



Michigan Department of Natural Resources
Wildlife Division Report No. 3592
October 2014

2013 MICHIGAN FALL TURKEY HUNTER SURVEY

Brian J. Frawley

ABSTRACT

A survey of turkey hunters was conducted following the 2013 fall hunting season to determine turkey harvest and hunter participation. Overall, 31,823 people purchased 33,313 licenses in 2013 (versus 30,620 people purchased 32,271 licenses in 2012). The number of licenses sold in 2013 increased 3% from 2012. Excluding the Mentored Youth Hunt licenses, 20,078 hunters purchased 21,483 licenses in 2013, which was nearly 5% fewer licenses sold than in 2012 (21,001 hunters purchased 22,580 licenses in 2012). Most license buyers (97%) purchased a single hunting license. During the 2013 fall hunt, an estimated 17,761 hunters harvested about 5,430 turkeys. Hunter numbers and their hunting effort increased significantly by 14% and 16%, respectively, from 2012. The 2013 harvest decreased 10% from 2012 (6,042 turkeys harvested in 2012). Hunter success was 28% in 2013 (versus 36% success in 2012). About 59% of the hunters in 2013 rated their hunting experience as excellent, very good, or good (versus 61% satisfaction in 2012). The number of turkey harvested and hunting success in 2013 decreased significantly from 2012; however, hunter satisfaction did not change significantly from 2012.

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 2013, 11 management units totaling about 44,943 square miles were open for fall turkey hunting during September 15 through November 14 (Figure 1). The area open to hunting in 2013 increased by 25% from 2012 (an additional 8,865 square miles), and three new management units were created (units J, T, and WA).



A contribution of Federal Aid in Wildlife Restoration, Michigan Project W-147-R

Equal Rights for Natural Resource Users

The Michigan Department of Natural Resources provides equal opportunities for employment and access to Michigan's natural resources. Both State and Federal laws prohibit discrimination on the basis of race, color, national origin, religion, disability, age, sex, height, weight or marital status under the U.S. Civil Rights Acts of 1964 as amended, 1976 MI PA 453, 1976 MI PA 220, Title V of the Rehabilitation Act of 1973 as amended, and the 1990 Americans with Disabilities Act, as amended.

If you believe that you have been discriminated against in any program, activity, or facility, or if you desire additional information, please write:
Human Resources, Michigan Department of Natural Resources, PO Box 30473, Lansing MI 48909-7973, or
Michigan Department of Civil Rights, Cadillac Place, 3054 West Grand Blvd, Suite 3-600, Detroit, MI 48202, or
Division of Federal Assistance, U.S. Fish & Wildlife Service, 4401 North Fairfax Drive, Mail Stop MBSP-4020, Arlington, VA 22203.

For information or assistance on this publication, contact Michigan Department of Natural Resources, Wildlife Division, P.O. Box 30444, Lansing MI 48909.
This publication is available in alternative formats upon request.

Most people interested in obtaining a turkey hunting license could enter into a random drawing (lottery) conducted by the Department of Natural Resources (DNR) or purchase a license for Hunt 501 without going through the lottery. 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. Licenses were available for six management units (units HA, J, L, M, W, and YY) after the drawing was completed (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, 402, 403, 404, 405, 406, 407, 408, and 409 (units G, GB, GC, J, L, M, T, W, and WA) were valid on either land ownership types (i.e., public or private land). Hunters were allowed to take one turkey of either sex with the harvest tag issued with each license. Turkey could be harvested with a shotgun, crossbow, or archery equipment. Hunters 12-years-old or older could use a crossbow to hunt turkeys. Hunters using a crossbow were required to obtain a free crossbow stamp, except hunters with a disability already hunting under a DNR-issued crossbow permit did not need the stamp.

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 licenses were 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, 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 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). In addition, hunters were asked what type of hunting equipment was used to hunt turkeys and kill turkeys. Finally, hunters rated their overall hunting experience (excellent, very good, good, fair, or poor).

Following the 2013 fall turkey hunting season, a questionnaire was sent to 13,473 randomly selected people that had purchased a 2013 turkey hunting license (resident turkey, senior resident turkey, nonresident turkey, Mentored Youth Hunt, 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 ($N_G=106$; $N_{GB}=127$; $N_{GC}=119$; $N_{HA}=1,017$; $N_J=925$; $N_L=617$; $N_M=1,040$; $N_T=106$; $N_W=104$; $N_{WA}=46$; and $N_{YY}=15,202$). The twelfth stratum included hunters obtaining only a Mentored Youth Hunt license ($N=11,743$). 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 ($N=180$). 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 ($N=488$).

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 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 was equivalent to stating the difference between the means was larger than would be expected 995 out of 1,000 times, if the study had been repeated (Payton et al. 2003).

Questionnaires were mailed initially during mid-December 2013, and up to two follow-up questionnaires were mailed to nonrespondents. Although 13,473 people were sent the questionnaire, 209 surveys were undeliverable resulting in an adjusted sample size of 13,264. Questionnaires were returned by 7,719 people, yielding a 58% adjusted response rate. In addition, 488 people voluntarily reported information about their hunting activity via the internet.

RESULTS

In 2013, the DNR offered 51,850 licenses for sale (4% greater than the quota in 2012), excluding Pure Michigan Hunt and Mentored Youth Hunt licenses (Table 1). A total of 2,942 licenses were purchased by people successful in the drawing, and another 497 leftover licenses were purchased by people that had applied for a hunt in the drawing. A total of 18,041 licenses were purchased by people that had not entered into the drawing. In addition, 3 people were awarded a Pure Michigan Hunt license, and 11,830 youth obtained a turkey hunting license when they obtained their Mentored Youth Hunt license.

Overall, 31,823 people purchased 33,313 licenses in 2013 (versus 30,620 people purchased 32,271 licenses in 2012). The number of licenses sold in 2013 increased 3% from 2012. Excluding the Mentored Youth Hunt licenses, 20,078 hunters purchased 21,483 licenses in 2013, which was nearly 5% fewer licenses sold than in 2012 (21,001 hunters purchased 22,580 licenses in 2012).

Excluding people obtaining a Mentored Youth Hunt license, the average age of the 20,078 license buyers was 48 years (Figure 2), and about 8% of the license buyers were younger than 17 years old (1,548). Hunters with a Mentored Youth Hunt license were excluded because only $19 \pm 2\%$ of them actually hunted (Table 2).

Including all license types, most license buyers (97%) purchased a single hunting license in 2013 (Figure 3). About 3% of hunters purchased 2 licenses and less than 1% of hunters purchased 3 or more licenses.

Excluding people obtaining a Mentored Youth Hunt license, the number of people buying a license in 2013 (20,078) increased by about 6% in ten years from 2002 (19,025 people purchased a license in 2003). Although more people purchased a license in 2013 than in 2003, there were fewer license buyers for most age classes between 30 and 50 years of age in 2013 (Figure 4). However, there were increased hunter numbers among the youngest and oldest age classes in 2013. The increased hunter numbers in the oldest age classes likely represented the rising share of older people in the population as the baby-boom generation aged and life expectancies have increased. The increased participation among the youngest hunters likely reflected the lowering of the minimum age requirements. In 2013, hunters had to be at least 10

years old to participate (excluding Mentored Youth Hunts); while the hunters had to be at least 12 years old to participate in 2003.

