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2020 MICHIGAN SPRING TURKEY HUNTER SURVEY

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ABSTRACT

A survey of turkey hunters was conducted following the 2020 spring hunting season to determine turkey harvest and hunter participation. In 2020, licenses were purchased by 105,650 people, an increase of 22,578 license buyers (27% increase) from 2019. About 87,825 hunters harvested about 41,772 turkeys. Statewide, 48% of hunters harvested a turkey. Nearly 74% of the hunters rated their hunting experience as excellent, very good, or good in 2020. About 89% of the hunters reported they experienced no or only minor interference from other hunters. Compared to 2019, estimates of hunter numbers, hunting effort, and harvest increased significantly in 2020. Estimates of hunter success and hunter satisfaction also improved significantly between 2019 and 2020. In contrast, the proportions of hunters that indicated they experienced no or only minor interference with another hunter in 2020 declined from 2019 (i.e., a greater proportion of hunters indicated interference in 2020). The increased participation and harvest in 2020 likely reflected the effects of the COVID-19 pandemic and hunting regulation changes that occurred in 2020.

INTRODUCTION

Michigan's spring turkey (*Meleagris gallopavo*) hunting season was based originally on an area and quota system. This system was set up primarily to distribute hunters widely across geographic areas (management units) and time (hunt periods). As the turkey population has expanded statewide, additional license types were created that allowed hunters to hunt in multiple management units. The goal of the current system has been to provide hunting opportunities while maintaining acceptable levels of hunter satisfaction (Luukkonen 1998).



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In 2020, nearly the entire state was open for wild turkey hunting from April 18 through June 7 (Figure 1). The season extended into June for the first time in 2020. Other new regulation changes in 2020 included increasing the season length of Hunt 301 in Unit ZZ from 14 days to 44 days, reducing the number of quota hunt seasons but increasing the length of most of the remaining quota hunts by 7 to 16 days, extending some quota hunt seasons until June 7, and allowing hunters to hunt from raised platforms.

The area open for turkey hunting (58,114 square miles) was the same as last year. The statewide hunting area was divided into 13 management units (Figure 1). Hunting licenses were available on these management units for three types of hunts: (1) quota hunts with a limited number of licenses on both public and private lands in a specific management unit, (2) a quota hunt on private lands in southern Michigan [Hunt 301 in Unit ZZ], and (3) a guaranteed hunt [no quota] that included all units [Hunt 234], but it excluded public lands in the Southern Lower Peninsula [SLP].

People interested in obtaining a turkey hunting license could enter a random drawing (lottery) conducted by the Department of Natural Resources (DNR) or purchase a license not allocated through the lottery (i.e., left-over licenses and licenses for Hunt 234). Each applicant in the lottery could select up to two hunt choices (any combination of quota and unlimited quota hunts). The lottery consisted of two drawings. The first drawing was used to select applicants based on their preferred hunt choice. The second drawing was among applicants who were not successful in the first drawing and was based on the hunter's second choice for a hunt. Any licenses available after the drawing was completed were made available on a first-come, first-served basis to applicants that were unsuccessful in the drawing. Unsuccessful applicants could purchase one leftover license or a license for Hunt 234. Beginning one week after licenses were available to unsuccessful applicants, all remaining licenses were made available to non-applicants. Hunters could purchase one license and take one bearded turkey with the harvest tag issued with their license. Hunters could use a bow and arrow, crossbow, or shotgun with number 4 or smaller shot (including a muzzleloading shotgun) to hunt turkeys.

A limited number of licenses were available for quota hunts, and they were valid only in a certain management unit and only during a limited period (usually between 7-23 days, except for Hunts 110 and 301). Most quota hunts began before May 1 and lasted for 7-14 days. A private land management unit (Unit ZZ) was created in 2002 that included all private lands in southern Michigan or on Fort Custer military lands (Figure 1). Hunters who selected Hunt 301 could hunt from April 18-May 31 (44 days) anywhere on private lands in Unit ZZ. This unit and hunt period were created to provide additional hunting opportunities and increased flexibility for hunters who had difficulty finding time to hunt during shorter quota hunts.

Licenses for Hunt 234 could be used in any management unit. They were valid on public and private lands, except in Unit ZZ, where they were only valid on private lands or on Fort Custer military lands. Hunt 234 started later than most quota hunts but lasted for 30 days (May 2-31). Licenses for Hunt 234 were sold as a leftover license with no quota and could be purchased throughout the entire spring turkey hunting season.

The Pure Michigan Hunt (PMH) was a unique multi-species hunting opportunity offered for the first time in 2012. 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 turkey hunting licenses were valid for all areas open for hunting turkey and during all turkey hunting periods. Furthermore, the PMH license holder could hunt any season until their turkey harvest tag was filled.

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 legal species. A turkey kill tag issued under the mentored youth hunting license was valid for one turkey during any hunting period, in any open hunt unit, on private or public land. No application was required to purchase the mentored youth license.

The DNR and the Natural Resources Commission have the authority and responsibility to protect and manage the wildlife resources of the state of Michigan. Harvest surveys are a management tool used by the Wildlife Division to accomplish its statutory responsibility. Estimating harvest, hunting effort, and hunter satisfaction are the primary objectives of this survey.

METHODS

Following the 2020 spring turkey hunting season, a questionnaire (Appendix A) was sent to 15,442 randomly selected people that had purchased a turkey hunting license (mentored youth [<10 years old], junior resident [10-16], resident turkey [17-64], senior resident turkey [65+], nonresident turkey, and Pure Michigan hunting licenses). Sample size for each quota hunt was calculated to produce estimates of hunting success within 15% of the true proportion with 95% confidence. Sample size for each non-quota hunt was calculated to produce estimates within 5% of the true proportion.

Normally, the annual harvest survey would have been conducted immediately after the season had ended (i.e., June-October); however, the survey was delayed because of the COVID-19 pandemic. The 2020 survey data were collected during September-December.

Hunters receiving the questionnaire reported whether they hunted, the days spent afield, whether they harvested a turkey, type of device used while hunting (i.e., firearm, crossbow, or bow and arrow), and whether other hunters caused interference during their hunt (none, minor, some irritation, or major problem). Successful hunters were also asked to report where their turkeys were taken (public or private land), the date of harvest, and the beard length of the harvested bird. Birds with a beard less than six inches were classified as juveniles (one-year-old), while birds with longer beards were adults (two years old or greater; Kelly, 1975). Finally, hunters were asked to rate their

overall hunting experience (excellent, very good, good, fair, or poor), and indicate the status of the turkey population in their hunting area (increasing, decreasing, stable, or unknown).

Shortly before the hunting season began, restrictions were implemented statewide to limit the spread of the coronavirus disease (COVID-19), a new contagious respiratory disease that can cause serious illness or death of humans. Beginning in mid-March 2020, residents were urged to reduce in-person gatherings and limit non-essential travel. Also, in-person school learning (kindergarten through 12th grade) was suspended for the remainder of the school year, and non-essential workers were ordered to stay at home until June 1. In addition, turkey hunters were encouraged to hunt as close to home as possible. These COVID-19 regulations may have changed turkey hunting activity. Questions were added to this survey to determine how COVID-19 regulations may have changed hunting behavior; however, summaries of these questions are included in a separate report (Frawley 2021).

Estimates were calculated using a stratified random sampling design that included 18 strata (Cochran 1977). Hunters were stratified based on the management unit where their license was valid (13 management units). Hunters who purchased a license that could be used in multiple management units (mentored youth hunters, PMH license holders, and licenses for hunts 234 and 301) were treated as separate strata (strata 14-17). Moreover, people that had voluntarily reported information about their hunting activity via the internet were treated as a separate stratum (eighteenth stratum).

A 95% confidence limit (CL) was calculated for each estimate. This CL could be added to and subtracted from the estimate to calculate the 95% confidence interval. The confidence interval was a measure of the precision associated with the estimate and implies the true value would be within this interval 95 times out of 100. Estimates were based on information collected from random samples of hunting license buyers. Thus, these estimates were subject to sampling errors (Cochran 1977). Estimates were not adjusted for possible response or nonresponse biases.

Statistical tests are used routinely to determine the likelihood that 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 ($P < 0.05$), if the study had been repeated (Payton et al. 2003).

RESULTS AND DISCUSSION

Questionnaires were mailed initially during September 2020, and nonrespondents were mailed up to two follow-up questionnaires. Although 15,442 people were sent the questionnaire, 260 surveys were undeliverable resulting in an adjusted sample size of 15,182. Questionnaires were returned by 6,786 people, yielding a 45% adjusted response rate.

In 2020, licenses were purchased by 105,650 people, an increase of about 27% from 2019 (Table 1). About 46% of the licenses sold were for Hunt 301, 29% of the licenses were valid for a single unit (i.e., quota hunts), and 22% were for Hunt 234 (Figure 2). Among the hunters buying a license for a quota hunt (N=30,161), 33% purchased a license that was awarded in the drawing (N=9,828) and 67% purchased a left-over license (N=20,333) (Figure 3). More quota licenses were purchased as a left-over license than purchased by people that were awarded a quota license in the drawing. Overall, 9% of the licenses sold were awarded through the drawing process (i.e., 9,828 of 105,650 licenses).

The number of people buying a turkey hunting license in 2020 decreased by about 8% from ten years ago in 2010 (115,117 people purchased a license in 2010). There were generally more license buyers for age classes less than 35 years old in 2020, compared to 2010 (Figure 5). In contrast, there were generally fewer hunters between 35 and 70 years of age in 2020. Among hunters older than 70, hunter numbers were similar in 2010 and 2020. The increased participation among the youngest hunters reflected increased hunting participation because of the COVID-19 pandemic (Frawley 2021), new hunting regulations that were implemented in 2020, and the lowering of the minimum age requirement. In 2020, there was no minimum age limit to hunt turkeys; while hunters had to be at least 10 years old to participate in 2010. The decreased hunter numbers in the middle age classes likely reflect declining participation among the post-baby boom generations (i.e., born after 1964).

About 83% ($\pm 1\%$) of the license buyers hunted turkeys (87,825 hunters) (Table 2). Most of these active license buyers were males (80,026 \pm 1,120), although nearly 9% ($\pm 1\%$) of the hunters were females (7,799 \pm 680). The estimated number of active hunters in 2020 increased significantly by 29% from 2019 (87,825 in 2020 versus 68,110 in 2019). Counties listed in descending order with more than 2,500 hunters afield included Allegan, Lapeer, Kent, and Tuscola (Table 3).

Hunters spent an estimated 419,799 days afield pursuing turkeys (4.8 \pm 0.1 days per hunter) and harvested approximately 41,772 birds (Figure 6). Counties listed in descending order with hunters taking more than 1,200 turkeys included Allegan, Tuscola, Saginaw, and Kent (Table 3). About 48% of hunters harvested a turkey, which was the highest level of success ever recorded (Figure 7).

About 13% ($\pm 1\%$) of the harvested birds were juvenile males (5,580 \pm 605); 85% ($\pm 1\%$) were adult males (35,612 \pm 1,246), and about 1% were bearded females (271 \pm 123). Additionally, the age of a small number of harvested birds (<1%) was unknown (309 \pm 145) because hunters failed to report a beard length.

Hunting effort and the number of turkeys harvested were generally highest during the earliest hunting periods (Figures 8-11). For turkeys that the harvest date was known, 43% of these birds were taken during the first seven days (April 18-24). Daily hunter success generally was more than 10% from April 18 through May 6, and daily hunter success was generally below 10% during May 7-29. Hunting effort and harvest generally were greater on the weekends than on the weekdays.

About 83% of turkey hunters hunted solely on private land; 12% hunted on public land only, and 4% hunted on both private and public lands (Table 4). Of the 41,772 turkeys harvested in 2020, 91% \pm 1% were taken on private land (37,973 \pm 1,244 birds). About 9% \pm 1% of the harvest (3,707 \pm 468 birds) was taken on public land.

Sixteen percent of turkey hunters believed turkey numbers were increasing in their hunting area (Table 5); while, 47% thought turkey numbers were stable, 17% thought turkeys were decreasing; 18% of turkey hunters were uncertain about the status of turkeys, and 1% did not comment on the status of turkeys.

Hunter's satisfaction is one measure used to assess the turkey management program in Michigan. Of the estimated 87,825 people hunting turkeys in 2020, 76% \pm 1% of the hunters rated their hunting experience as either excellent (20,929 \pm 1,057 hunters), very good (21,295 \pm 1,072), or good (24,566 \pm 1,126) (Table 6). Nearly 16% \pm 1% of the hunters rated their experience as fair (13,678 \pm 883 hunters). Only 7% \pm 1% of the hunters rated their experience as poor (6,269 \pm 617 hunters). About 1% of the hunters (1,089 \pm 263 hunters) failed to rate their hunting experience.

Hunter's satisfaction is affected by many factors such as hunting success and whether hunting activities were completed without interference (Luukkonen 1998). In 2020, 72% \pm 1% of the hunters reported no hunter interference; 18% \pm 1% reported minor interference; 8% \pm 1% reported some irritation caused by hunter interference, and 2% reported that hunter interference was a major problem (Table 7).

