



Michigan Deer Harvest Survey Report 2019 Seasons

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ABSTRACT

A survey of deer hunters was conducted following the 2019 hunting seasons to estimate hunter participation, harvest, and hunting effort. In 2019, an estimated 540,174 hunters spent 7.5 million days afield. Statewide, the number of people hunting decreased significantly by 2.6% between 2018 and 2019. Hunters harvested about 364,000 deer. Harvest did not change significantly between 2018 and 2019. Statewide, nearly 50% of hunters harvested a deer in 2019. About 22% of hunters took an antlerless deer and 36% took an antlered buck. Approximately 16% of deer hunters harvested two or more deer of any type. About 6% of hunters statewide harvested two antlered bucks. Statewide levels of satisfaction with the number of bucks seen and the size of the antlers in 2019 increased significantly from 2018. Statewide, 53% of hunters were satisfied with their overall hunting experience in 2019, which was similar to satisfaction in 2018. About 204,160 hunters used a crossbow during the 2019 archery season, and they harvested approximately 77,375 deer with the crossbow. About 19% fewer individuals purchased a deer hunting license in 2019 than ten years ago in 2009. Although the overall number of license buyers declined from 2009, an increased number of people younger than 12 years of age and people older than 56 purchased a license in 2019. About 11% of the license buyers in 2019 were younger than 17 years old. An estimated 135,717 hunters took 162,329 deer to a commercial meat processor in 2019 (i.e., 45% of the harvested deer). About 45% of hunters supported the late urban archery season that occurred in Macomb, Oakland, and Wayne counties, and about 34% of hunters supported expanding this archery season to their preferred hunting area.



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INTRODUCTION

The Natural Resources Commission (NRC) and the Michigan Department of Natural Resources (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 accomplish this statutory responsibility. Estimating hunter participation, harvest, and hunting effort (hereafter referred to as estimates) are the primary objectives of these surveys. Estimates derived from harvest surveys and information from deer (*Odocoileus virginianus*) harvest check stations, trends in deer-vehicle collisions, population modeling, and input received from the public are used to monitor deer populations and establish harvest regulations.

Although estimating harvest, hunter numbers, and hunting effort were the primary objectives of the deer harvest survey (Appendix A), this survey also provided an opportunity to collect information about management issues. Questions were added to investigate hunter satisfaction with the 2019 hunting season and deer numbers. Deer hunters were also asked whether they supported the late urban archery season, which was established in 2017. This urban archery hunt occurred during January 2-31, 2020, in Macomb, Oakland, and Wayne counties. Hunters also were asked to report whether they used trail cameras to hunt deer. Hunters were asked to indicate the importance of CWD testing and whether the results of CWD testing affected their decision to hunt. Finally, hunters were asked whether they would pay a nominal fee to have their deer tested for CWD.

CWD was discovered among wild Michigan deer in 2015 (Stewart et al. 2016). CWD is a fatal neurodegenerative disease affecting several species of wildlife in the Cervidae family including white-tailed deer. CWD is considered the most important disease currently threatening North American cervids (Gillin et al. 2018). Although no human CWD infections have been reported, human health authorities recommend that hunters avoid consuming any animal that has tested positive for CWD (Gillin et al. 2018).

Deer were grouped into either an antlered or antlerless deer when developing hunting regulations. Antlered deer included deer with at least one antler three inches or longer, and antlerless deer included deer without antlers and deer with antlers less than 3 inches in length. The type of deer that could be harvested by hunters depended upon the area hunted, hunting season, and license purchased (Tables 1 and 2). During 2019, deer could be harvested primarily during nine hunting seasons: Liberty, archery, regular firearm, muzzleloader, early antlerless, late antlerless, Independence, urban archery, and a disease surveillance hunt.

To harvest a deer, hunters had to possess a hunting license (deer, combination, antlerless, or mentored youth license) (Table 2). A harvest tag was issued as part of the hunting license. Deer, mentored youth, and antlerless licenses included one harvest tag, while combination licenses had two harvest tags.