In 2013, about 17,761 hunters spent 111,414 days afield pursuing turkeys ($\bar{x} = 6.3 \pm 0.2$ days/hunter) (Tables 3 and 4, Figure 5). The number of people pursuing turkeys and their hunting effort in 2013 increased significantly from 2012 (14% and 16% increase, respectively). About 93% of the hunters that went afield were males ($16,485 \pm 265$) and 7% of the hunters were females ($1,276 \pm 132$).

About 28% of active hunters successfully harvested a turkey in 2013, and they harvested an estimated 5,430 turkeys (Tables 5 and 6). The number of turkeys harvested decreased significantly by 10% from 2012 (6,042 turkeys harvested in 2012), and hunter success was significantly lower (28% versus 36%) than in 2012 (Figure 5). Among the 5,036 hunters that took at least one turkey, 94% ($4,732 \pm 206$) of these hunters took one turkey, 5% (236 ± 50) took 2 turkeys, and about 1% (68 ± 24) took more than 2 turkeys (Figure 6). Hunter success was statistically greater for hunters using private lands than for hunters using public lands in 2013 (29% versus 19%, Table 5).

About 93% ($16,439 \pm 267$) of turkey hunters hunted solely on private land, 5% (925 ± 64) hunted on public land only, and 2% (359 ± 44) hunted on both private and public lands. Additionally, less than 1% of hunters (39 ± 21) hunted on land of unknown ownership. Of the 5,430 turkeys harvested in 2013, 95% of these birds were taken on private land (5,171), while about 3% of the harvest (249) was taken on public land (Table 6). About 62% of the harvested birds had a beard ($3,363 \pm 189$). Most of these bearded birds (84%) were adults ($2,828 \pm 175$); 16% were juvenile birds (535 ± 78).

Of the 17,761 turkey hunters in 2013, nearly 59% 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 (59% versus 50%). Changes in hunter satisfaction between years generally parallel changes in hunter success (Figure 7). Between 2012 and 2013, hunter success decreased significantly (36% in 2012 versus 28% in 2013); however, satisfaction did not change significantly (61% in 2012 versus 59% in 2013).

Hunter numbers were greatest in Lapeer, Sanilac, Tuscola, and St. Clair counties; these counties had more than 600 hunters (Table 8). Harvest was greatest in Sanilac, Tuscola, and Lapeer counties; these counties had more than 200 turkeys taken by hunters.

Most hunters ($64 \pm 1\%$; $11,443 \pm 280$ hunters) used shotguns while hunting turkeys, although $26 \pm 1\%$ ($4,613 \pm 212$) used a crossbow, and $22 \pm 1\%$ ($3,865 \pm 189$) of the hunters used either a compound, recurve, or long bow. About 71% ($3,838 \pm 209$) of the harvested turkeys were taken with a shotgun, while 17% (931 ± 104) of harvested turkeys were taken with a crossbow. About 9% (500 ± 76) were taken with either a compound, recurve, or long bow. About $31 \pm 1\%$ of the hunters using a shotgun took at least one turkey with their shotgun; $20 \pm 2\%$ of the hunters using a crossbow harvested

a turkey; and $13 \pm 2\%$ of hunters using either a compound, recurve, or long bow took a turkey.

About $71 \pm 2\%$ of the turkey hunters using a crossbow had obtained the crossbow stamp. However, $81 \pm 2\%$ of the hunters using a crossbow in 2013 had obtained a crossbow stamp during at least one year during 20011 through 2013.

ACKNOWLEDGEMENTS

I thank all the turkey hunters that provided information. Sheree Kershaw, Theresa Riebow, and Russ Slack completed data entry. Sangeetha Katthury and Chris Larson developed the internet harvest reporting application. Marshall Strong prepared the figure of the turkey management units (Figure 1). Jillian Farkas, Russ Mason, Doug Reeves, and Al Stewart reviewed a draft version of this report.

LITERATURE CITED

- Cochran, W. G. 1977. Sampling techniques. John Wiley & Sons, New York, USA.
- Kelly, G. 1975. Indexes for aging eastern wild turkeys. Proceedings of the National Wild Turkey Symposium. 3:205-209.
- 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.