Although interference can affect hunter satisfaction, hunter satisfaction was more closely associated with hunter success (Figures 12 and 13). Hunter's success and satisfaction were greatest for hunts beginning April 18 (Table 8).

Compared to 2019, estimates of hunter numbers, hunting effort, and harvest increased significantly in 2020 (Table 9). Estimates of hunter success and hunter satisfaction also increased significantly between 2019 and 2020. In contrast, the proportions of hunters that indicated they experienced no or only minor interference with another hunter in 2020 declined from 2019 (i.e., a greater proportion of hunters indicated interference in 2020) (Table 10). The changes between 2019 and 2020 that were noted at the statewide level were generally repeated in all regions, although not all changes were declared significantly different.

The increased participation and harvest likely reflected increased hunting participation because of the COVID-19 pandemic (Frawley 2021) and regulation changes that occurred in 2020. These regulation changes included (1) changing the opening day of all seasons from Monday to Saturday, (2) increasing the season length of Hunt 301 in Unit ZZ from 14 days to 44 days, (3) reducing the number of quota hunt seasons but increasing the length of most of the remaining quota hunts by 7 to 16 days, (4) extending some quota hunt seasons until June 7, and (5) allowing hunters to hunt from raised platforms.

Most hunters (90 \pm 1%) used firearms while hunting turkeys, although 6% \pm 1% of the hunters used archery equipment (compound, recurve, or longbows), and 6% \pm 1% used

a crossbow. Most hunters ($94\% \pm 1\%$) used a firearm to harvest their turkeys, while $3\% \pm 1\%$ used archery equipment, and $3\% \pm 1\%$ used a crossbow. About 49% of hunters using a firearm harvested a turkey, while 22% of hunters using a crossbow took a turkey, and 26% of hunters using another type of bow (longbows, recurve, or compound bows) took a turkey (Table 11).

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Table 1. The number of hunting licenses available and people applying for licenses during the 2020 Michigan spring turkey hunting season.

Management unit or hunt period	Licenses available (quota)	Number of eligible applicants ^a	Number of applicants successful in drawing	Number of licenses remaining after drawing	Number of licenses purchased by successful applicants ^b	Number of licenses purchased by unsuccessful applicants ^b	Number of licenses purchased by people not in the drawing ^b	Number of licensees ^b
Quota Hunt A	5,500	792	792	4,708	351	0	1,372	1,723
Quota Hunt B	1,000	9	9	991	3	0	24	27
Quota Hunt E	1,700	1,297	1,217	419	649	3	407	1,059
Quota Hunt F	5,000	2,373	2,373	2,624	1,197	0	1,509	2,706
Quota Hunt J	4,000	695	695	3,302	347	0	1,423	1,770
Quota Hunt K	8,500	5,643	5,444	2,889	3,312	2	2,178	5,492
Quota Hunt M	6,000	787	787	5,211	520	0	5,148	5,668
Quota Hunt ZA	4,800	949	949	3,848	675	1	2,579	3,255
Quota Hunt ZB	2,600	418	418	2,182	267	0	1,077	1,344
Quota Hunt ZC	2,400	835	835	1,562	667	0	1,369	2,036
Quota Hunt ZD	40	64	34	0	30	0	1	31
Quota Hunt ZE	2,000	1,236	1,093	781	885	1	770	1,656
Quota Hunt ZF	5,600	1,247	1,247	4,350	925	0	2,469	3,394
Hunt 234	NA	NA	NA	NA	823	11	22,806	23,640
Hunt 301	50,000	4,816	4,816	45,174	4,078	7	44,369	48,454
Pure MI Hunts	3	NA	NA	NA	NA	NA	NA	3
Mentored Hunts	NA	NA	NA	NA	NA	NA	NA	3,392
Statewide	99,143	21,161	20,709	78,041	14,729	25	87,501	105,650

^aNumber of eligible applicants selecting the management unit as their first choice to hunt.

^bIf a licensee purchased more than one license, only the latest purchase is included in the summary of licenses purchased.

Table 2. The number of hunters, hunting efforts, harvest, hunter success, hunter satisfaction, and hunter interference during the spring 2020 Michigan turkey hunting season.

Hunt type and management unit	Hunters total ^a	Hunters 95% CL	Hunting efforts (days) total ^a	Hunting efforts (days) 95% CL	Harvest total ^a	Harvest 95% CL	Hunter success %	Hunter success 95% CL	Hunter satisfaction % ^b	Hunter satisfaction 95% CL	Non-interfered hunters % ^c	Non-interfered hunters 95% CL
Quota Hunt A	1,547	81	6,775	831	656	130	42	8	77	7	89	5
Quota Hunt B	6	6	9	10	6	6	100	0	100	0	100	0
Quota Hunt E	837	65	2,848	373	436	78	52	8	77	7	95	4
Quota Hunt F	2,185	160	9,647	1,406	857	189	39	8	69	8	85	6
Quota Hunt J	1,411	110	5,836	830	670	133	47	9	73	8	86	6
Quota Hunt K	4,657	266	14,861	1,736	1,831	349	39	7	65	7	88	5
Quota Hunt M	4,049	375	25,360	4,291	2,170	403	54	9	82	7	89	5
Quota Hunt ZA	2,499	222	10,017	1,639	1,100	249	44	9	76	8	81	7
Quota Hunt ZB	1,149	75	4,168	744	448	100	39	8	72	8	90	5
Quota Hunt ZC	1,704	118	7,618	1,091	485	135	28	8	63	8	78	7
Quota Hunt ZD	24	4	107	24	7	4	29	16	79	14	86	12
Quota Hunt ZE	1,325	100	5,812	877	331	100	25	7	69	8	76	7
Quota Hunt ZF	2,760	197	11,041	1,524	1,022	232	37	8	76	7	73	7
Pure MI Hunt	1	0	6	0	1	0	100	0	100	0	100	0
All Quota hunts	24,154	614	104,105	5,696	10,021	718	41	3	73	2	84	2
Hunt 301 ZA	11,075	797	55,091	6,164	6,291	638	57	4	82	3	91	2
Hunt 301 ZB	4,418	547	20,501	3,445	2,565	425	58	6	83	5	93	3
Hunt 301 ZC	6,271	637	30,070	4,392	3,156	468	50	5	85	4	88	4
Hunt 301 ZD	611	212	3,685	1,579	305	150	50	17	70	16	90	10
Hunt 301 ZE	10,017	769	49,024	5,450	5,456	600	54	4	79	4	92	2
Hunt 301 ZF	10,383	779	54,684	6,061	5,884	620	55	4	80	3	90	3
Hunt 301 Unk.	753	235	3,420	1,561	0	0	0	0	46	16	92	9
All Hunt 301	42,672	616	216,475	9,260	23,657	949	55	2	81	2	91	1

^aNumber of hunters does not add up to the statewide total because mentored youth and hunters with licenses for hunts 234 and 301 can hunt in more than one unit. 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.

^cProportion of hunters that indicated they experienced no or only minor interference from other hunters.

Table 2 (continued). The number of hunters, hunting efforts, harvest, hunter success, hunter satisfaction, and hunter interference during the spring 2020 Michigan turkey hunting season.

Hunt type and management unit	Hunters total ^a	Hunters 95% CL	Hunting efforts (days) total ^a	Hunting efforts (days) 95% CL	Harvest total ^a	Harvest 95% CL	Hunter success %	Hunter success 95% CL	Hunter satisfaction % ^b	Hunter satisfaction 95% CL	Non-interfered hunters % ^c	Non-interfered hunters 95% CL
Hunt 234 A	759	186	3,780	1,212	120	75	16	9	54	12	91	7
Hunt 234 B	13	25	53	100	0	0	0	0	100	0	100	0
Hunt 234 E	1,797	280	7,907	1,760	772	188	43	8	76	7	94	4
Hunt 234 F	1,517	259	6,496	1,455	306	120	20	7	56	9	89	5
Hunt 234 J	958	209	4,819	1,467	266	112	28	10	60	11	94	5
Hunt 234 K	6,043	461	29,630	3,255	2,436	322	40	4	70	4	89	3
Hunt 234 M	306	120	1,171	532	133	79	43	19	70	18	96	8
Hunt 234 ZA	2,236	310	9,318	1,710	905	203	40	7	71	7	91	4
Hunt 234 ZB	519	155	2,369	1,024	213	100	41	15	79	12	95	7
Hunt 234 ZC	1,012	214	4,100	1,155	413	139	41	11	72	10	92	6
Hunt 234 ZD	200	97	546	353	93	66	47	24	80	19	100	0
Hunt 234 ZE	2,210	308	8,572	1,663	785	190	36	7	73	7	95	3
Hunt 234 ZF	1,824	282	8,106	1,675	626	170	34	8	69	7	96	3
Hunt 234 Unk.	240	106	1,318	818	0	0	0	0	56	22	94	10
All Hunt 234	18,622	432	88,184	4,449	7,068	484	38	2	69	2	92	1

^aNumber of hunters does not add up to the statewide total because mentored youth and hunters with licenses for hunts 234 and 301 can hunt in more than one unit. 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.

^cProportion of hunters that indicated they experienced no or only minor interference from other hunters.

Table 2 (continued). The number of hunters, hunting efforts, harvest, hunter success, hunter satisfaction, and hunter interference during the spring 2020 Michigan turkey hunting season.

Hunt type and management unit	Hunters total ^a	Hunters 95% CL	Hunting efforts (days) total ^a	Hunting efforts (days) 95% CL	Harvest total ^a	Harvest 95% CL	Hunter success %	Hunter success 95% CL	Hunter satisfaction % ^b	Hunter satisfaction 95% CL	Non-interfered hunters % ^c	Non-interfered hunters 95% CL
Mentored A	35	20	125	89	16	13	44	28	100	0	78	23
Mentored B	0	0	0	0	0	0	0	0	0	0	0	0
Mentored E	78	29	351	190	35	20	45	19	95	8	95	8
Mentored F	62	26	207	122	12	11	19	17	69	20	94	10
Mentored J	70	28	230	109	35	20	50	20	72	18	100	0
Mentored K	269	53	1,206	348	98	33	36	10	78	8	86	7
Mentored M	82	30	453	238	59	25	71	17	86	13	95	8
Mentored ZA	488	68	1,706	331	195	45	40	7	83	6	92	4
Mentored ZB	215	47	1,015	339	98	33	45	11	87	8	93	6
Mentored ZC	238	50	1,179	337	101	33	43	11	85	8	87	7
Mentored ZD	20	15	74	66	4	7	20	30	60	37	100	0
Mentored ZE	445	66	2,178	474	137	38	31	7	83	6	86	6
Mentored ZF	488	68	2,233	440	238	50	49	8	85	5	86	5
Mentored Unk	31	19	78	67	0	0	0	0	38	29	100	0
All Mentored	2,377	89	11,035	874	1,027	89	43	3	83	3	90	2
All hunts	87,825	975	419,799	11,779	41,772	1,288	48	1	76	1	89	1

^aNumber of hunters does not add up to the statewide total because mentored youth and hunters with licenses for hunts 234 and 301 can hunt in more than one unit. 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.

^cProportion of hunters that indicated they experienced no or only minor interference from other hunters.

Table 3. Estimated number of hunters, hunting effort, harvest, hunter success, hunter satisfaction, and hunter interference during the 2020 Michigan spring turkey hunting season. Estimates combined quota and unlimited quota hunts in each county.

County	Hunters total ^a	Hunters 95% CL	Hunting efforts (days) total ^a	Hunting efforts (days) 95% CL	Harvest total ^a	Harvest 95% CL	Hunter success %	Hunter success 95% CL	Hunter satisfaction % ^b	Hunter satisfaction 95% CL	Non-interfered hunters % ^c	Non-interfered hunters 95% CL
Alcona	845	194	3,463	968	242	105	29	11	65	11	96	5
Alger	114	111	571	690	0	0	0	0	57	47	100	0
Allegan	3,283	456	16,167	3,256	1,481	317	45	7	76	6	82	6
Alpena	515	140	2,732	950	202	89	39	14	69	14	93	8
Antrim	710	163	3,242	1,038	231	94	33	11	74	11	90	8
Arenac	643	154	2,478	745	289	102	45	12	86	8	92	7
Baraga	332	193	1,753	1,147	133	124	40	29	100	0	79	24
Barry	2,410	395	10,665	2,365	1,033	268	43	8	78	7	82	7
Bay	1,090	271	4,882	1,529	562	197	52	13	76	10	91	7
Benzie	283	135	1,261	638	98	85	35	24	60	23	80	17
Berrien	1,035	267	5,847	1,949	536	195	52	13	87	9	92	7
Branch	965	254	4,756	1,689	383	157	40	13	64	13	88	8
Calhoun	1,752	337	9,010	2,402	864	240	49	10	77	8	93	5
Cass	1,399	310	7,579	2,379	620	210	44	11	82	9	91	7
Charlevoix	418	123	1,207	441	212	89	51	16	75	14	97	5
Cheboygan	447	135	1,576	598	165	83	37	15	60	15	92	8
Chippewa	257	166	1,705	1,412	166	138	64	31	87	23	87	23
Clare	1,001	194	4,411	1,349	477	136	48	10	74	9	97	4
Clinton	1,476	318	6,857	2,369	809	240	55	11	80	9	84	8
Crawford	751	192	3,097	1,075	178	100	24	12	64	13	76	12
Delta	397	204	1,543	957	246	163	62	26	75	23	92	15

^aNumber of hunters does not add up to the 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.