Hunters could purchase a maximum of two licenses for taking antlered deer. Hunters wanting to harvest only one antlered deer could purchase a single deer license (one kill tag), while

hunters wanting to take two antlered deer could purchase a combination license (two kill tags). Hunters who purchased a single deer license could not purchase a second deer license or a combination license.

If a hunter took two antlered deer, one needed to have at least one antler with four or more points (qualifying points must be at least one inch), except for deer taken by mentored youth hunters or in the 16 counties in the CWD Management Zone. A person with a mentored youth license could use their one harvest tag to take a deer of either sex during the archery, regular firearm, muzzleloader, or Liberty seasons.

Antlerless licenses could be purchased in addition to deer, mentored youth, or combination licenses. Antlerless deer licenses allowed hunters to take antlerless deer during any season with equipment appropriate for the season. The use of each antlerless license was restricted to a single DMU designated at the time of purchase. Antlerless licenses were available for most of the state, except in sixteen DMUs (007, 017, 021, 027, 031, 036, 042, 048, 066, 117, 127, 131, 152, 249, 252, and 349) in the UP. A limited number of antlerless licenses were issued specifically for either public or private lands. Public land antlerless licenses were not available in all DMUs that had private-land licenses. A public-land antlerless deer license was required to hunt antlerless deer on Commercial Forest land. The number of licenses available in DMUs open to antlerless deer hunting was established by the NRC (Appendix B). Hunters could apply for an antlerless license through the drawing, purchase a private land license for selected areas without application, or wait to purchase a leftover license after the drawing, if available.

A private-land antlerless deer hunting license was valid for taking antlerless deer only from privately-owned lands within the DMU specified on the license with landowner permission. A private land license was not valid on land enrolled in the Commercial Forest Act program (Commercial Forest Lands).

An additional discounted antlerless license type was available in 2019 that was only valid on private land in the 16-county CWD Management Zone. This license was available at a reduced cost (\$12 versus \$20); however, it expired on November 3, 2019. This discounted license was created to encourage hunters to take an antlerless deer during an early hunting season. This license did not replace the usual antlerless license. Instead, both antlerless license types were available, and a hunter could purchase both types.

A public land antlerless deer hunting license allowed an individual to hunt for antlerless deer upon publicly-owned lands (including state, federal, and county lands) open to hunting and Commercial Forest Lands within the DMU for which it was issued. A public land license was invalid on any privately-owned lands except Commercial Forest Lands.

Deer Management Unit 487 included all of Alcona, Alpena, Iosco, Montmorency, Oscoda, and Presque Isle counties (DMUs 001, 004, 035, 060, 068, 071, and 452). An individual could purchase up to a season limit of 5 private-land antlerless deer licenses statewide, except for licenses valid in the 16-county CWD Management Zone and DMU 487. For these areas, an individual could purchase a maximum of ten antlerless deer licenses until the quota had been

met. Also, there was no seasonal limit for public land antlerless licenses in any DMU where licenses were available.

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 antlerless deer hunting license was valid for all areas open for hunting antlerless deer and during all deer hunting seasons in which they were eligible to participate.

Deer Management Assistance (DMA) permits were special antlerless permits issued to landowners where the number of antlerless licenses was insufficient to meet the objective of specific landowners (e.g., controlling crop damage). These permits allowed hunters to take one antlerless deer per permit during any deer season on the land where issued or adjacent private lands with the landowner's permission. To use these permits, the hunter also must have purchased a valid deer hunting license for the season in which they were hunting and abide by all other hunting regulations.

Managed Deer Hunt permits were antlerless permits that could be used during special seasons on some public lands (e.g., state parks, state wildlife areas, and some federal land). These permits were issued by special random drawings. To use these permits, the hunter also must have purchased a valid deer hunting license and abide by all other hunting regulations.