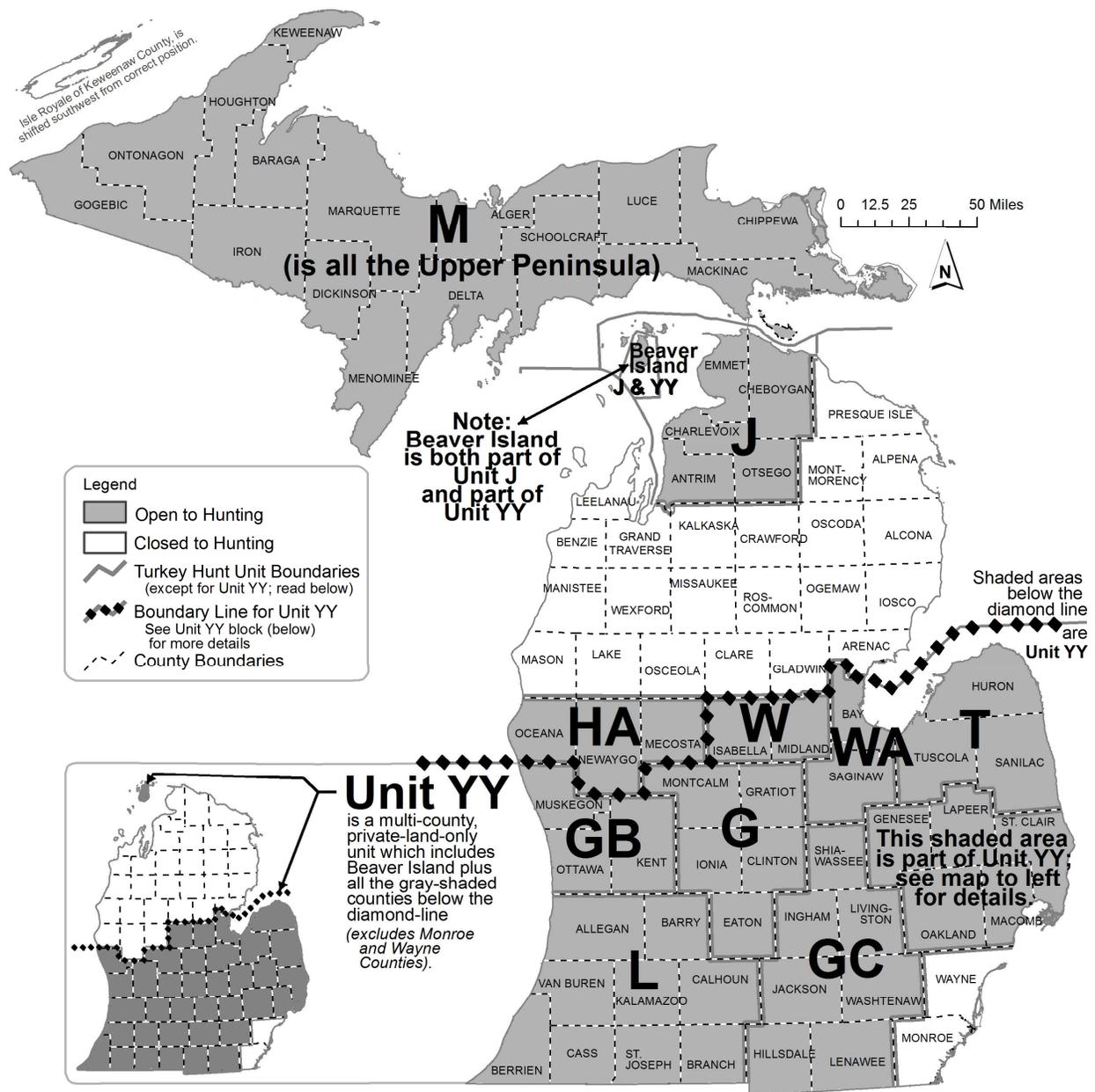


Figure 1. Management units open for fall turkey hunting in Michigan, 2013.

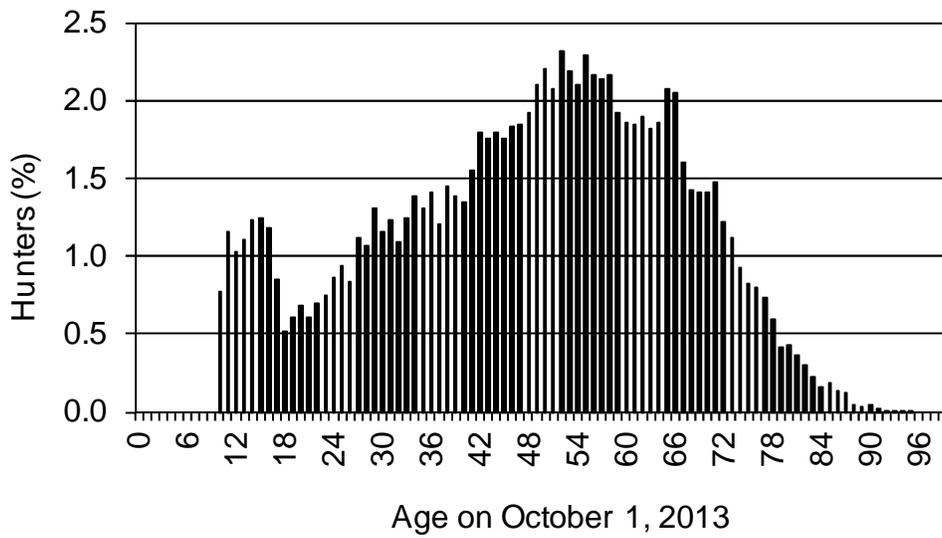


Figure 2. Age of people that purchased a turkey hunting license in Michigan for the 2013 fall hunting season ($\bar{x} = 48$ years). Licenses were purchased by 20,078 people, excluding Mentored Youth Hunt license buyers.

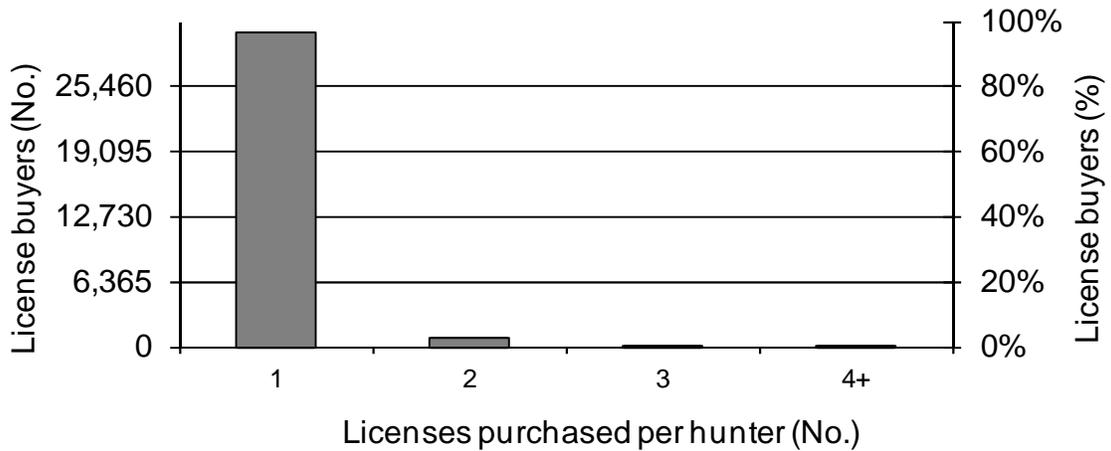


Figure 3. Number of licenses purchased per person for hunting turkey in Michigan during the 2013 fall hunting season (included all hunting license types).

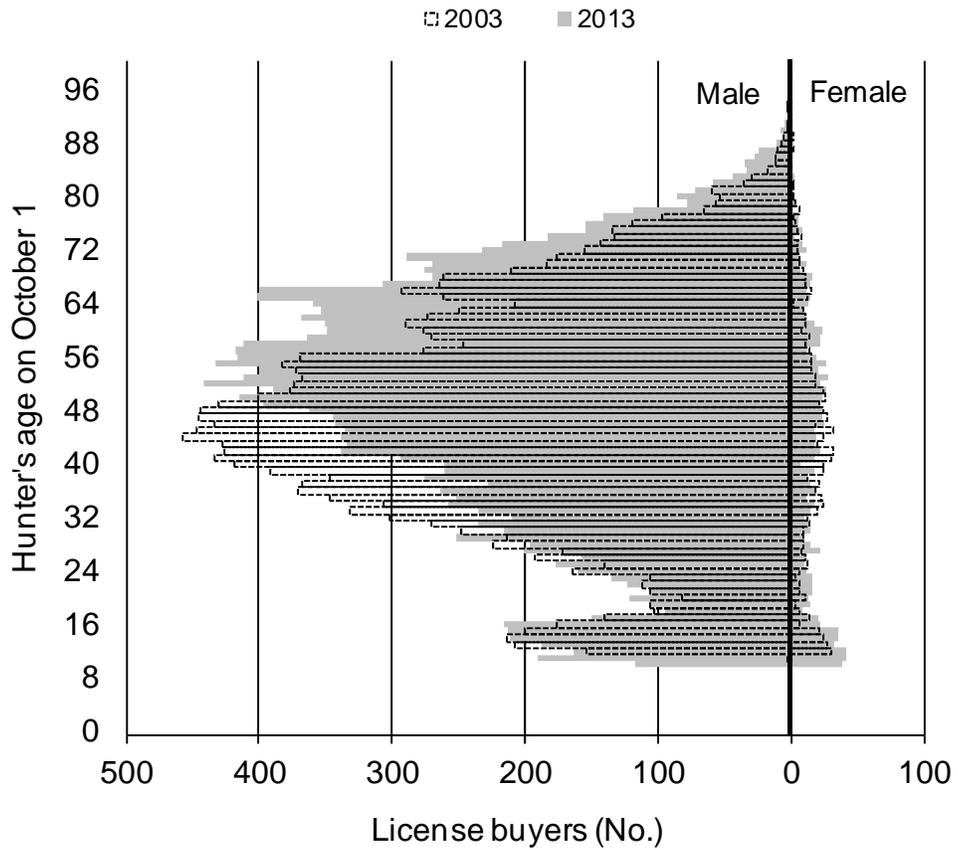


Figure 4. Number of fall turkey hunting license buyers in Michigan by age and sex during 2003 and 2013 hunting seasons, excluding Mentored Youth Hunt licenses. The number of people buying a license was 19,025 in 2003 and 20,078 in 2013.