^cProportion of hunters that indicated they experienced no or only minor interference from other hunters.

Table 3 (continued). Estimated number of hunters, hunting effort, harvest, hunter success, hunter satisfaction, and hunter interference during the 2020 Michigan spring turkey hunting season. Estimates combined quota and unlimited quota hunts in each county.

County	Hunters total ^a	Hunters 95% CL	Hunting efforts (days) total ^a	Hunting efforts (days) 95% CL	Harvest total ^a	Harvest 95% CL	Hunter success %	Hunter success 95% CL	Hunter satisfaction % ^b	Hunter satisfaction 95% CL	Non-interfered hunters % ^c	Non-interfered hunters 95% CL
Dickinson	455	220	1,982	1,134	179	141	39	24	83	19	86	18
Eaton	1,410	307	7,297	2,216	683	216	48	11	84	8	89	7
Emmet	316	111	1,463	900	93	60	29	16	64	18	81	14
Genesee	1,913	354	8,248	2,194	919	249	48	9	77	8	96	3
Gladwin	984	183	3,696	971	451	125	46	10	74	9	94	5
Gogebic	208	153	1,193	1,259	97	108	47	37	69	35	84	28
Gd. Traverse	628	216	2,699	1,180	246	144	39	18	70	15	92	8
Gratiot	1,222	289	4,493	1,448	684	220	56	12	74	11	88	8
Hillsdale	1,595	323	7,690	2,080	755	231	47	10	79	8	90	6
Houghton	455	220	2,531	1,443	272	175	60	25	86	15	83	19
Huron	1,478	290	6,776	1,777	704	210	48	10	82	7	93	5
Ingham	1,459	303	5,832	1,784	686	216	47	11	79	8	87	7
Ionia	1,703	343	6,887	1,731	672	216	39	10	72	9	84	8
Iosco	429	147	1,888	808	169	96	39	18	54	18	92	10
Iron	614	254	3,007	1,495	276	175	45	22	87	14	100	0
Isabella	1,433	310	6,435	2,172	667	213	47	11	76	9	92	6
Jackson	1,988	337	8,338	2,059	940	245	47	9	79	7	93	4
Kalamazoo	1,472	316	6,472	1,847	753	229	51	11	82	8	90	7
Kalkaska	535	176	1,826	662	155	99	29	15	69	16	89	11
Kent	2,548	412	12,122	2,657	1,209	292	47	8	82	6	88	5
Keweenaw	82	92	414	487	32	62	40	57	84	31	100	0

^aNumber of hunters does not add up to the 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.

^cProportion of hunters that indicated they experienced no or only minor interference from other hunters.

Table 3 (continued). Estimated number of hunters, hunting effort, harvest, hunter success, hunter satisfaction, and hunter interference during the 2020 Michigan spring turkey hunting season. Estimates combined quota and unlimited quota hunts in each county.

County	Hunters total ^a	Hunters 95% CL	Hunting efforts (days) total ^a	Hunting efforts (days) 95% CL	Harvest total ^a	Harvest 95% CL	Hunter success %	Hunter success 95% CL	Hunter satisfaction % ^b	Hunter satisfaction 95% CL	Non-interfered hunters % ^c	Non-interfered hunters 95% CL
Lake	1,354	300	5,066	1,332	411	172	30	11	66	11	86	8
Lapeer	2,551	395	11,800	2,467	1,127	273	44	8	77	7	83	6
Leelanau	369	163	1,648	821	138	103	37	22	48	22	63	21
Lenawee	1,326	295	6,323	2,034	619	210	47	11	75	10	94	6
Livingston	1,775	319	6,765	1,538	745	219	42	9	68	9	85	6
Luce	0	0	0	0	0	0	0	0	0	0	0	0
Mackinac	91	95	242	287	59	72	65	52	100	0	100	0
Macomb	1,140	274	4,328	1,397	561	199	49	12	84	9	88	8
Manistee	857	242	3,631	1,320	222	125	26	13	62	14	89	7
Marquette	419	213	2,060	1,252	175	140	42	26	66	25	85	19
Mason	853	226	3,514	1,090	405	160	47	13	80	11	89	8
Mecosta	1,174	261	4,568	1,244	461	159	39	11	75	10	92	7
Menominee	877	292	5,198	2,309	610	250	70	16	85	13	82	14
Midland	1,263	293	5,461	1,661	730	225	58	12	87	8	91	7
Missaukee	625	203	1,892	743	217	114	35	15	52	17	89	10
Monroe	741	219	3,962	1,559	377	160	51	15	70	14	92	9
Montcalm	1,876	356	8,654	2,488	945	257	50	10	77	8	86	7
Montmorency	606	149	2,430	735	183	84	30	12	67	13	76	11
Muskegon	1,400	300	5,089	1,576	753	223	54	11	78	9	90	7
Newaygo	2,209	367	8,992	2,071	918	251	42	9	76	8	91	5
Oakland	1,797	304	7,033	1,714	743	210	41	9	78	7	81	7

^aNumber of hunters does not add up to the 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.

^cProportion of hunters that indicated they experienced no or only minor interference from other hunters.

Table 3 (continued). Estimated number of hunters, hunting effort, harvest, hunter success, hunter satisfaction, and hunter interference during the 2020 Michigan spring turkey hunting season. Estimates combined quota and unlimited quota hunts in each county.

County	Hunters total ^a	Hunters 95% CL	Hunting efforts (days) total ^a	Hunting efforts (days) 95% CL	Harvest total ^a	Harvest 95% CL	Hunter success %	Hunter success 95% CL	Hunter satisfaction % ^b	Hunter satisfaction 95% CL	Non-interfered hunters % ^c	Non-interfered hunters 95% CL
Oceana	1,020	250	3,777	1,238	468	162	46	12	66	12	93	5
Ogemaw	880	203	3,436	1,002	282	122	32	12	69	12	88	8
Ontonagon	151	127	1,933	2,279	69	88	46	43	70	38	100	0
Osceola	882	237	3,084	1,049	369	163	42	14	79	11	85	11
Oscoda	664	181	2,647	895	196	102	30	13	71	13	80	11
Otsego	637	162	2,851	874	253	105	40	13	76	11	85	9
Ottawa	2,214	379	10,700	2,510	1,055	267	48	9	77	7	87	6
Presque Isle	564	144	2,699	844	202	88	36	13	71	13	91	8
Roscommon	831	201	3,080	900	188	102	23	11	63	12	91	8
Saginaw	2,316	396	9,409	2,363	1,282	302	55	9	84	7	95	4
St. Clair	1,930	351	9,988	2,537	783	229	41	9	86	6	83	7
St. Joseph	882	242	4,961	1,760	473	179	54	14	82	10	89	9
Sanilac	2,225	379	8,892	2,061	1,151	278	52	9	84	6	92	5
Schoolcraft	147	127	1,233	1,383	46	67	31	39	75	37	78	37
Shiawassee	1,731	343	9,694	3,010	851	244	49	10	85	7	92	6
Tuscola	2,535	381	11,896	2,564	1,439	299	57	8	77	7	92	4
Van Buren	1,719	345	6,601	1,916	868	249	50	10	81	8	94	5
Washtenaw	2,144	362	8,371	1,962	1,003	260	47	9	82	6	90	5
Wayne	90	70	234	209	32	36	36	35	83	26	100	0
Wexford	741	216	2,751	934	231	122	31	14	56	15	87	11
Unknown	3,487	475	16,820	3,312	561	189	16	5	56	7	87	5

^aNumber of hunters does not add up to the 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.

^cProportion of hunters that indicated they experienced no or only minor interference from other hunters.

Table 4. Estimated number and proportion of hunters hunting on private and public lands during the spring 2020 Michigan turkey hunting season.^a

Management unit	Private land only total	Private land only 95% CL	Private land only %	Private land only 95% CL	Public land only total	Public land only 95% CL	Public land only %	Public land only 95% CL	Both land types total	Both land types 95% CL	Both land types %	Both land types 95% CL	Unknown land total	Unknown land 95% CL	Unknown land %	Unknown land 95% CL
Quota Hunt A	1,055	130	68	8	281	99	18	6	188	83	12	5	23	31	2	2
Quota Hunt B	6	6	100	0	0	0	0	0	0	0	0	0	0	0	0	0
Quota Hunt E	594	79	71	8	179	59	21	7	50	34	6	4	14	18	2	2
Quota Hunt F	1,076	199	49	8	824	187	38	8	269	122	12	5	17	32	1	1
Quota Hunt J	1,017	135	72	8	215	90	15	6	179	83	13	6	0	0	0	0
Quota Hunt K	3,204	365	69	7	1,077	294	23	6	296	167	6	4	81	89	2	2
Quota Hunt M	2,753	414	68	8	680	269	17	6	615	258	15	6	0	0	0	0
Quota Hunt ZA	1,238	255	50	9	986	241	39	9	252	140	10	6	23	44	1	2
Quota Hunt ZB	545	105	47	9	516	104	45	9	78	50	7	4	10	18	1	2
Quota Hunt ZC	609	146	36	8	914	158	54	9	152	84	9	5	28	37	2	2
Quota Hunt ZD	14	5	57	17	9	4	36	17	0	0	0	0	2	2	7	9
Quota Hunt ZE	374	104	28	8	919	124	69	8	32	34	2	3	0	0	0	0
Quota Hunt ZF	1,165	240	42	8	1,309	246	47	8	245	131	9	5	41	55	1	2
Pure MI Hunt	1	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0
All Quota hunts	13,650	743	57	3	7,908	621	33	2	2,357	414	10	2	238	130	1	1
Hunt 301 ZA	11,075	797	100	0	0	0	0	0	0	0	0	0	0	0	0	0
Hunt 301 ZB	4,418	547	100	0	0	0	0	0	0	0	0	0	0	0	0	0
Hunt 301 ZC	6,271	637	100	0	0	0	0	0	0	0	0	0	0	0	0	0
Hunt 301 ZD	611	212	100	0	0	0	0	0	0	0	0	0	0	0	0	0
Hunt 301 ZE	10,017	769	100	0	0	0	0	0	0	0	0	0	0	0	0	0
Hunt 301 ZF	10,383	779	100	0	0	0	0	0	0	0	0	0	0	0	0	0
Hunt 301 Unk.	753	235	100	0	0	0	0	0	0	0	0	0	0	0	0	0
All Hunt 301	42,672	616	100	0	0	0	0	0	0	0	0	0	0	0	0	0

^aRow totals may not equal 100 because of rounding errors.

Table 4 (continued). Estimated number and proportion of hunters hunting on private and public lands during the spring 2020 Michigan turkey hunting season.^a

Management unit	Private land only total	Private land only 95% CL	Private land only %	Private land only 95% CL	Public land only total	Public land only 95% CL	Public land only %	Public land only 95% CL	Both land types total	Both land types 95% CL	Both land types %	Both land types 95% CL	Unknown land total	Unknown land 95% CL	Unknown land %	Unknown land 95% CL
Hunt 234 A	559	161	74	11	160	87	21	10	40	43	5	6	0	0	0	0
Hunt 234 B	0	0	0	0	13	25	100	0	0	0	0	0	0	0	0	0
Hunt 234 E	1,384	248	77	7	280	114	16	6	120	75	7	4	13	25	1	1
Hunt 234 F	666	175	44	9	666	175	44	9	173	90	11	6	0	0	0	0
Hunt 234 J	586	164	61	11	226	103	24	9	146	83	15	8	0	0	0	0
Hunt 234 K	3,993	396	66	4	1,304	241	22	4	719	182	12	3	0	0	0	0
Hunt 234 M	186	94	61	19	106	71	35	19	13	25	4	8	0	0	0	0
Hunt 234 ZA ^b	2,236	310	100	0	0	0	0	0	0	0	0	0	0	0	0	0
Hunt 234 ZB ^b	519	155	100	0	0	0	0	0	0	0	0	0	0	0	0	0
Hunt 234 ZC ^b	1,012	214	100	0	0	0	0	0	0	0	0	0	0	0	0	0
Hunt 234 ZD ^b	200	97	100	0	0	0	0	0	0	0	0	0	0	0	0	0
Hunt 234 ZE ^b	2,210	308	100	0	0	0	0	0	0	0	0	0	0	0	0	0
Hunt 234 ZF ^b	1,824	282	100	0	0	0	0	0	0	0	0	0	0	0	0	0
Hunt 234 Unk.	173	90	72	20	13	25	6	10	0	0	0	0	53	50	22	18
All Hunt 234	14,748	512	79	2	2,329	315	13	2	1,478	256	8	1	67	56	0	0

^aRow totals may not equal 100 because of rounding errors.

