION
PO BOX 30030 LANSING MI 48909-7530

2019 MICHIGAN FALL TURKEY HUNTER REPORT

This information is requested under authority of Part 435, 1994 PA 451, M.C.L. 324.43539.

It is important that you complete and return this questionnaire even if you did not hunt or harvest a turkey. If you want to provide your answers via the internet, visit our website at www.michigan.gov/turkey.

1. Did you hunt turkeys during the 2019 fall season?
   [1] ☐ Yes   [2] ☐ No; skip the remaining questions and return the questionnaire.

2. If you hunted during the 2019 season, please complete the adjacent table:
(If you hunted on both public and private lands in the same county, report your activity on separate lines.)

County hunted *(see map on back)*	Land ownership *(please check one)*	Number of days hunted	Number of turkeys harvested
Example: Kent County	[1] ☒ Private [2] ☐ Public	*4 days*	*1*
	[1] ☐ Private [2] ☐ Public		
	[1] ☐ Private [2] ☐ Public		
	[1] ☐ Private [2] ☐ Public		

3. Did you hunt with a firearm, crossbow, or bow? *(select all that apply)*

[1] ☐ Firearm   [2] ☐ Crossbow   [3] ☐ Bow (recurve, compound, or long bow)

4. If you harvested a turkey, report how many were taken with a firearm, crossbow, or bow.

_____ Number of turkey you took with a <u>firearm</u>.

_____ Number of turkey you took with a <u>crossbow</u>.

_____ Number of turkey you took with a bow (<u>recurve</u>, <u>compound</u>, or <u>long bow</u>).

5. If you harvested a turkey, report how many of your turkeys had a beard.

_____ Number of harvested turkeys that <u>did</u> <u>not</u> <u>have</u> <u>a</u> <u>beard</u>.

_____ Number of harvested turkeys with a beard <u>less</u> <u>than</u> <u>4</u> <u>inches</u> long.

_____ Number of harvested turkeys with a beard <u>4</u> <u>or</u> <u>more</u> <u>inches</u> long.

Continued on next page

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6. Overall, how would you rate your 2019 fall turkey hunting experiences?

¹☐ Excellent   ²☐ Very Good   ³☐ Good   ⁴☐ Fair   ⁵☐ Poor

Please return questionnaire in the enclosed postage-paid envelope.
Thank you for your help.

2019 Fall Turkey Hunting Area