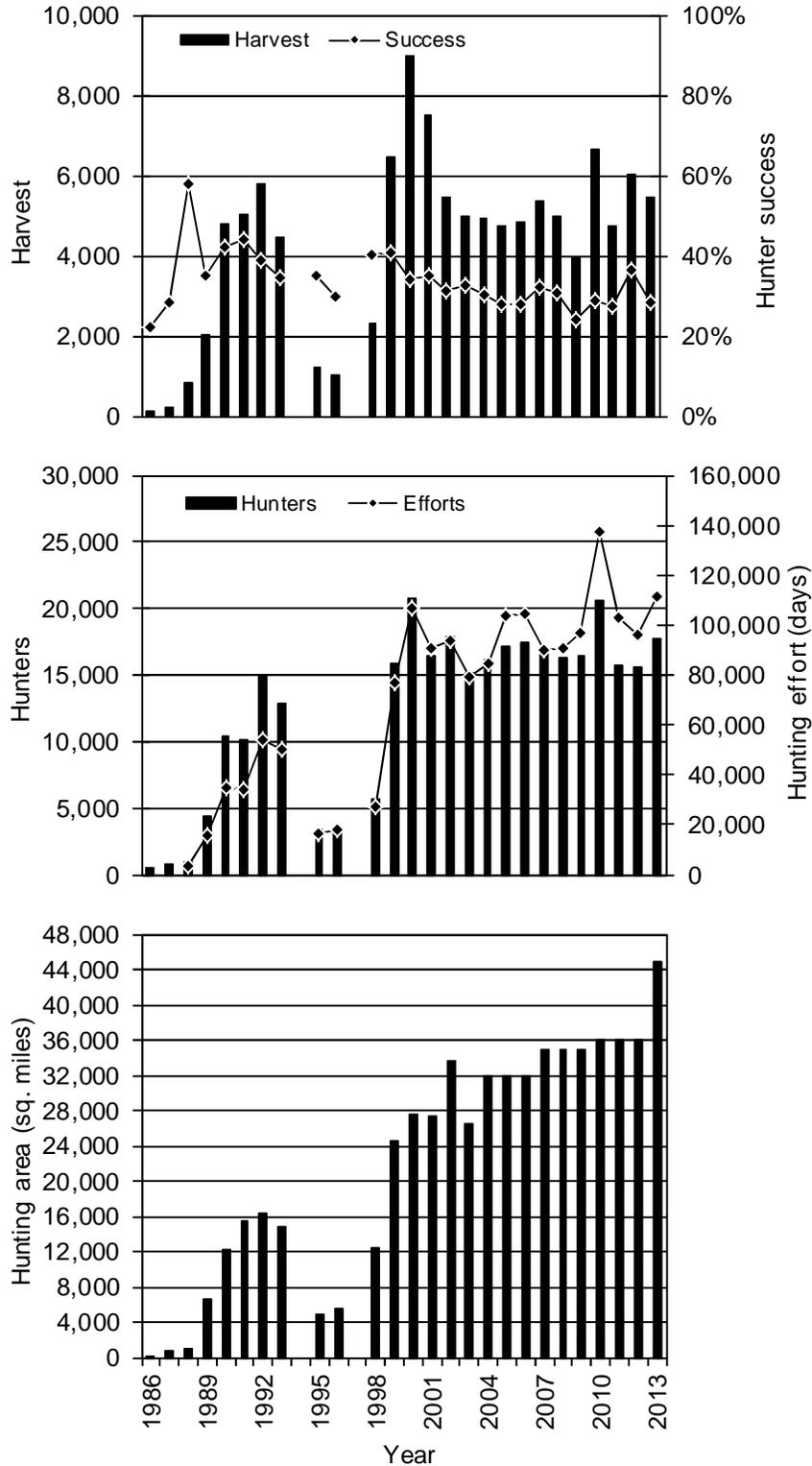


Figure 5. Number of hunters, hunting efforts (days), harvest, hunting success, and hunting area during the fall turkey hunting season, 1986-2013. Turkeys were not hunted during the fall in 1994 and 1997.

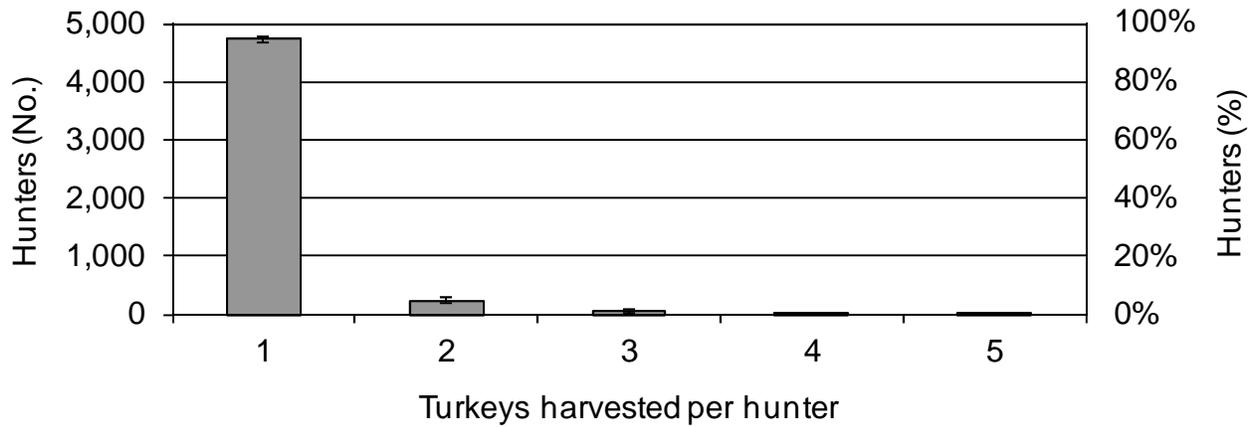


Figure 6. Number of turkeys harvested per successful hunter in Michigan during the 2013 fall hunting season.