^bLicenses for the unlimited quota hunt were valid only on private lands in Management Unit ZZ in southern Michigan (Figure 1).

^cNumber of hunters does not add up to the statewide total because hunters can hunt in more than one unit for the unlimited quota hunts.

Table 4 (continued). Estimated number and proportion of hunters hunting on private and public lands during the spring 2020 Michigan turkey hunting season.^a

Management unit	Private land only total	Private land only 95% CL	Private land only %	Private land only 95% CL	Public land only total	Public land only 95% CL	Public land only %	Public land only 95% CL	Both land types total	Both land types 95% CL	Both land types %	Both land types 95% CL	Unknown land total	Unknown land 95% CL	Unknown land %	Unknown land 95% CL
Mentored A	35	20	100	0	0	0	0	0	0	0	0	0	0	0	0	0
Mentored B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mentored E	70	28	90	11	4	7	5	8	4	7	5	8	0	0	0	0
Mentored F	55	25	88	14	8	9	13	14	0	0	0	0	0	0	0	0
Mentored J	55	25	78	17	12	11	17	15	4	7	6	9	0	0	0	0
Mentored K	199	46	74	9	51	24	19	8	20	15	7	5	0	0	0	0
Mentored M	55	25	67	17	16	13	19	14	8	9	10	11	4	7	5	8
Mentored ZA	457	66	94	4	20	15	4	3	8	9	2	2	0	0	0	0
Mentored ZB	207	47	96	4	4	7	2	3	0	0	0	0	4	7	2	3
Mentored ZC	215	47	90	6	16	13	7	5	8	9	3	4	0	0	0	0
Mentored ZD	20	15	100	0	0	0	0	0	0	0	0	0	0	0	0	0
Mentored ZE	410	63	92	4	12	11	3	3	20	15	4	3	4	7	1	1
Mentored ZF	429	65	88	5	43	22	9	4	16	13	3	3	0	0	0	0
Mentored Unk	23	16	75	26	0	0	0	0	4	7	13	20	4	7	13	20
All Mentored	2,100	95	88	2	144	39	6	2	117	36	5	1	16	13	1	1
All hunts ^c	73,123	1,097	83	1	10,365	697	12	1	3,952	488	4	1	389	151	0	0

^aRow totals may not equal 100 because of rounding errors.

^bLicenses for the unlimited quota hunt were valid only on private lands in Management Unit ZZ in southern Michigan (Figure 1).

^cNumber of hunters does not add up to the statewide total because hunters can hunt in more than one unit for the unlimited quota hunts.

Table 5. Status of turkey population reported by turkey hunters during the spring 2020 Michigan turkey hunting season.^a

Management unit	Turkey population increasing	Turkey population decreasing	Turkey population stable	Turkey population unknown	Turkey population no answer
Quota Hunt A	18	18	42	19	2
Quota Hunt B	50	0	50	0	0
Quota Hunt E	18	21	43	18	0
Quota Hunt F	20	18	42	20	1
Quota Hunt J	13	26	36	25	1
Quota Hunt K	12	23	48	16	1
Quota Hunt M	27	19	34	19	0
Quota Hunt ZA	14	14	50	22	1
Quota Hunt ZB	18	16	42	24	1
Quota Hunt ZC	14	15	39	30	2
Quota Hunt ZD	14	14	43	29	0
Quota Hunt ZE	9	17	43	28	3
Quota Hunt ZF	13	12	50	24	1
Pure MI Hunt	0	0	100	0	0
All Quota hunts	16	18	43	21	1
Hunt 301 ZA	14	19	53	13	1
Hunt 301 ZB	22	13	48	15	2
Hunt 301 ZC	17	10	52	19	2
Hunt 301 ZD	23	23	40	13	0
Hunt 301 ZE	19	16	49	15	1
Hunt 301 ZF	18	16	49	16	1
Hunt 301 Unk.	16	14	41	24	5
All Hunt 301	18	15	50	16	1

^aRow totals may not equal 100 because of rounding errors.

Table 5 (continued). Status of turkey population reported by turkey hunters during the spring 2020 Michigan turkey hunting season.^a

Management unit	Turkey population increasing	Turkey population decreasing	Turkey population stable	Turkey population unknown	Turkey population no answer
Hunt 234 A	7	30	37	26	0
Hunt 234 B	0	0	0	100	0
Hunt 234 E	15	14	55	16	1
Hunt 234 F	10	25	39	26	1
Hunt 234 J	7	32	42	19	0
Hunt 234 K	12	25	44	17	1
Hunt 234 M	4	13	26	57	0
Hunt 234 ZA	13	14	49	24	1
Hunt 234 ZB	18	13	41	26	3
Hunt 234 ZC	20	14	46	20	0
Hunt 234 ZD	27	7	47	20	0
Hunt 234 ZE	17	11	45	27	0
Hunt 234 ZF	18	15	49	18	0
Hunt 234 Unk.	17	22	28	33	0
All Hunt 234	14	19	45	21	1
Mentored A	0	11	44	44	0
Mentored B	0	0	0	0	0
Mentored E	30	5	50	10	5
Mentored F	13	13	50	25	0
Mentored J	33	17	17	33	0
Mentored K	10	23	42	23	1
Mentored M	43	5	24	29	0
Mentored ZA	11	11	58	20	0
Mentored ZB	22	18	31	29	0
Mentored ZC	15	15	44	26	0
Mentored ZD	40	20	40	0	0
Mentored ZE	12	18	51	16	4
Mentored ZF	14	11	53	22	1
Mentored Unk	13	38	25	25	0
All Mentored	16	14	46	23	1
All hunts ^b	16	17	47	18	1

^aRow totals may not equal 100 because of rounding errors.

^bStatewide mean interference levels (all hunts and periods).

Table 6. How hunters rated their hunting experience during the spring 2020 Michigan turkey hunting season.^a

Management unit	Satisfaction excellent	Satisfaction very good	Satisfaction good	Satisfaction fair	Satisfaction poor	Satisfaction no answer
Quota Hunt A	23	27	27	14	8	2
Quota Hunt B	0	50	50	0	0	0
Quota Hunt E	30	27	20	15	9	0
Quota Hunt F	15	21	33	16	13	2
Quota Hunt J	21	24	28	18	8	1
Quota Hunt K	17	23	26	20	13	1
Quota Hunt M	23	28	30	14	5	0
Quota Hunt ZA	14	26	37	18	3	3
Quota Hunt ZB	19	27	25	22	5	1
Quota Hunt ZC	11	24	28	26	10	2
Quota Hunt ZD	14	29	36	21	0	0
Quota Hunt ZE	15	22	32	19	7	6
Quota Hunt ZF	23	17	36	16	7	1
Pure MI Hunt	0	0	100	0	0	0
All Quota hunts	19	24	30	18	8	1
Hunt 301 ZA	25	31	26	13	5	1
Hunt 301 ZB	33	26	24	11	4	2
Hunt 301 ZC	31	26	29	8	5	2
Hunt 301 ZD	27	20	23	17	13	0
Hunt 301 ZE	29	24	26	15	6	1
Hunt 301 ZF	26	25	29	14	5	1
Hunt 301 Unk.	14	5	27	32	14	8
All Hunt 301	28	26	27	13	5	1

^aRow totals may not equal 100 because of rounding errors.

Table 6 (continued). How hunters rated their hunting experience during the spring 2020 Michigan turkey hunting season.^a

Management unit	Satisfaction excellent	Satisfaction very good	Satisfaction good	Satisfaction fair	Satisfaction poor	Satisfaction no answer
Hunt 234 A	9	14	32	28	18	0
Hunt 234 B	0	0	100	0	0	0
Hunt 234 E	19	23	33	16	8	0
Hunt 234 F	13	17	26	22	22	0
Hunt 234 J	18	15	26	26	14	0
Hunt 234 K	19	23	28	19	9	1
Hunt 234 M	22	30	17	22	9	0
Hunt 234 ZA	24	24	23	19	8	1
Hunt 234 ZB	23	21	36	13	5	3
Hunt 234 ZC	24	30	18	18	7	3
Hunt 234 ZD	47	7	27	13	7	0
Hunt 234 ZE	26	22	25	17	9	1
Hunt 234 ZF	21	14	34	18	10	2
Hunt 234 Unk.	6	17	33	28	17	0
All Hunt 234	20	21	28	19	11	1
Mentored A	33	56	11	0	0	0
Mentored B	0	0	0	0	0	0
Mentored E	40	30	25	0	0	5
Mentored F	13	13	44	31	0	0
Mentored J	28	33	11	28	0	0
Mentored K	26	17	35	13	6	3
Mentored M	33	33	19	5	5	5
Mentored ZA	29	32	22	13	2	2
Mentored ZB	40	20	27	9	4	0
Mentored ZC	30	26	30	11	3	0
Mentored ZD	40	0	20	0	20	20
Mentored ZE	31	21	32	12	2	3
Mentored ZF	32	26	27	14	0	1
Mentored Unk	0	13	25	50	13	0
All Mentored	31	25	28	13	2	1
All hunts ^b	24	24	28	16	7	1

^aRow totals may not equal 100 because of rounding errors.

^bStatewide mean satisfaction levels (all hunts and periods).

Table 7. The estimated amount of hunter interference experienced by turkey hunters during the spring 2020 Michigan turkey hunting season.^a

Management unit	Inter- ference none	Inter- ference minor	Inter- ference some irritation	Inter- ference major problem	Inter- ference no answer
Quota Hunt A	74	14	8	1	2
Quota Hunt B	100	0	0	0	0
Quota Hunt E	78	17	3	2	0
Quota Hunt F	68	17	8	5	1
Quota Hunt J	69	17	8	3	3
Quota Hunt K	70	18	10	1	1
Quota Hunt M	72	17	10	0	1
Quota Hunt ZA	52	28	16	4	0
Quota Hunt ZB	63	27	8	1	1
Quota Hunt ZC	55	23	15	5	2
Quota Hunt ZD	43	43	14	0	0
Quota Hunt ZE	44	31	18	3	3
Quota Hunt ZF	50	23	19	6	2
Pure MI Hunt	100	0	0	0	0
All Quota hunts	64	21	12	3	1
Hunt 301 ZA	74	16	6	3	1
Hunt 301 ZB	76	16	6	1	1
Hunt 301 ZC	71	17	9	1	2
Hunt 301 ZD	60	30	10	0	0
Hunt 301 ZE	77	14	7	1	1
Hunt 301 ZF	72	18	7	2	1
Hunt 301 Unk.	81	11	3	0	5
All Hunt 301	74	17	7	1	1

^aRow totals may not equal 100 because of rounding errors.

Table 7 (continued). The estimated amount of hunter interference experienced by turkey hunters during the spring 2020 Michigan turkey hunting season.^a

Management unit	Inter- ference none	Inter- ference minor	Inter- ference some irritation	Inter- ference major problem	Inter- ference no answer
Hunt 234 A	72	19	9	0	0
Hunt 234 B	100	0	0	0	0
Hunt 234 E	77	17	6	0	0
Hunt 234 F	71	18	8	3	0
Hunt 234 J	79	15	4	1	0
Hunt 234 K	69	20	9	2	1
Hunt 234 M	87	9	4	0	0
Hunt 234 ZA	83	8	7	2	1
Hunt 234 ZB	87	8	3	0	3
Hunt 234 ZC	84	8	7	1	0
Hunt 234 ZD	87	13	0	0	0
Hunt 234 ZE	83	12	4	1	0
Hunt 234 ZF	78	18	1	2	1
Hunt 234 Unk.	78	17	6	0	0
All Hunt 234	77	15	6	1	0
Mentored A	67	11	11	11	0
Mentored B	0	0	0	0	0
Mentored E	75	20	0	0	5
Mentored F	81	13	6	0	0
Mentored J	78	22	0	0	0
Mentored K	70	16	9	4	1
Mentored M	67	29	5	0	0
Mentored ZA	77	15	4	3	1
Mentored ZB	73	20	5	2	0
Mentored ZC	66	21	10	3	0
Mentored ZD	80	20	0	0	0
Mentored ZE	68	18	9	3	3
Mentored ZF	66	21	10	4	0
Mentored Unk	100	0	0	0	0
All Mentored	72	18	7	3	1
All hunts ^b	72	17	8	2	1

^aRow totals may not equal 100 because of rounding errors.

^bStatewide mean interference levels (all hunts and periods).

Table 8. Estimated number of hunting efforts, hunters, hunting success, noninterfered hunters, and hunter rating of the 2020 spring turkey hunting season, by hunt periods.