The Liberty Season was held during September 14-15 on public and private lands statewide. Youth (less than 17 years old) and hunters with certain disabilities could take no more than one deer during the season. Eligible hunters to participate in this season included hunters issued a permit to use a laser-sighting device or to hunt from a standing vehicle, veterans with 100% disability or rated unemployable as defined by the United States Department of Veterans Affairs, or people who were legally blind. Hunters could take one deer of either sex using a deer or combination license, and antler point restrictions did not apply to taking antlered deer. Only an antlerless deer could be taken with an antlerless license or DMA permit. Youth less than 14 years of age could hunt with archery and crossbow equipment on public or private lands or with a firearm on private or Commercial Forest lands only. All hunters under age 17 hunting with a firearm had to be accompanied by a parent, guardian or someone designated by their parent or guardian. Also, hunters under 10 years of age had to be licensed through the Mentored Youth Hunting Program and accompanied by a qualified mentor.

The archery season occurred statewide on public and private lands. This season was divided into early and late segments (October 1 through November 14 and December 1, 2019, through January 1, 2020). In addition, a January urban archery hunt also was held for the third consecutive year. This archery season occurred during January 2-31, 2020, in Macomb, Oakland, and Wayne counties. Deer licenses, antlerless deer licenses, combination licenses,

mentored youth licenses, and DMA permits could be used to take deer during the archery seasons using archery equipment.

Deer could also be taken in the Independence Hunt during October 17-20, 2019. Hunters could take one deer of either sex on private lands or public lands requiring an access permit. Hunters could use a deer or combination license, and antler point restrictions did not apply to taking antlered deer. Only an antlerless deer could be taken with an antlerless license or DMA permit. Only hunters that were issued a permit to use a laser-sighting device or to hunt from a standing vehicle; veterans with 100% disability or rated unemployable as defined by the United States Department of Veterans Affairs; or people who were legally blind could participate in this season.

The statewide regular firearm season occurred November 15-30. The muzzleloader season was held December 6-15 in the UP and Northern LP, and December 6-22 in the Southern LP. Hunters could take deer on both public and private lands with mentored youth, deer, and deer combo hunting licenses during the regular firearm and muzzleloader seasons. Antlerless licenses (including DMA permits) also could be used during the firearm seasons.

The early antlerless firearm season occurred on private land from September 21-22. Hunters pursuing deer during this season had to purchase an antlerless or mentored youth license, except for hunters in the CWD Management Zone and DMU 487 which could use any valid deer hunting license to take an antlerless deer. The area open to hunting during the early antlerless season was limited to all or portions of 52 counties in the LP (Alcona, Alpena, Antrim, Arenac, Barry, Bay, Benzie, Calhoun, Charlevoix, Clare, Clinton, Eaton, Genesee, Gladwin, Grand Traverse, Gratiot, Hillsdale, Huron, Ingham, Ionia, Iosco, Isabella, Jackson, Kent, Lapeer, Leelanau, Lenawee, Livingston, Macomb, Manistee, Mason, Mecosta, Midland, Monroe, Montcalm, Montmorency, Muskegon, Newaygo, Oakland, Oceana, Osceola, Oscoda, Ottawa, Presque Isle, St. Clair, Saginaw, Sanilac, Shiawassee, Tuscola, Washtenaw, and Wayne counties). Two additional counties (Arenac and Barry) were open in 2019 than in 2018.

The late antlerless firearm season occurred on private land from December 23, 2019, through January 1, 2020. Hunters pursuing deer during this season had to purchase an antlerless or mentored youth license, except for hunters in the CWD Management Zone and DMU 487 which could use any valid deer hunting license to take an antlerless deer. The area open to hunting during the early antlerless season was limited to all or portions of 59 counties in the LP. All counties open during the early antlerless firearm season were also open for the late antlerless firearm season, as well as seven additional counties: Allegan, Berrien, Branch, Cass, Kalamazoo, St. Joseph, and Van Buren. One additional county (Alpena) was open in 2019 than in 2018.

A January firearm deer hunt occurred during January 3-6 and January 10-13 in portions of Alpena County. This special hunt was created to help with disease surveillance (i.e., bovine tuberculosis). The hunt was only held on private land and only antlerless deer could be harvested. Antlerless deer could be harvested with a deer license, deer combination license, or private land antlerless deer licenses for DMU 487.