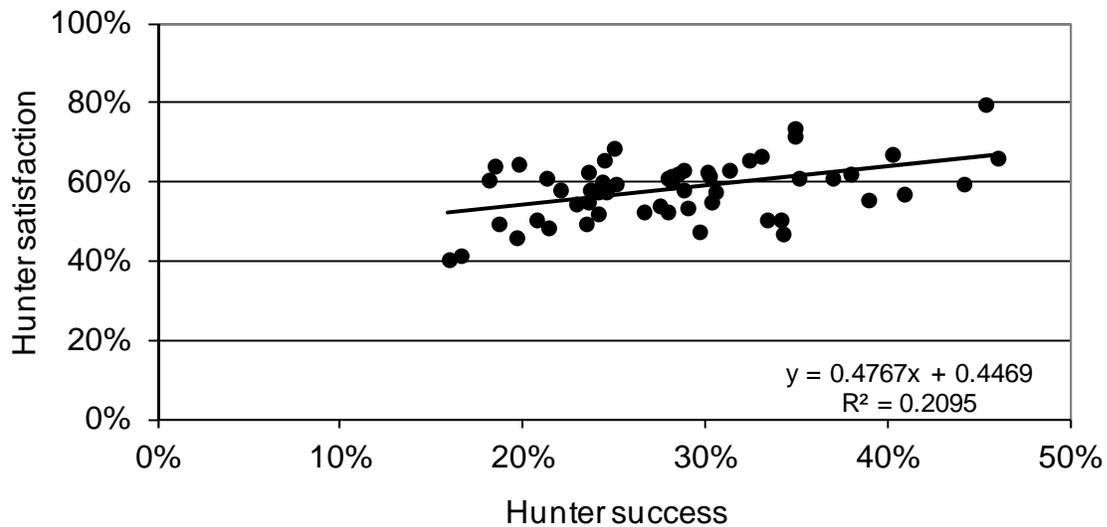


Figure 7. Hunter satisfaction (expressed as the percentage of hunters rating their hunting experience as excellent, very good, or good) associated with hunter success for each of 55 counties in Michigan during the 2013 fall turkey hunting season (only included counties with at least 20 hunters).

Table 1. Number of hunting licenses available and people applying for licenses during the 2013 Michigan fall turkey hunting season.

Management 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	316	200	0	127	0	0	127
GB	402	250	338	250	0	143	0	0	143
GC	403	200	861	200	0	133	0	0	133
HA ^b	410	1,700	1,166	1,166	534	720	67	406	1,193
J	404	1,500	778	778	722	463	70	499	1,032
L	405	1,000	635	635	365	424	51	264	739
M	406	1,500	691	691	809	434	62	692	1,188
T	407	200	304	200	0	125	0	0	125
W	408	200	141	141	59	71	4	44	119
WA	409	100	105	100	0	48	0	0	48
YY ^b	501	45,000	0	0	45,000	254	243	16,136	16,633
Pure MI ^c	NA ^c	NA	0	0	NA	0	0	0	3
MYH ^d	Any	NA	0	0	NA	0	0	0	11,830
Statewide	All	51,850	5,335	4,361	47,489	2,942	497	18,041	33,313

^aQuotas were assigned by hunts within each management unit.

^bLicenses were valid on private lands only.

^cPure Michigan Hunt. These hunters could hunt in any management unit.

^dMentored 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 2013 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
2,185	188	8,785	1,063	352	84	16	3	67	5

^aProportion of hunters that rated their hunting experience as excellent, very good, or good.

Table 3. Number of hunters during the 2013 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	36	6	61	7	0	0	87	5
501 ^b	1,191	118	0	0	0	0	1,191	118
MYH ^c	173	58	12	16	0	0	180	59
Multiple ^d	40	4	12	2	0	0	49	4
Subtotal	1,440	132	85	17	0	0	1,506	132
GB								
402	67	9	47	9	0	0	106	7
501 ^b	889	103	0	0	0	0	889	103
MYH ^c	192	61	6	11	0	0	198	62
Multiple ^d	49	5	7	3	0	0	54	5
Subtotal	1,196	121	61	14	0	0	1,247	121
GC								
403	46	7	48	7	4	3	92	6
501 ^b	2,532	164	0	0	0	0	2,532	164
MYH ^c	279	74	6	11	6	11	291	75
Multiple ^d	79	4	8	2	0	0	85	4
Subtotal	2,936	180	62	13	10	11	3,001	181
HA								
410 ^b	816	24	0	0	0	0	816	24
MYH ^c	155	55	0	0	0	0	155	55
Multiple ^d	66	4	0	0	0	0	66	4
Subtotal	1,038	61	0	0	0	0	1,038	61
J								
404	508	37	211	31	3	4	668	33
501 ^b	4	7	0	0	0	0	4	7
MYH ^c	81	40	12	16	0	0	87	41
Multiple ^d	30	3	9	1	0	0	37	4
Subtotal	623	55	233	35	3	4	796	54
L								
405	288	21	246	21	2	2	486	17
501 ^b	2,364	159	0	0	0	0	2,364	159
MYH	235	68	31	25	0	0	254	70
Multiple ^c	105	6	26	3	0	0	124	6
Subtotal	2,993	175	303	32	2	2	3,228	175

^aNumber of hunters may not add up to total because hunters could hunt on both private and public lands.

^bLicenses were valid on private lands only.

^cMentored Youth Hunts.

^dHunters that purchased multiple hunting licenses for multiple hunting areas.

^eIncluded Genesee, Lapeer, Macomb, Oakland, and St. Clair counties within Management Unit YY.

^fHunting activity occurred at unknown location within Management Unit YY.

Table 3 (continued). Number of hunters during the 2013 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
M								
406	554	32	356	31	10	6	791	28
MYH ^c	105	46	25	22	6	11	136	52
Multiple ^d	25	3	13	2	0	0	32	4
Subtotal	684	56	393	38	16	13	959	59
T								
407	52	7	50	7	1	2	93	5
501 ^b	1,372	126	0	0	0	0	1,372	126
MYH ^c	211	64	19	19	0	0	217	65
Multiple ^d	55	4	5	2	0	0	57	4
Subtotal	1,689	142	73	21	1	2	1,739	142
W								
408	61	6	21	5	0	0	75	6
501 ^b	526	80	0	0	0	0	526	80
MYH ^c	74	38	6	11	6	11	87	41
Multiple ^d	21	2	1	0	0	0	22	2
Subtotal	682	89	28	12	6	11	709	91
WA								
409	24	4	13	4	0	0	37	3
501 ^b	522	80	0	0	0	0	522	80
MYH ^c	105	46	12	16	0	0	111	47
Multiple ^d	23	2	0	0	0	0	23	2
Subtotal	675	92	25	16	0	0	694	93
Eastern YY^e								
501 ^b	2,053	150	0	0	0	0	2,053	150
MYH ^c	291	75	0	0	0	0	291	75
Multiple ^d	85	4	0	0	0	0	85	4
Subtotal	2,429	168	0	0	0	0	2,429	168
Unknown YY^f								
501 ^b	569	84	0	0	0	0	569	84
MYH ^c	192	61	19	19	0	0	204	63
Multiple ^d	17	2	1	1	0	0	17	2
Subtotal	778	104	20	19	0	0	791	105
Statewide								
Total	16,780	268	1,281	74	39	21	17,761	269

^aNumber of hunters may not add up to total because hunters could hunt on both private and public lands.