Variable	Hunt start April 18 estimate	Hunt start April 18 95% CL	Hunt start April 25 estimate	Hunt start April 25 95% CL	Hunt start May 1 estimate	Hunt start May 1 95% CL	Hunt start May 9 estimate	Hunt start May 9 95% CL	All hunts ^a estimate	All hunts 95% CL
Hunting efforts (days)	298,009	10,726	20,762	2,466	88,184	4,449	12,844	2,246	419,799	11,779
Number of hunters	60,685	933	5,743	526	18,622	432	2,775	363	87,825	975
Successful hunters (n)	32,044	1,151	1,919	355	7,068	484	741	216	41,772	1,288
Successful hunters (%)	53	2	33	5	38	2	27	7	48	1
Noninterfered hunters (n) ^b	54,012	1,038	4,867	503	17,198	471	2,327	339	78,403	1,146
Noninterfered hunters (%) ^b	89	1	85	4	92	1	84	6	89	1
Favorable rating (n) ^c	47,982	1,112	4,069	476	12,792	527	1,947	320	66,790	1,260
Favorable rating (%) ^c	79	1	71	5	69	2	70	7	76	1

^aRow totals may not equal totals for all periods because of rounding errors.

^bProportion of hunters that indicated they experienced no or only minor interference from other hunters.

^cHunters rating their hunting experience as excellent, very good, or good.

Table 9. Comparison of the estimated number of hunters, hunting effort, and harvest between 2019 and 2020 Michigan spring turkey hunting seasons, summarized by regions.

Region ^a	2019 hunt- er ^b total	2019 hunt- er 95% CL	2020 hunt- er ^b total	2020 hunt- er 95% CL	Hunter differ- ence (%)	2019 Hunting efforts (days) total	2019 Hunt- ing effort s 95% CL	2020 Hunting efforts total	2020 Hunt- ing efforts 95% CL	Hunt- ing effort differ- ence (%)	2019 har- vest total	2019 har- vest 95% CL	2020 har- vest total	2020 har- vest 95% CL	Har- vest differ- ence (%)
UP	3,537	294	4,229	405	20	17,148	2,603	25,363	4,236	48*	1,737	294	2,362	411	36
NLP	19,819	614	21,246	652	7*	75,775	3,800	91,103	4,737	20*	7,271	519	8,348	592	15
SLP	42,860	746	59,780	915	39*	161,707	5,371	286,513	10,085	77*	20,952	746	30,501	1,088	46*
Unknown	2,405	336	3,487	475	45*	8,900	1,494	16,820	3,312	89*	402	139	561	189	39*
Total	68,110	761	87,825	975	29*	263,531	6,574	419,799	11,779	59*	30,362	927	41,772	1,288	38*

^aRegions included the Upper Peninsula (UP), the Northern Lower Peninsula north of Management Unit ZZ (NLP), and Management Unit ZZ in the Southern Lower Peninsula (SLP).

^bNumber of hunters did not add up to the statewide total because mentored youth and hunters with a license for the unlimited quota hunt can hunt in more than one unit.

*P<0.05.

Table 10. Comparison of estimated hunter success, hunter satisfaction, and hunt interference between 2019 and 2020 Michigan spring turkey hunting season, summarized by regions.

Region ^a	2019 hunter success		2020 hunter success		Hunter success difference (%)	2019 hunter satisfaction		2020 hunter satisfaction		Hunter satisfaction ^b difference (%)	2019 non-interfered hunters ^c		2020 non-interfered hunters ^c		Non-interfered hunters ^c difference (%)
	%	95% CL	%	95% CL		%	95% CL	%	95% CL		%	95% CL	%	95% CL	
UP	49	7	56	8	7	74	6	81	6	8	94	4	90	5	-4
NLP	37	2	39	3	3	68	2	69	2	1	93	1	90	2	-4*
SLP	49	2	51	2	2	77	1	79	1	2	93	1	89	1	-4*
Total	45	1	48	1	3*	74	1	76	1	2*	93	1	89	1	-4*

^aRegions included the Upper Peninsula (UP), the Northern Lower Peninsula north of Management Unit ZZ (NLP), and Management Unit ZZ in the Southern Lower Peninsula (SLP).

^bHunters rating their hunting experience as excellent, very good, or good.

^cProportion of hunters that indicated they experienced no or only minor interference from other hunters.

*P<0.05.

Table 11. The number of turkeys harvested and hunter success, summarized by hunting device, during the spring turkey hunting season in Michigan, 2010-2020.

Year	Firearm harvest total	Fire-arm harvest 95% CL	Cross-bow harvest total	Cross-bow harvest 95% CL	Other bows ^a Total	Other bows ^a 95% CL	Un-known device total	Un-known device 95% CL	Fire-arm success ^b %	Fire-arm success 95% CL	Cross-bow success ^b %	Cross-bow success 95% CL	Other bows ^a success ^b %	Other bows ^a success 95% CL
2010	34,984	1,093	525	161	1,519	279	22	32	41	1	20	6	20	3
2011	28,831	1,017	590	170	1,143	228	23	34	37	1	17	5	17	3
2012	29,611	984	650	172	1,055	214	62	57	39	1	17	4	18	3
2013	30,152	1,038	921	210	1,090	231	80	76	39	1	22	5	18	4
2014	27,746	919	516	143	838	195	9	13	41	1	17	4	21	4
2015	28,272	908	751	188	935	196	81	63	43	1	20	5	21	4
2016	28,422	959	860	200	963	221	142	87	42	1	21	4	21	4
2017	29,389	964	869	194	748	183	2,427	171	43	1	22	4	17	4
2018	24,923	909	905	203	780	206	2,956	244	40	1	21	4	20	5
2019	25,616	906	848	187	741	182	3,156	236	41	1	19	4	24	5
2020	39,200	1,277	1,151	269	1,311	299	111	90	49	1	22	5	26	5

^aIncluded longbows, recurve, and compound bows.

^bHunters harvesting a turkey.

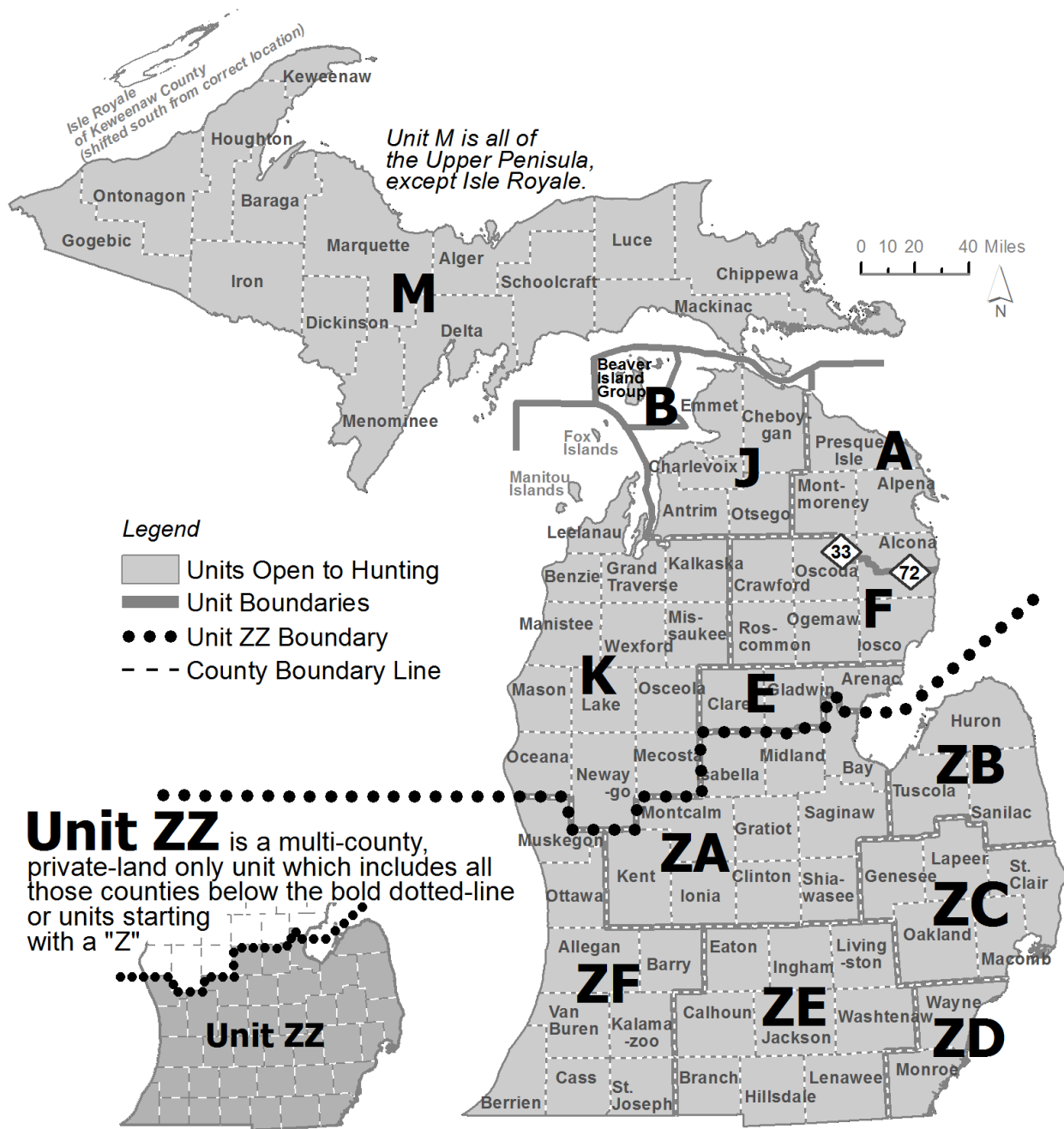


Figure 1. Management units in Michigan open to spring turkey hunting in 2020.

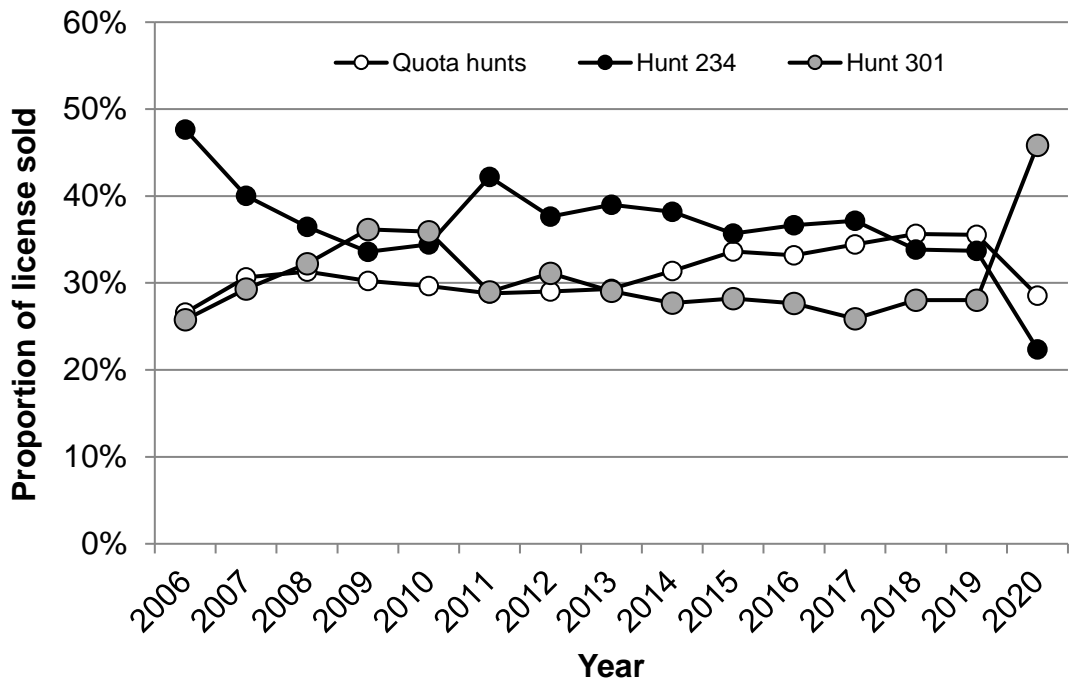


Figure 2. The proportion of spring turkey hunting licenses sold during 2006-2020, summarized separately for license type (quota hunts, Hunt 234, and Hunt 301).