Crossbows were legal to use during all archery and firearm seasons statewide, except in the UP, where crossbow use was prohibited during the late archery and muzzleloader seasons, unless the hunter was disabled.

METHODS

The Wildlife Division provided all hunters the option to report information about their deer hunting activity voluntarily via the internet. This option was advertised through the hunting regulation booklet (digest) and on the DNR website, and an email message was sent to all license buyers that had provided an email address to the DNR (172,869). Hunters reported whether they hunted, the days spent afield, and whether they harvested a deer. Deer hunters were also asked whether they used a trail camera to hunt deer, whether they supported the late urban archery season that was created in 2017, and to indicate how important CWD testing was in determining whether they hunted deer. Following the 2019 deer hunting seasons, a questionnaire (Appendix A) was sent to 61,463 randomly selected individuals who had purchased a hunting license (deer, antlerless, mentored youth, or combination deer hunting licenses) and had not already voluntarily reported harvest information via the internet. Hunters receiving the mail questionnaire were asked the same questions as asked via the internet. Hunters were instructed not to report hunting effort and harvest associated with DMA permits because landowners obtaining these permits already were required to report the number of deer harvested to the DNR.

Estimates were based primarily on information collected from random samples of hunting license buyers. Thus, these estimates were subject to sampling errors (Cochran 1977). Estimates were calculated using a stratified random sampling design (Cochran 1977) and were presented along with their 95% confidence limit (CL). In theory, this CL can be added and subtracted from the estimate to calculate the 95% confidence interval. The confidence interval is a measure of the precision associated with the estimate and implies the true value would be within this interval 95 times out of 100. Unfortunately, there are several other possible sources of error in surveys that are probably more serious than theoretical calculations of sampling error. They include the failure of participants to provide answers (nonresponse bias), question-wording, and question order. It is very difficult to measure these biases.

License buyers were assigned to one of five groups (strata) based on the type of license purchased and season that it was valid. The first stratum consisted of people eligible only for the archery, regular firearm, and muzzleloader hunting seasons (N = 371,780). The second stratum consisted of people eligible to hunt during archery, regular firearm, muzzleloader, early antlerless, and late antlerless seasons (N = 168,085). The third stratum consisted of people eligible to hunt during archery, regular firearm, muzzleloader, late antlerless, and Liberty seasons (N = 31,626). The fourth stratum consisted of 8,305 people that were eligible to participate in the special disabled hunts. Beginning in 2013, veterans with disabilities could obtain a free deer hunting license (i.e., Disabled Veteran license type). A unique type of hunting license was not available for non-veteran hunters with disabilities; however, hunters with disabilities younger than 65 years were sold a discounted hunting license (i.e., sold a

senior hunting license). The fifth stratum consisted of 5,006 people that had voluntarily reported information about their hunting activity via the Internet before the random sample was selected. The random sample consisted of 29,335 people from the first stratum; 13,547 from the second stratum; 10,495 from the third stratum; and 8,307 from the fourth stratum. The stratified sampling design accounted for the varying probabilities of being selected from the strata so estimates could be reliably extrapolated from the sample to all license buyers.

Estimates were calculated separately by the area where the hunt occurred. For consistency with previous surveys, the state was divided into eight areas that closely matched the DNR's previous wildlife management administrative units (Figure 1). The state was also divided into three ecological regions (UP, Northern LP, and Southern LP). These regions generally matched major ecoregions (Albert 1995), except in the UP where two ecoregions were combined. Ecoregions are regions having similar soils, vegetation, climate, geology, and physiography. Estimates were also calculated for each DMU (Figure 2, Appendix C). Deer harvested from unknown locations were allocated among areas in proportion to the known harvest.

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 significantly. Non-overlapping 95% confidence intervals were equivalent to stating that the difference between the means was larger than would be expected 95 out of 100 times if the study had been repeated (Payton et al. 2003).