^bLicenses were valid on private lands only.

^cMentored Youth Hunts.

^dHunters that purchased multiple hunting licenses for multiple hunting areas.

^eIncluded Genesee, Lapeer, Macomb, Oakland, and St. Clair counties within Management Unit YY.

^fHunting activity occurred at unknown location within Management Unit YY.

Table 4. Days of hunting effort during the 2013 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	166	39	362	68	0	0	527	68
501 ^b	8,498	1,250	0	0	0	0	8,498	1,250
MYH ^c	657	253	50	70	0	0	706	273
Multiple ^d	234	35	50	19	0	0	284	47
Subtotal	9,554	1,276	462	100	0	0	10,016	1,282
GB								
402	482	90	283	76	0	0	765	98
501 ^b	5,940	952	0	0	0	0	5,940	952
MYH ^c	1,059	506	12	22	0	0	1,071	506
Multiple ^d	312	51	42	25	0	0	354	59
Subtotal	7,793	1,083	338	83	0	0	8,131	1,084
GC								
403	179	33	266	64	45	27	490	68
501 ^b	15,556	1,426	0	0	0	0	15,556	1,426
MYH ^c	991	357	25	44	6	11	1,022	359
Multiple ^d	532	44	35	14	0	0	567	45
Subtotal	17,258	1,471	325	79	51	29	17,634	1,473
HA								
410 ^b	5,004	334	0	0	0	0	5,004	334
MYH ^c	514	223	0	0	0	0	514	223
Multiple ^d	330	26	0	0	0	0	330	26
Subtotal	5,849	402	0	0	0	0	5,849	402
J								
404	2,483	290	978	190	13	19	3,474	335
501 ^b	13	22	0	0	0	0	13	22
MYH ^c	223	143	43	60	0	0	266	170
Multiple ^d	130	6	38	1	0	0	168	6
Subtotal	2,848	324	1,060	199	13	19	3,921	377
L								
405	1,926	238	1,678	221	7	9	3,611	296
501 ^b	17,178	1,626	0	0	0	0	17,178	1,626
MYH	1,003	426	105	95	0	0	1,109	440
Multiple ^c	900	90	167	33	0	0	1,067	95
Subtotal	21,007	1,700	1,950	243	7	9	22,964	1,713

^aColumn and row totals for hunting effort may not equal statewide totals because of rounding errors.

^bLicenses were valid on private lands only.

^cMentored Youth Hunts.

^dHunters that purchased multiple hunting licenses for multiple hunting areas.

^eIncluded Genesee, Lapeer, Macomb, Oakland, and St. Clair counties within Management Unit YY.

^fHunting activity occurred at unknown location within Management Unit YY.

Table 4 (continued). Days of hunting effort during the 2013 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
M								
406	3,302	339	2,205	273	35	25	5,541	431
MYH ^c	446	219	111	124	19	33	576	254
Multiple ^d	147	18	98	18	0	0	245	25
Subtotal	3,894	404	2,415	301	53	42	6,362	501
T								
407	228	49	343	89	22	25	593	90
501 ^b	8,283	1,069	0	0	0	0	8,283	1,069
MYH ^c	879	369	50	52	0	0	929	375
Multiple ^d	317	39	23	3	0	0	340	39
Subtotal	9,708	1,133	415	103	22	25	10,145	1,137
W								
408	301	53	165	58	0	0	466	75
501 ^b	3,089	630	0	0	0	0	3,089	630
MYH ^c	285	179	31	56	6	11	322	188
Multiple ^d	122	3	4	0	0	0	126	3
Subtotal	3,796	657	200	80	6	11	4,003	662
WA								
409	142	37	76	29	0	0	219	37
501 ^b	3,606	729	0	0	0	0	3,606	729
MYH ^c	359	172	50	65	0	0	409	200
Multiple ^d	152	3	0	0	0	0	152	3
Subtotal	4,260	750	126	71	0	0	4,386	757
Eastern YY^e								
501 ^b	12,471	1,270	0	0	0	0	12,471	1,270
MYH ^c	1,202	399	0	0	0	0	1,202	399
Multiple ^d	529	46	0	0	0	0	529	46
Subtotal	14,202	1,331	0	0	0	0	14,202	1,331
Unknown YY^f								
501 ^b	3,102	630	0	0	0	0	3,102	630
MYH ^c	526	203	105	124	0	0	632	246
Multiple ^d	64	8	4	4	0	0	68	9
Subtotal	3,692	662	109	124	0	0	3,801	677
Statewide								
Total ^a	103,862	2,954	7,400	499	152	61	111,414	2,992

^aColumn and row totals for hunting effort may not equal statewide totals because of rounding errors.

^bLicenses were valid on private lands only.

^cMentored Youth Hunts.

^dHunters that purchased multiple hunting licenses for multiple hunting areas.

^eIncluded Genesee, Lapeer, Macomb, Oakland, and St. Clair counties within Management Unit YY.

^fHunting activity occurred at unknown location within Management Unit YY.

Table 5. Hunting success (proportion of hunters taking at least one turkey) during the 2013 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	24	9	14	6	0	0	20	6
501 ^a	26	5	0	0	0	0	26	5
MYH ^b	11	10	0	0	0	0	10	10
Multiple ^c	40	5	17	3	0	0	36	4
Subtotal	25	4	13	5	0	0	24	4
GB								
402	7	5	14	8	0	0	11	5
501 ^a	30	5	0	0	0	0	30	5
MYH ^b	19	13	0	0	0	0	19	12
Multiple ^c	44	5	31	15	0	0	41	5
Subtotal	27	5	14	7	0	0	27	4
GC								
403	15	7	15	6	0	0	15	5
501 ^a	29	3	0	0	0	0	29	3
MYH ^b	16	10	0	0	100	0	17	10
Multiple ^c	34	3	16	13	0	0	33	3
Subtotal	28	3	13	6	60	46	28	3
HA								
410 ^b	27	3	0	0	0	0	27	3
MYH ^b	12	12	0	0	0	0	12	12
Multiple ^c	43	4	0	0	0	0	43	4
Subtotal	26	3	0	0	0	0	26	3
J								
404	30	5	14	6	0	0	26	4
501 ^a	100	0	0	0	0	0	100	0
MYH ^b	8	13	50	63	0	0	14	17
Multiple ^c	33	6	22	3	0	0	33	5
Subtotal	27	5	17	7	0	0	26	4
L								
405	21	4	15	4	0	0	20	3
501 ^a	27	3	0	0	0	0	27	3
MYH ^b	8	8	0	0	0	0	7	7
Multiple ^c	39	3	20	4	0	0	37	3
Subtotal	25	3	14	3	0	0	25	3

^aLicenses were valid on private lands only.

^bMentored Youth Hunts.

^cHunters that purchased multiple hunting licenses for multiple hunting areas.

^dIncluded Genesee, Lapeer, Macomb, Oakland, and St. Clair counties within Management Unit YY.

^eHunting activity occurred at unknown location within Management Unit YY.