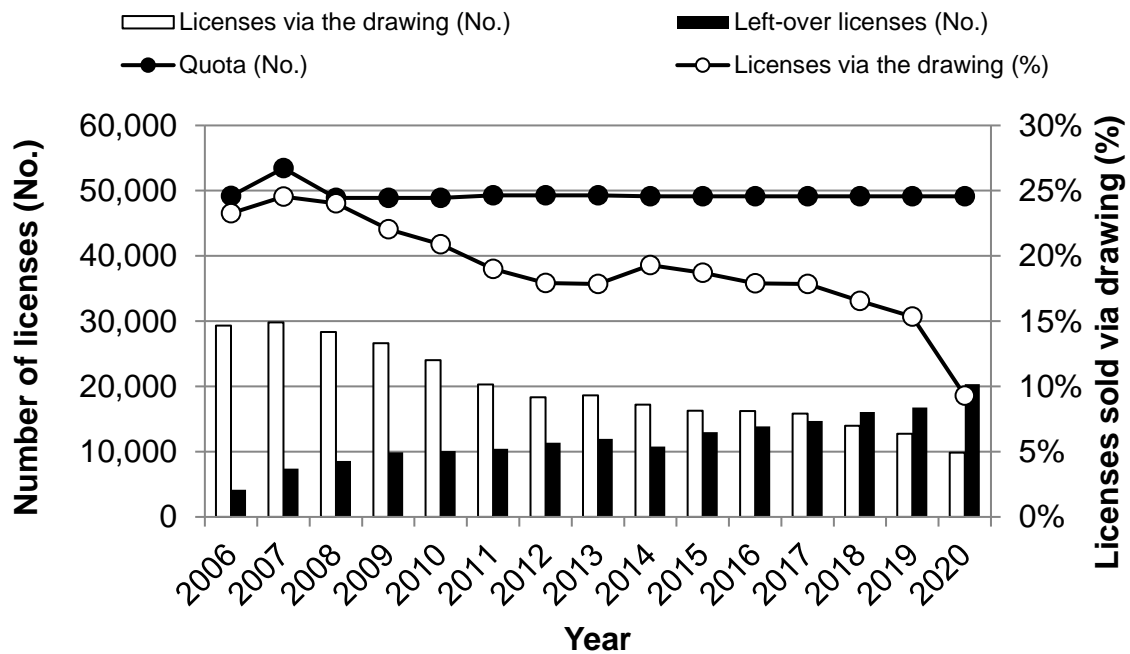


Figure 3. The number of spring turkey hunting licenses available for quota hunts (excluded licenses for hunts 234 and 301, mentored youth licenses and Pure Michigan hunts), the number of quota hunt licenses sold via the drawing, the number of quota hunt licenses sold as left-over licenses, and the proportion of all licenses sold through the drawing during 2006-2020.

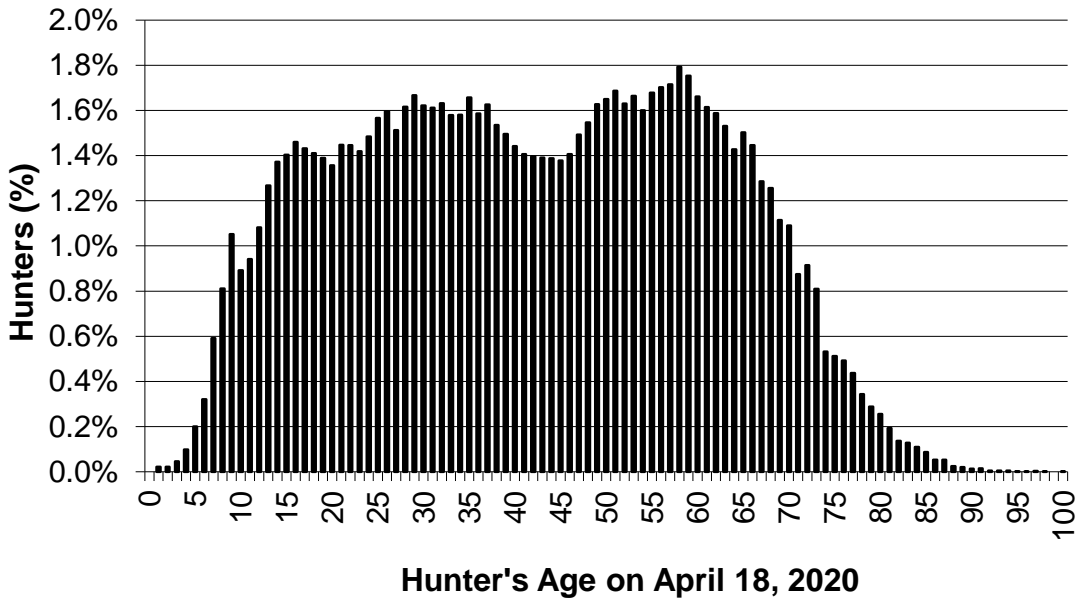


Figure 4. Age of people that purchased a turkey hunting license in Michigan for the 2020 spring hunting season (mean = 45 years). Licenses were purchased by 105,650 people.

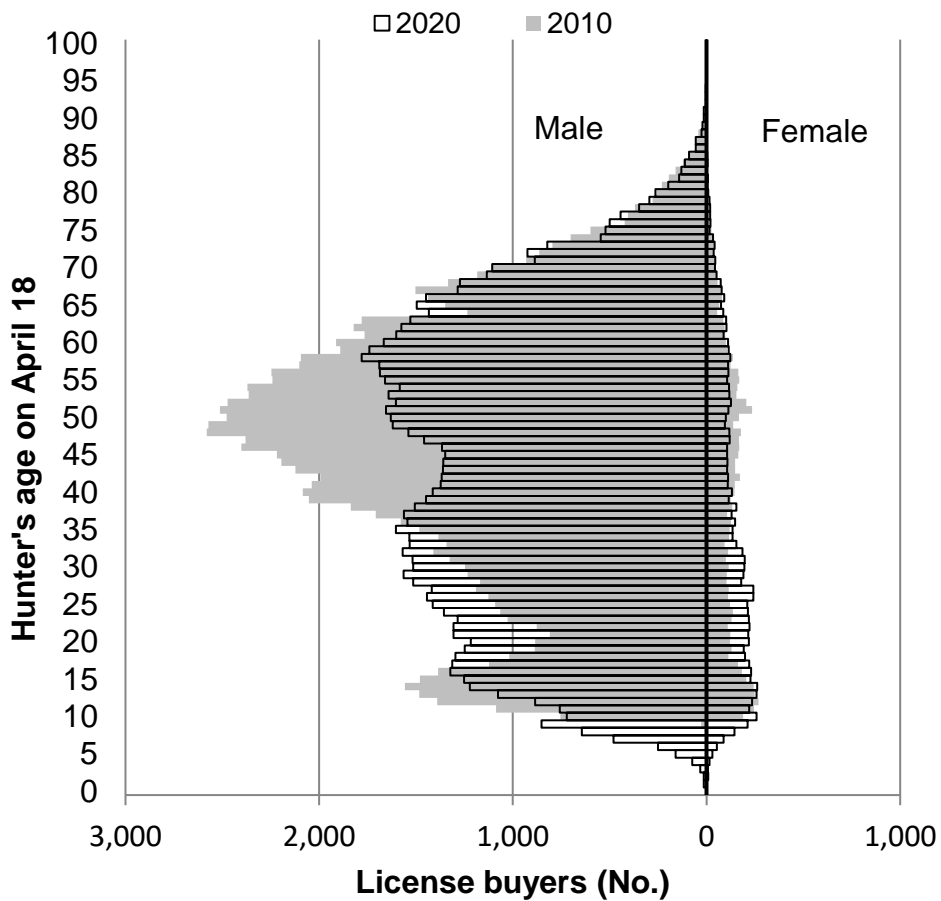


Figure 5. The number of spring turkey hunting license buyers in Michigan by age and sex during 2009 and 2020 hunting seasons. The number of people buying a license was 120,773 in 2009 and 105,650 in 2020.

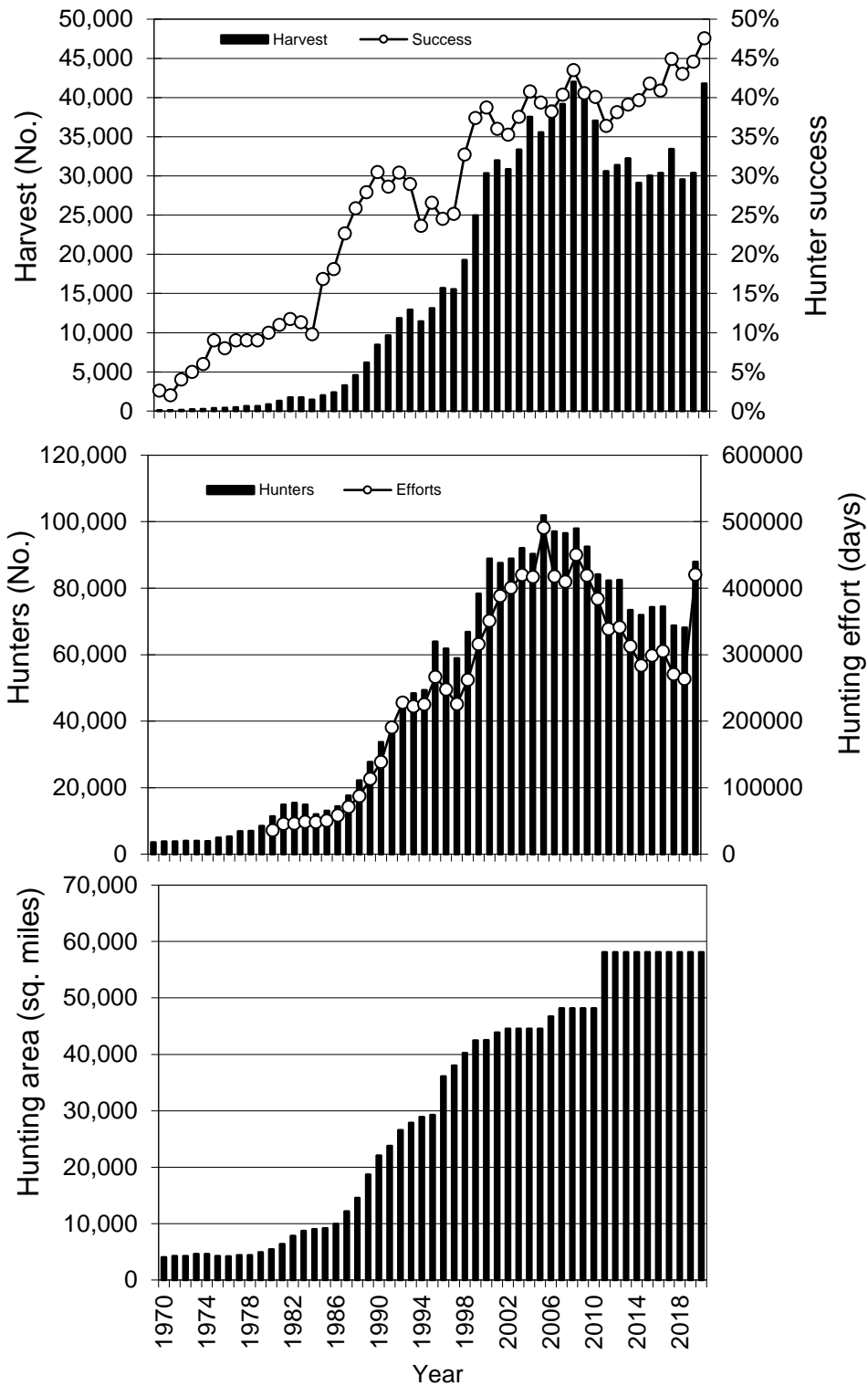


Figure 6. Estimated number of hunters, harvest, hunting efforts, hunter success, and area open to hunting during the Michigan spring turkey hunting season, 1970-2020. Estimates of hunting effort generally were not available before 1981.

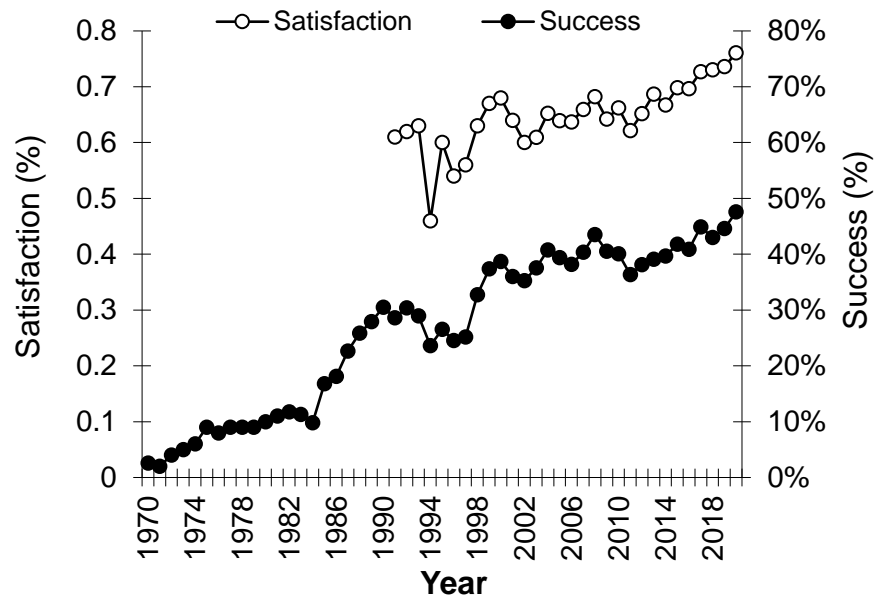


Figure 7. Estimated hunter success and satisfaction during the Michigan spring turkey hunting season, 1970-2020. Estimates of satisfaction were not available before 1991.