Questionnaires were initially mailed during mid-January 2019, and one follow-up questionnaire was mailed to nonrespondents. To increase the number of questionnaires returned, respondents that returned their questionnaire promptly became eligible to win a firearm or bow. Although 61,684 people were selected to receive a questionnaire, 1,629 surveys were undeliverable resulting in an adjusted sample size of 59,834. Questionnaires were returned by 25,070 people (42% adjusted response rate). In past years, two follow-up questionnaires were mailed to nonrespondents; however, only one follow-up survey was sent this year because the governor had issued restrictions on state government spending (Executive Directive 2020 - 03) as a result of the spread of the novel coronavirus (COVID-19) in Michigan. Thus, the adjusted response declined from 47% to 42% between 2018 and 2019.

Estimates of harvest, hunting effort, and hunter participation are affected by the willingness of people to complete and return their questionnaires. This problem can confound comparisons of estimates made between years if response rates vary greatly. The percentage of people returning their questionnaire this year was lower than in previous years. To reduce bias caused by this lower response rate, an adjustment was made on the 2019 estimates to make them comparable to the adjusted 2018 estimates (adjusted to a 74% response rate). Estimates of harvest, hunting effort, and hunter numbers were reduced by 8.8%, 6.6%, and 2.8%, respectively, to make estimates comparable to 2018. These reductions reflected the

average decline noted between estimates calculated when 42% and 74% of the responses were used in 2000 and 2001 surveys.

RESULTS AND DISCUSSION

In 2019, 584,802 people purchased a license to hunt deer in Michigan. The number of people buying a license in 2019 decreased by nearly 3% from 2018 (601,984 people purchased a license in 2018). Most of the people buying a license in 2019 were male (90%), and the average age of license buyers was 45 years (Figure 3). About 11% (61,699) of the license buyers were younger than 17 years old. About 3% (18,906) of the license buyers were younger than 12 years old.

The number of people buying a license in 2019 was about 19% less than the number of people who purchased a license ten years ago in 2009 (725,190 people purchased a license in 2008). There were fewer license buyers for all age classes between 12 and 56 years of age in 2019, compared to 2009 (Figure 4). However, there were increased hunter numbers among the youngest and oldest age classes in 2019. 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. Also, the legalization of crossbow use during the archery season probably increased participation among hunters in the oldest age classes. The increased participation among the youngest hunters likely reflected the lowering of the minimum age requirements. In 2012, the minimum age requirement was eliminated to hunt deer with a firearm, while hunters had to be at least 10 years old to participate in 2009.

The number of 2019 deer harvest tags sold for all license types combined decreased by 2.0% from 2018 (Table 3). License buyers purchased an average of 2.1 harvest tags. About 91% of the license buyers obtained three or fewer harvest tags, and about 99% had five or fewer harvest tags (Figure 5). Hunters most frequently obtained antlerless and combination harvest tags (Figure 6). About 41% of the license buyers purchased at least one antlerless license (238,711 people), and greater than 99% of antlerless license buyers purchased three or fewer antlerless licenses, public and private licenses combined (Figure 7).

The 2019 antlerless license quota on private lands was nearly the same as the quota in 2018 (Appendix B). The quota for public land antlerless licenses increased from 73,835 to 75,080 between 2018 and 2019 (i.e., 2% increase). Overall, the antlerless license quota for private and public lands combined was about the same as last year, but the number of antlerless licenses sold decreased by 1.2% in 2019 (Table 3).

About $92.4 \pm 0.3\%$ (540,174 hunters) of the people buying a license in 2019 spent time hunting deer (Table 4). Statewide, the number of people hunting deer during all seasons combined declined significantly by nearly 3% from 2018. Most hunters (475,038) pursued deer during the regular firearm season (Figure 8).

Significantly fewer people hunted during the regular firearm (-2%), muzzleloader (-5%), archery (-5%), late antlerless (-8%), and Liberty (-12%) seasons during 2019 (Table 4). Participation in the archery, early antlerless, Independence, urban archery, and disease surveillance seasons were not significantly different between 2018 and 2019 (Figure 9).