Table 5 (continued). Hunting success (proportion of hunters taking at least one turkey) during the 2013 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	40	4	29	5	20	25	41	3
MYH ^b	35	21	0	0	0	0	27	17
Multiple ^c	43	6	52	9	0	0	55	6
Subtotal	39	5	28	5	12	18	39	4
T								
407	31	9	12	6	100	0	25	6
501 ^a	37	5	0	0	0	0	37	5
MYH ^b	12	10	33	49	0	0	14	11
Multiple ^c	38	4	28	20	0	0	39	4
Subtotal	34	4	18	14	100	0	33	4
W								
408	27	7	13	9	0	0	26	6
501 ^a	33	7	0	0	0	0	33	7
MYH ^b	50	26	0	0	0	0	43	24
Multiple ^c	31	4	0	0	0	0	29	4
Subtotal	34	6	10	8	0	0	33	6
WA								
409	18	10	11	12	0	0	15	8
501 ^a	36	7	0	0	0	0	36	7
MYH ^b	18	17	0	0	0	0	17	16
Multiple ^c	23	4	0	0	0	0	23	4
Subtotal	32	6	6	7	0	0	31	6
Eastern YY^d								
501 ^a	29	4	0	0	0	0	29	4
MYH ^c	19	10	0	0	0	0	19	10
Multiple ^c	36	2	0	0	0	0	36	2
Subtotal	28	3	0	0	0	0	28	3
Unknown YY^e								
501 ^a	24	6	0	0	0	0	24	6
MYH ^b	3	6	0	0	0	0	3	5
Multiple ^c	37	6	0	0	0	0	37	6
Subtotal	19	5	0	0	0	0	19	5
Statewide								
Total	29	1	19	2	25	25	28	1

^aLicenses were valid on private lands only.

^bMentored Youth Hunts.

^cHunters that purchased multiple hunting licenses for multiple hunting areas.

^dIncluded Genesee, Lapeer, Macomb, Oakland, and St. Clair counties within Management Unit YY.

^eHunting activity occurred at unknown location within Management Unit YY.

Table 6. Number of turkeys harvested during the 2013 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	9	4	9	4	0	0	17	5
501 ^b	332	68	0	0	0	0	332	68
MYH ^c	19	19	0	0	0	0	19	19
Multiple ^d	18	4	2	0	0	0	20	4
Subtotal	378	71	11	4	0	0	389	71
GB								
402	5	3	7	4	0	0	11	5
501 ^b	276	62	0	0	0	0	276	62
MYH ^c	37	27	0	0	0	0	37	27
Multiple ^d	28	6	2	1	0	0	30	7
Subtotal	346	68	9	4	0	0	355	69
GC								
403	7	3	7	3	0	0	14	4
501 ^b	807	110	0	0	0	0	807	110
MYH ^c	43	29	0	0	6	11	50	31
Multiple ^d	28	4	1	1	0	0	29	4
Subtotal	885	114	8	3	6	11	900	115
HA								
410 ^b	236	28	0	0	0	0	236	28
MYH ^c	19	19	0	0	0	0	19	19
Multiple ^d	30	4	0	0	0	0	30	4
Subtotal	285	34	0	0	0	0	285	34
J								
404	165	32	30	13	0	0	196	35
501 ^b	4	7	0	0	0	0	4	7
MYH ^c	6	11	6	11	0	0	12	16
Multiple ^d	10	2	2	0	0	0	12	2
Subtotal	186	35	39	17	0	0	224	39
L								
405	61	13	38	11	0	0	100	16
501 ^b	712	110	0	0	0	0	712	110
MYH	19	19	0	0	0	0	19	19
Multiple ^c	50	7	5	1	0	0	55	7
Subtotal	842	112	44	11	0	0	885	113

^aColumn and row totals for hunting effort may not equal statewide totals because of rounding errors.

^bLicenses were valid on private lands only.

^cMentored Youth Hunts.

^dHunters that purchased multiple hunting licenses for multiple hunting areas.

^eIncluded Genesee, Lapeer, Macomb, Oakland, and St. Clair counties within Management Unit YY.

^fHunting activity occurred at unknown location within Management Unit YY.

Table 6 (continued). Number of turkeys harvested during the 2013 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
M								
406	233	29	114	23	2	3	349	35
MYH ^c	37	27	0	0	0	0	37	27
Multiple ^d	11	2	7	2	0	0	18	3
Subtotal	281	40	121	23	2	3	404	44
T								
407	16	5	6	3	1	2	24	6
501 ^b	552	90	0	0	0	0	552	90
MYH ^c	31	29	6	11	0	0	37	31
Multiple ^d	24	4	1	1	0	0	25	4
Subtotal	623	95	13	12	1	2	638	96
W								
408	17	5	3	2	0	0	19	5
501 ^b	181	50	0	0	0	0	181	50
MYH ^c	37	27	0	0	0	0	37	27
Multiple ^d	6	1	0	0	0	0	6	1
Subtotal	241	57	3	2	0	0	244	57
WA								
409	4	3	1	2	0	0	6	3
501 ^b	198	53	0	0	0	0	198	53
MYH ^c	19	19	0	0	0	0	19	19
Multiple ^d	5	1	0	0	0	0	5	1
Subtotal	227	57	1	2	0	0	228	57
Eastern YY^e								
501 ^b	634	94	0	0	0	0	634	94
MYH ^c	56	33	0	0	0	0	56	33
Multiple ^d	32	3	0	0	0	0	32	3
Subtotal	722	100	0	0	0	0	722	100
Unknown YY^f								
501 ^b	142	44	0	0	0	0	142	44
MYH ^c	6	11	0	0	0	0	6	11
Multiple ^d	8	2	0	0	0	0	8	2
Subtotal	156	45	0	0	0	0	156	45
Statewide								
Total ^a	5,171	237	249	34	10	12	5,430	240

^aColumn and row totals for hunting effort may not equal statewide totals because of rounding errors.

^bLicenses were valid on private lands only.

^cMentored Youth Hunts.

^dHunters that purchased multiple hunting licenses for multiple hunting areas.

^eIncluded Genesee, Lapeer, Macomb, Oakland, and St. Clair counties within Management Unit YY.

^fHunting 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 2013 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	56	11	67	8	0	0	62	7
501 ^a	57	5	0	0	0	0	57	5
MYH ^b	71	15	50	63	0	0	72	15
Multiple ^c	68	4	81	9	0	0	72	4
Subtotal	59	5	66	11	0	0	60	4
GB								
402	46	10	38	11	0	0	43	8
501 ^a	61	6	0	0	0	0	61	6
MYH ^b	68	15	100	0	0	0	69	15
Multiple ^c	77	4	83	15	0	0	77	4
Subtotal	62	5	50	13	0	0	61	5
GC								
403	52	9	50	9	33	29	52	6
501 ^a	62	3	0	0	0	0	62	3
MYH ^b	64	13	100	0	100	0	66	12
Multiple ^c	78	2	71	13	0	0	77	2
Subtotal	62	3	58	10	73	33	62	3
HA								
410 ^b	53	3	0	0	0	0	53	3
MYH ^b	80	14	0	0	0	0	80	14
Multiple ^c	70	3	0	0	0	0	70	3
Subtotal	58	4	0	0	0	0	58	4
J								
404	52	5	44	8	100	0	50	5
501 ^a	100	0	0	0	0	0	100	0
MYH ^b	54	25	50	63	0	0	57	24
Multiple ^c	63	5	46	7	0	0	64	4
Subtotal	53	5	44	8	100	0	51	5
L								
405	57	5	50	5	0	0	53	4
501 ^a	54	4	0	0	0	0	54	4
MYH ^b	47	15	20	32	0	0	46	14
Multiple ^c	70	3	67	6	0	0	68	3
Subtotal	54	3	48	6	0	0	54	3

^aLicenses were valid on private lands only.