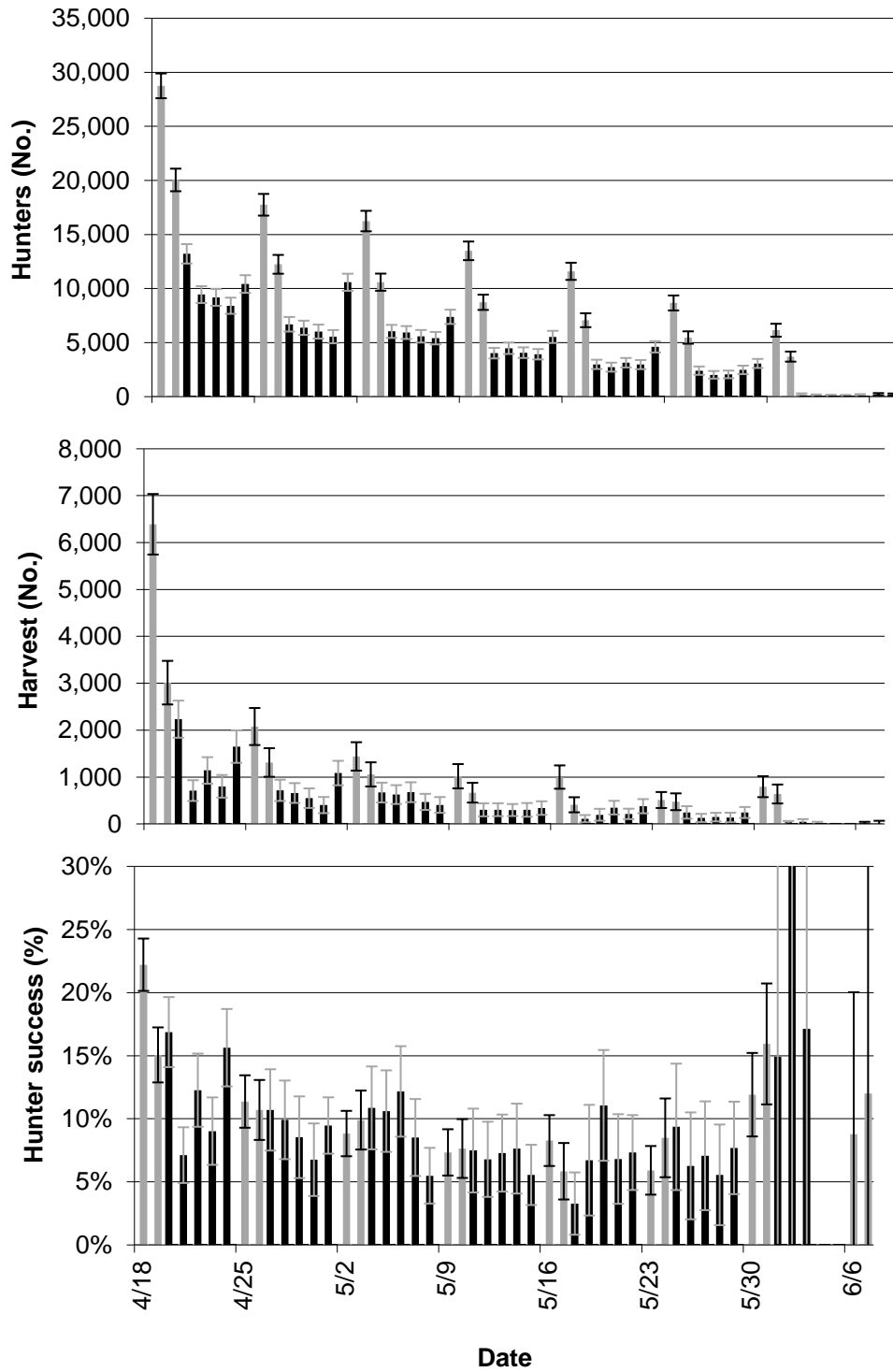


Figure 8. Estimated number of hunters, harvest, and hunter success by date during the 2020 Michigan spring turkey hunting season (includes all hunts). An additional $1,907 \pm 292$ birds were taken on unknown dates. Gray-shaded bars indicate weekends. Vertical bars represent the 95% confidence interval.

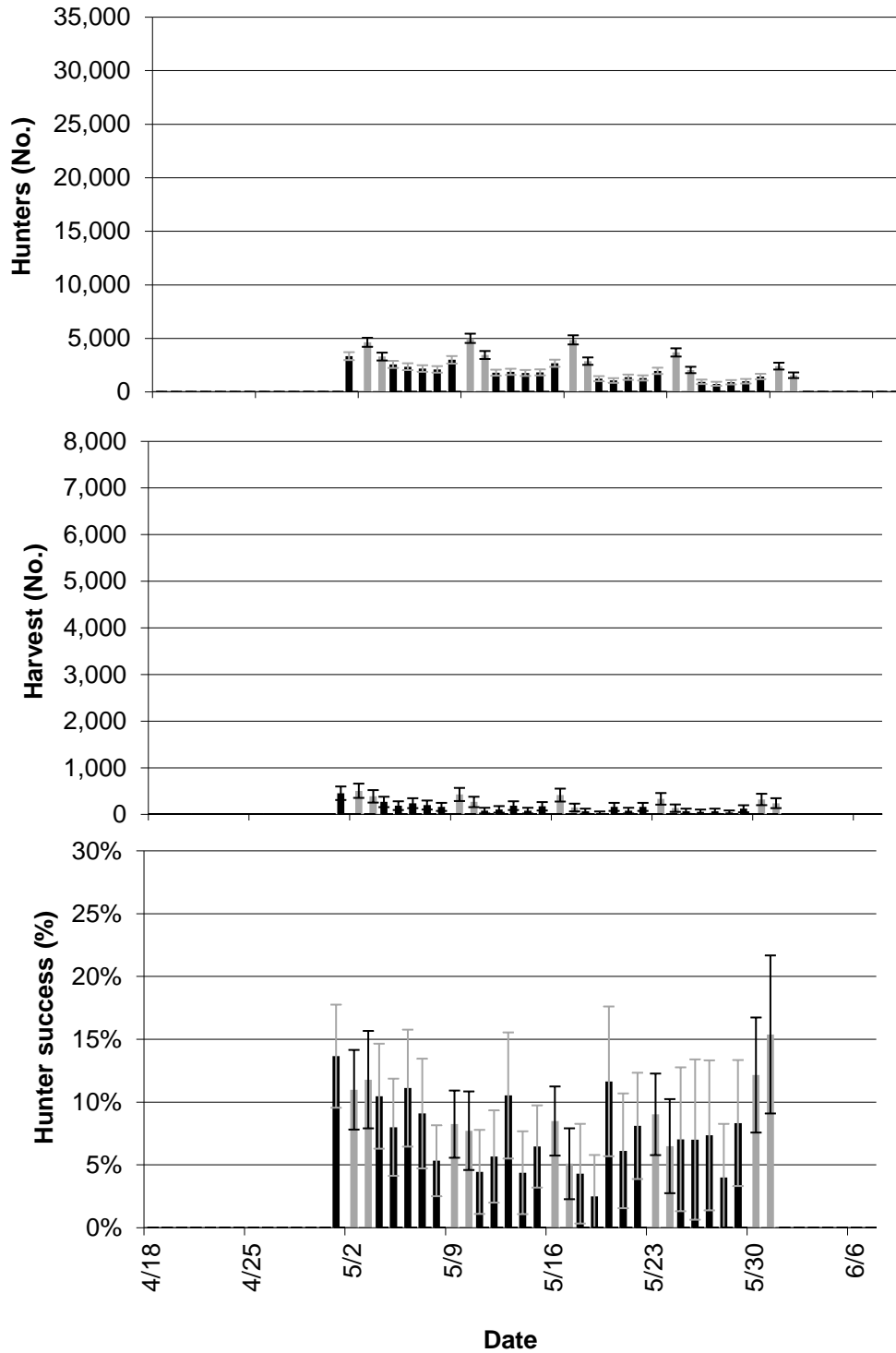


Figure 9. Estimated number of hunters, harvest, and hunter success by date during Hunt 234 of the 2020 Michigan spring turkey hunting season (May 6-31). An additional 871 ± 200 birds were taken on unknown dates. Gray-shaded bars indicate weekends. Vertical bars represent the 95% confidence interval.

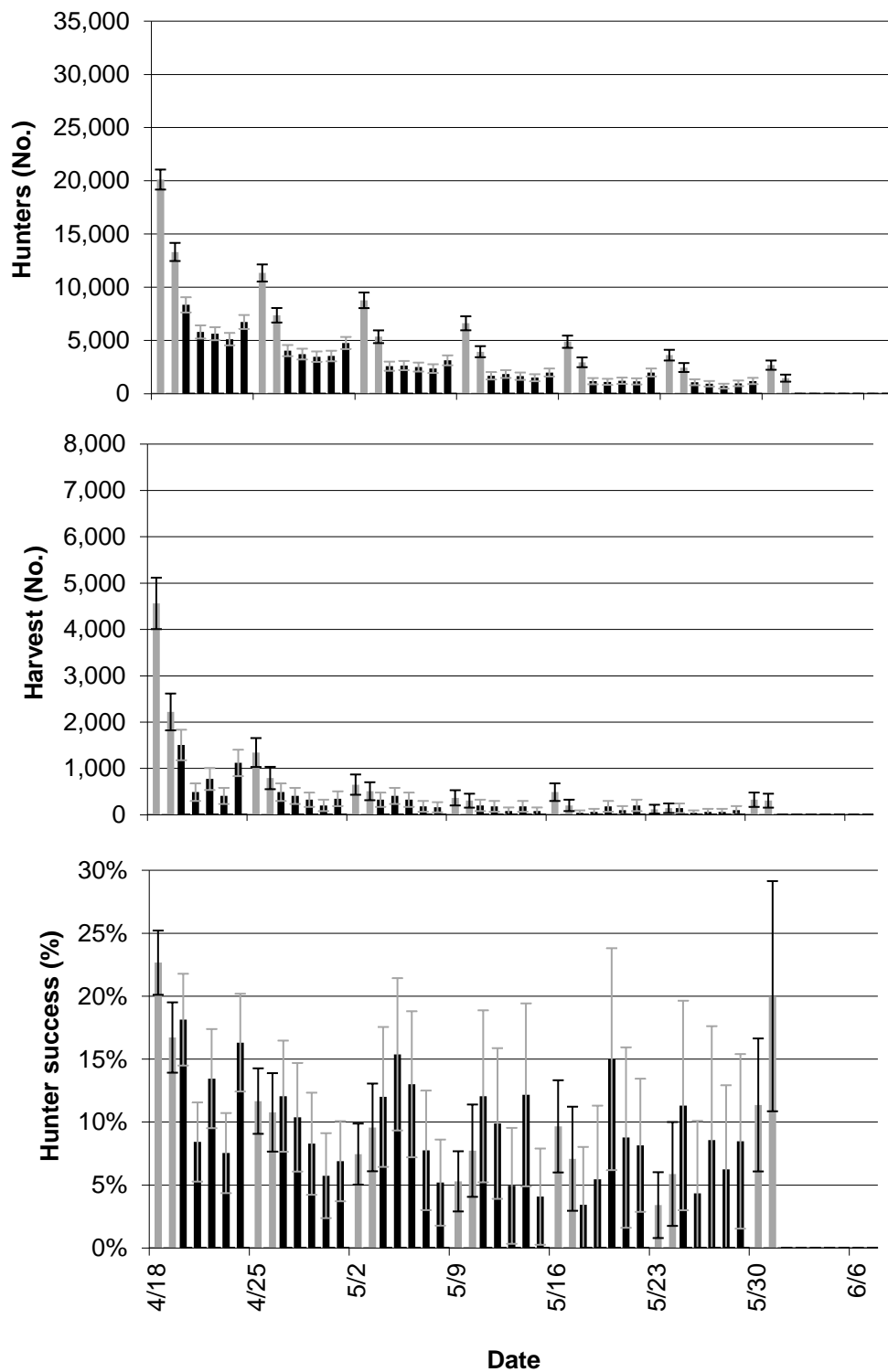


Figure 10. Estimated number of hunters, harvest, and hunter success by date during Hunt 301 of the 2020 Michigan spring turkey hunting season (April 18-May 31). An additional 707 ± 164 birds were taken on unknown dates. Gray-shaded bars indicate weekends. Vertical bars represent the 95% confidence interval.