About 49% of the days that hunters spent pursuing deer throughout the state occurred in the archery season (Figure 10). About 40% of the hunting effort occurred during the regular firearm season. Nearly 10% of the hunting effort occurred in the muzzleloader and late antlerless seasons combined. Statewide, hunters devoted an average of 15.0 days afield hunting deer during all seasons combined (Table 5). Archers had the greatest number of days available to hunt deer (77 days) and devoted the greatest number of days afield (\bar{x} = 13.6 days/hunter) (Figure 11, Table 5). Statewide, the number of days hunting deer during all seasons combined was nearly unchanged from 2018 (Table 4). Significantly fewer days were devoted to hunting during the Liberty (-11%) and late antlerless (-12%) seasons during 2019 (Table 4). Hunting effort was not significantly different in the remaining seasons (i.e., archery, disease surveillance, early antlerless, Independence, muzzleloader, regular firearm, and urban archery seasons). In 2019, the Liberty and early antlerless seasons occurred on different dates, but these seasons occurred concurrently on the same dates in 2018.

About 370,948 deer were harvested statewide in 2019, which was nearly the same number of deer taken in 2018 (Figures 12-13, Tables 6-7). The number of deer harvested decreased significantly in the Liberty (-15%) and early antlerless (-40%) seasons. The differences in the alignment of the seasons between the years may have contributed to the decline in participation in the Liberty season and the declines in the combined harvest during both seasons. Harvest was not significantly changed in the remaining seasons (i.e., archery, disease surveillance, Independence, late antlerless, muzzleloader, regular firearm, and urban archery seasons). Statewide harvests of both antlered and antlerless deer in 2019 for all the seasons combined were not significantly different from 2018 (Table 6). The counties with the greatest harvest densities for antlered and antlerless deer were generally in the central and south-central parts of the state (Figure 14).

About 54% of the deer harvested (sexes combined) in 2019 were taken during the regular firearm season (Figure 15). Nearly 47% of the antlerless deer and 59% of the antlered bucks were harvested in the regular firearm season. Hunters took 32% of the harvested deer (sexes combined) during the archery season. These archers took 29% of the antlerless deer and 33% of the antlered bucks harvested. Few antlered bucks (5%) were taken in the muzzleloader season. The early and late antlerless and muzzleloader seasons combined accounted for about 22% of the antlerless deer harvested.

About 88% of the deer harvested (sexes combined) in 2019 were taken on private lands (Table 8). Statewide, most of the antlerless deer (89%) and antlered bucks (88%) were harvested on private lands.

Statewide, 50% of deer hunters harvested at least one deer (all deer seasons and sexes combined) in 2019 (Figure 16, Table 9), compared to the 49% successful in 2018. About 22%

of hunters took an antlerless deer, and 36% took an antlered buck in 2018. About 16% of deer hunters harvested two or more deer.

Hunters were most successful in taking a deer during the regular firearm (37%), Liberty (35%), and archery (34%) seasons (Figure 17, Table 10). Hunter success was lowest in the muzzleloader (19%), disease surveillance (18%), and urban archery (6%) seasons. Nearly 26% of hunters took an antlered buck and 14% harvested an antlerless deer during the regular firearm season.

Deer hunters were asked to report how satisfied they were with (1) number of deer seen, (2) number of antlered deer [bucks] seen, (3) size of antlers seen, (4) number of deer taken, and (5) their overall hunting experience. Statewide, $\leq 53\%$ of hunters were satisfied with the numbers of deer seen, bucks seen, size of antlers seen, deer taken, and their overall hunting experience in 2019 (Tables 11-13). Statewide levels of satisfaction increased significantly between 2018 and 2019 for the number of bucks seen and the size of antlers seen. People hunting deer only on private lands were generally more satisfied than people hunting exclusively on public lands (Tables 14-16).

About 204,160 hunters used a crossbow during the archery season, and they harvested about 77,375 deer with the crossbow (Tables 17-19). The number of archers using a crossbow in 2019 did not change significantly from 2018 (202,576 archers in 2018). Harvest of deer by archers using a crossbow was not significantly different from last year (74,671 deer taken in 2018). About 33% of these archers using a crossbow in 2019 harvested a deer with a crossbow in the archery season, versus 32% success in 2018.