^bMentored Youth Hunts.

^cHunters that purchased multiple hunting licenses for multiple hunting areas.

^dIncluded Genesee, Lapeer, Macomb, Oakland, and St. Clair counties within Management Unit YY.

^eHunting 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 2013 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	59	4	49	5	40	31	57	4
MYH ^b	65	21	75	39	100	0	68	18
Multiple ^c	74	6	75	8	0	0	76	6
Subtotal	60	5	51	6	63	33	59	4
T								
407	60	9	47	10	100	0	52	7
501 ^a	63	5	0	0	0	0	63	5
MYH ^b	71	14	33	49	0	0	69	14
Multiple ^c	64	4	100	0	0	0	65	4
Subtotal	64	4	47	15	100	0	63	4
W								
408	43	8	60	13	0	0	46	7
501 ^a	61	8	0	0	0	0	61	8
MYH ^b	75	22	100	0	100	0	79	20
Multiple ^c	56	4	0	0	0	0	54	4
Subtotal	61	6	67	16	100	0	62	6
WA								
409	41	13	56	18	0	0	46	11
501 ^a	58	8	0	0	0	0	58	8
MYH ^b	59	21	0	0	0	0	56	21
Multiple ^c	74	2	0	0	0	0	74	2
Subtotal	58	7	28	20	0	0	57	7
Eastern YY^d								
501 ^a	57	4	0	0	0	0	57	4
MYH ^c	66	12	0	0	0	0	66	12
Multiple ^c	71	2	0	0	0	0	71	2
Subtotal	58	4	0	0	0	0	58	4
Unknown YY^e								
501 ^a	47	7	0	0	0	0	47	7
MYH ^b	77	13	67	49	0	0	76	13
Multiple ^c	53	7	0	0	0	0	53	7
Subtotal	55	7	62	46	0	0	55	7
Statewide								
Total	59	1	50	3	72	18	59	1

^aLicenses were valid on private lands only.

^bMentored Youth Hunts.

^cHunters that purchased multiple hunting licenses for multiple hunting areas.

^dIncluded Genesee, Lapeer, Macomb, Oakland, and St. Clair counties within Management Unit YY.

^eHunting activity occurred at unknown location within Management Unit YY.

Table 8. Number of hunters, hunting effort, harvest, hunter success, and hunter satisfaction during the 2013 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	57	17	306	129	16	7	28	12	53	15
Allegan	539	72	3,475	640	123	38	21	5	51	7
Antrim	219	38	1,134	247	60	22	23	7	55	9
Baraga	37	19	217	93	14	12	39	25	56	25
Barry	503	71	2,960	511	120	54	20	6	46	7
Bay	113	36	778	303	39	21	35	15	71	14
Berrien	333	59	3,004	692	90	32	27	8	53	9
Branch	225	54	1,254	387	65	33	25	10	69	11
Calhoun	452	76	2,969	686	128	46	24	7	60	8
Cass	311	58	2,529	653	82	36	21	8	49	9
Charlevoix	153	35	572	152	50	20	32	11	66	11
Cheboygan	140	31	610	159	55	23	34	11	50	12
Chippewa	55	17	323	107	25	14	45	16	80	11
Clinton	229	55	1,296	443	49	23	21	9	61	12
Delta	135	24	672	178	57	15	41	9	57	9
Dickinson	120	25	732	174	47	15	34	9	47	11
Eaton	395	71	2,573	617	87	33	22	7	58	9
Emmet	99	25	459	150	24	12	24	10	52	13
Genesee	480	79	2,787	597	165	48	33	8	51	8
Gogebic	53	14	352	111	28	12	44	13	60	13
Gratiot	302	62	2,233	641	116	45	31	9	63	10

^aNumber 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.

^bProportion 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 2013 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	321	64	1,582	407	92	34	29	9	62	10
Houghton	49	22	287	128	8	6	17	12	42	22
Huron	466	76	2,502	565	149	44	30	7	62	8
Ingham	437	73	2,475	566	138	43	31	8	57	8
Ionia	238	54	1,459	499	45	22	18	9	64	11
Iron	188	34	1,088	206	82	22	38	9	62	9
Isabella	330	63	1,796	448	93	34	28	9	62	9
Jackson	589	86	3,335	642	144	43	25	6	66	7
Kalamazoo	410	70	2,602	574	119	37	29	8	58	8
Kent	583	86	3,815	784	142	43	24	6	63	7
Keweenaw	2	3	20	29	0	0	0	0	0	0
Lapeer	744	96	4,366	771	227	58	28	6	60	6
Lenawee	446	76	2,356	547	93	35	20	7	65	8
Livingston	489	77	3,238	700	123	39	24	7	57	8
Luce	0	0	0	0	0	0	0	0	0	0
Mackinac	11	6	101	82	0	0	0	0	55	28
Macomb	243	56	1,306	368	62	31	24	10	58	11
Marquette	68	21	440	160	14	9	18	10	61	14
Mecosta	232	33	1,129	192	48	14	19	5	50	8
Menominee	170	33	1,098	264	71	22	40	10	67	9
Midland	381	67	2,186	492	150	46	37	9	61	9

^aNumber 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.

^bProportion 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 2013 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	360	65	2,358	630	86	32	24	8	55	9
Muskegon	254	55	1,443	421	86	37	29	10	53	11
Newaygo	497	53	3,032	356	154	28	30	5	62	5
Oakland	385	71	2,186	545	109	35	28	8	61	9
Oceana	204	33	1,053	185	54	15	25	6	58	8
Ontonagon	58	20	433	189	27	14	46	18	66	15
Otsego	172	31	806	196	27	12	16	6	40	9
Ottawa	422	71	2,800	630	125	39	29	8	63	8
Saginaw	579	86	3,566	696	189	53	30	7	55	8
St. Clair	601	88	3,557	695	160	49	25	6	59	7
St. Joseph	225	50	1,559	469	68	29	28	10	54	11
Sanilac	664	92	3,634	656	250	63	33	7	67	7
Schoolcraft	16	8	95	88	7	5	48	24	48	24
Shiawassee	333	66	1,965	518	112	43	30	9	50	10
Tuscola	624	87	3,943	758	236	58	35	7	61	7
Van Buren	354	64	2,304	543	86	30	23	8	50	9
Washtenaw	465	74	2,635	574	198	63	35	8	73	7
Unknown	1,124	110	5,630	725	215	47	19	4	54	5

^aNumber 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.

^bProportion of hunters that rated their hunting experience as excellent, very good, or good.