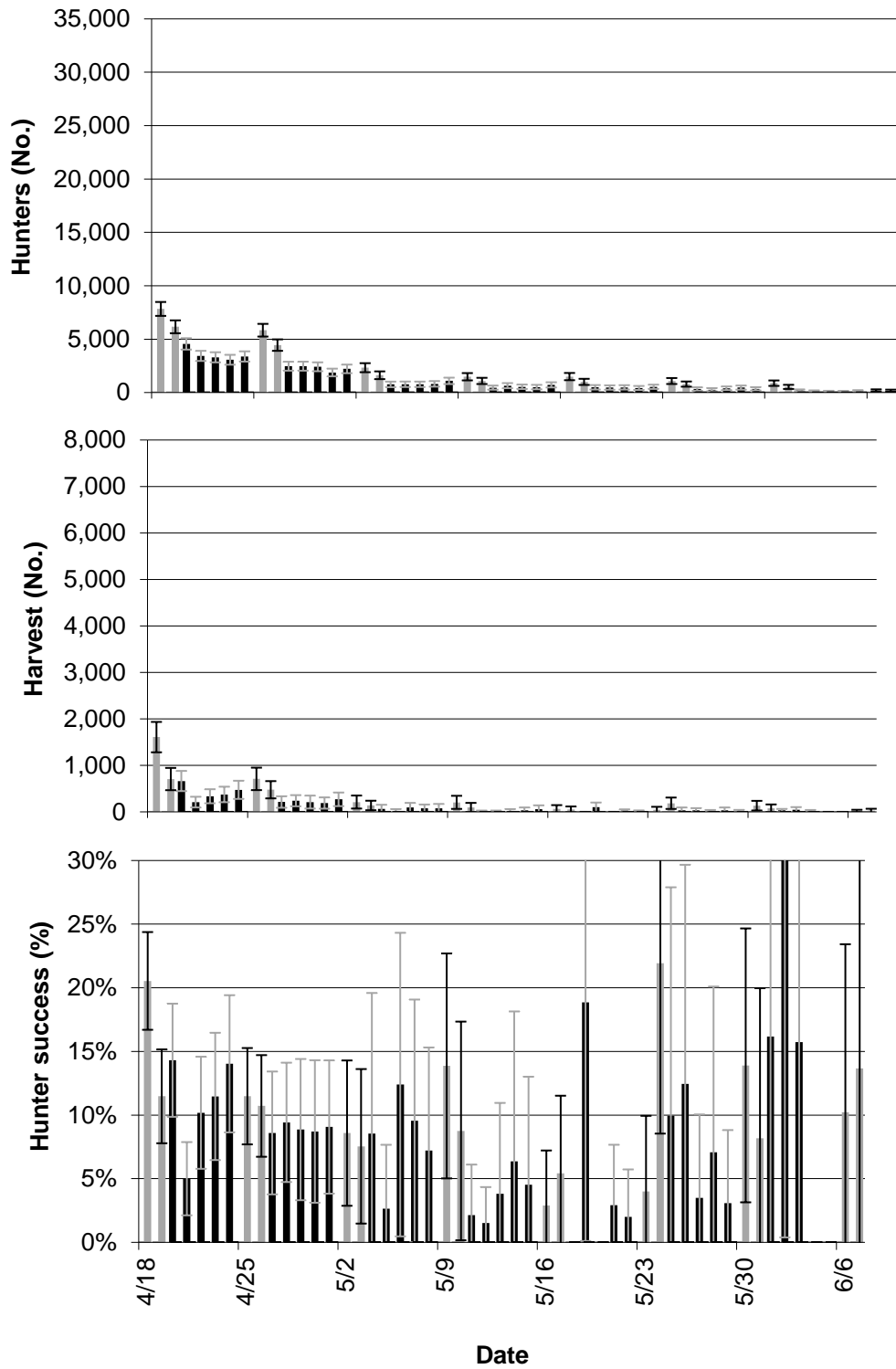


Figure 11. Estimated number of hunters, harvest, and hunter success by date during all hunts, except for mentored youth hunts and hunts 234 and 301 of the 2020 Michigan spring turkey hunting season. An additional 312 ± 134 birds were taken on unknown dates. Gray-shaded bars indicate weekends. Vertical bars represent the 95% confidence interval.

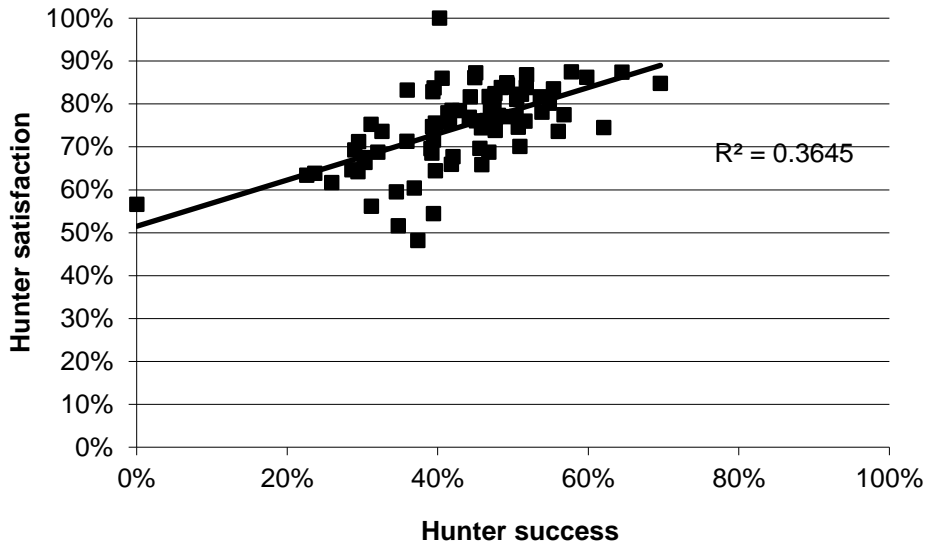


Figure 12. Relationship between hunter satisfaction (expressed as the percentage of hunters rating their hunting experience as excellent, very good, or good) and hunter success for each of 81 counties in Michigan during the 2020 spring turkey hunting season (included only counties with at least 30 hunters).

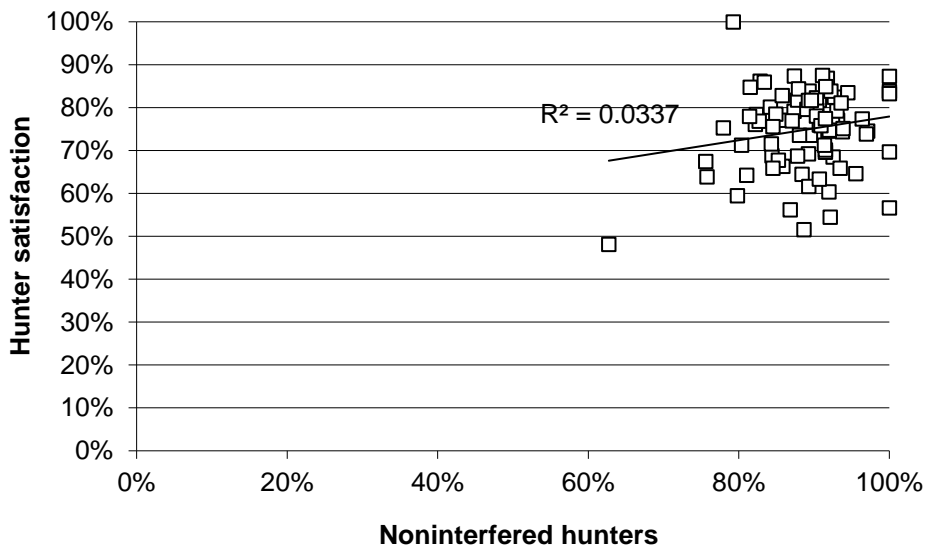


Figure 13. Relationship between hunter satisfaction (expressed as the percentage of hunters rating their hunting experience as excellent, very good, or good) and hunter interference for each of 81 counties in Michigan during the 2020 spring turkey hunting season (included only counties with at least 30 hunters). Noninterfered hunters were the proportion of hunters that indicated that they experienced no or only minor interference from other hunters.

APPENDIX A

The questionnaire that was used for the 2020 Spring Turkey Harvest Survey.



2020 MICHIGAN SPRING 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 did not hunt, please answer "No" to question 1 and return this report.

1. Did you hunt turkeys during the 2020 spring season? Yes No; skip to question 10.

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

Firearm Crossbow Bow (recurve, compound, or long bow)

3. If you hunted, please complete the adjacent table: (If you hunted on both public and private lands in the same county or unit, report your activity on separate lines. If you hunted in Unit ZZ, please report the subunit you hunted.)

County hunted (e.g., Kent County)	Unit hunted (see map on back)	Land ownership (please check one)	Number of days hunted
		<input type="checkbox"/> Private <input type="checkbox"/> Public	
		<input type="checkbox"/> Private <input type="checkbox"/> Public	
		<input type="checkbox"/> Private <input type="checkbox"/> Public	

4. Please circle [O] the days that you hunted. Circle only the days you actually went afield to hunt turkeys.

April						
S	M	T	W	T	F	S
						18
19	20	21	22	23	24	25
26	27	28	29	30		

May						
S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

June						
S	M	T	W	T	F	S
	1	2	3	4	5	6
7						

5. Did you harvest a turkey during the 2020 spring season? Only count turkeys tagged with your kill tag. Yes No; skip to question 7.

6. If you placed your harvest tag on a turkey, please mark [X] the date that the turkey was harvested.

April						
S	M	T	W	T	F	S
						18
19	20	21	22	23	24	25
26	27	28	29	30		

May						
S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

June						
S	M	T	W	T	F	S
	1	2	3	4	5	6
7						

A. In what county and unit was the turkey taken (refer to map on backside)?

Please write in county name

Please write in hunting unit

B. Which option best describes the bird that you tagged? Male with a beard less than 6 inches Male with a beard 6 or more inches Female with a beard

C. What type of land was the turkey harvested? Private Public

D. What type of device was used to harvest your turkey?

Firearm Crossbow Bow (recurve, compound, or long bow)

7. Overall, how would you rate your 2020 spring turkey hunting experience?

Excellent Very Good Good Fair Poor

8. How would you describe interference by other hunters during your 2020 spring turkey hunt?

None Minor Some irritation Major problem

9. Compared to last year, what is the status of turkeys in the county you preferred to hunt in 2020?

Increasing Decreasing Stable Unknown

10. As a recreational activity, how important is turkey hunting to you compared to your other recreational activities? (Select one choice.)

- 1 My most important recreational activity. 4 Less important than most of my recreational activities.
- 2 One of my more important recreational activities. 5 Not at all important as a recreational activity.
- 3 No more important than other recreational activities.

11. How would you describe your turkey hunting skill level?

- 1 Beginner 2 Novice 3 Intermediate 4 Advanced 5 Expert

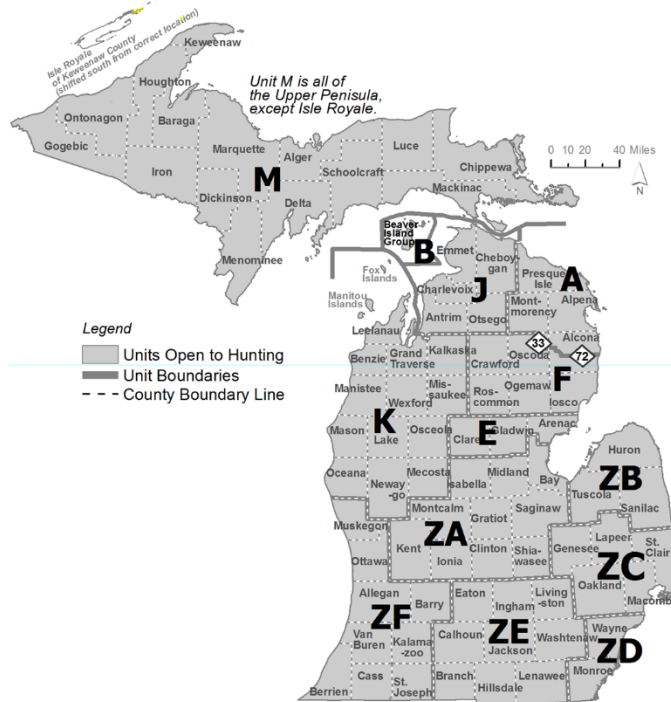
12. To what extent do you agree or disagree with each of the following statements regarding the impacts of the COVID-19 pandemic on your hunting activity during the 2020 spring turkey hunting season? (Select one choice per item.)

	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree	Unsure
a. I was <u>more likely</u> to buy a hunting license because of the COVID-19 pandemic.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
b. I <u>increased</u> the amount of time that I spent hunting turkeys because of the COVID-19 pandemic.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
c. I <u>reduced</u> the distance I travelled to hunt turkeys because of the COVID-19 pandemic.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
d. I hunted <u>alone more frequently</u> because of the COVID-19 pandemic.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
e. I found it <u>more difficult</u> to locate a hunting area because of the COVID-19 pandemic.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>

13. How likely is it that you will continue to hunt turkeys in Michigan in the next 2 years?

- 1 Very likely 2 Somewhat likely 3 Not very likely 4 Not at all likely 5 Not sure

2020 Spring Turkey Hunting Units



Please note if you hunted Turkey Management Unit ZZ. Turkey Management Unit ZZ consisted of 6 smaller management units (subunits) in southern Michigan. If you hunted in Unit ZZ, please report which of these smaller subunits you hunted (i.e., units ZA, ZB, ZC, ZD, ZE, ZF).