An estimated $135,717 \pm 3,242$ hunters took $162,329 \pm 4,407$ deer to a commercial meat processor in 2019. Thus, about 45% of the deer harvested in all seasons (162,329 of 363,678 deer) were handled by a processor. This proportion is the same proportion of Michigan deer hunters using a processor in 2018 (Frawley 2019).

Among active hunters in Michigan during 2019, 64% (344,736) indicated that they would continue to hunt deer if all processors stopped handling deer because of CWD (Tables 20 and 21). In contrast, 8% of hunters (44,288) would stop hunting deer. About, 24% of hunters (130,018) were uncertain whether they would continue hunting if processors were not available. Also, about 4% of respondents failed to provide an answer, which represents about 20,995 hunters.

About 45% of the deer hunters statewide used a trail camera to monitor deer activity in their hunt area (Table 22), and hunters in the UP more frequently used trail cameras than hunters in the LP. Although UP hunters more frequently used trail cameras, the mean number of days that they used cameras was less than LP hunters (Table 23). These differences appeared to reflect geographic differences in hunting success (Table 10) and the mean number of days of hunting effort (Table 5). Hunters in the UP had lower hunting success than LP hunters; thus, UP hunters were more likely to use trail cameras to improve their hunting success. Although a lower proportion of hunters in the LP used cameras, the hunters in the LP that used trail

cameras had more opportunities to use cameras than hunters in the UP because they had more hunting seasons and longer seasons (Table 1).

Among the hunters using a trail camera, 97% reported they took a picture of a deer (Table 22). Hunters in the UP were more likely to see bear, fisher, marten, and a wolf than hunters in the LP. In contrast, hunters in the LP were more likely to see coyote and fox than hunters in the UP. Furthermore, bobcats were more frequently seen by hunters in the NLP than either the UP or SLP.

An estimated 3,330 hunters pursued deer during the late urban archery season (Table 4), which occurred during January 2-31, 2020, in Macomb, Oakland, and Wayne counties. Statewide, 45% of deer hunters supported having the late urban archery season; however, support was highest among the hunters where the season occurred in the southeast LP (61% supported) (Table 23). Support for expanding this late archery season to other areas of the state was greatest in areas closest to the southeast LP. Lowest levels of support were expressed among hunters in the UP.

Most hunters (82%) statewide indicated that it was important to monitor the status of CWD in areas where CWD was known to exist (Table 26). Furthermore, 45% of hunters indicated that their decision to hunt in these areas was linked to knowing the status of CWD. Hunters indicated that they may stop hunting in areas when CWD infection rates increased (Table 26, Figure 18). If CWD testing was not available and estimated CWD prevalence was low (<1% infection rate), about 14% of hunters would stop hunting in that area. About 24% of hunters may stop hunting in infected areas if the CWD infection rate was moderate (5%), and 45% of hunters may stop hunting if the CWD infection rate was high (>10%).

Several studies have indicated that a greater proportion of hunters may stop hunting deer as CWD infection rates increased in an area (Gigliotti 2004, Needham et al. 2004, Vaske and Lyon 2010), although the potential hunter drop-out rates were generally lower than suggested by Michigan hunters. For example, Needham et al. (2004) reported that 5% of hunters may stop hunting in a state if CWD was restricted to about 10% of the state and about 10% of the deer in this area was infected by CWD, while 49% of hunters may stop hunting deer in the state if about 50% of the deer were infected throughout the state.

The ability to infer the hunter's future hunting activity from survey results may be limited because the hunter's responses often do not match their actual behavior. Actual drop-out rates in other states have been less than 10% when CWD infection rates have been low (Miller 2004, Vaske et al. 2010). Furthermore, long-term studies suggest that the hunter losses diminish over time (Erickson et al. 2019, Xie et al. 2019, Holland et al. 2020, Pattison-Williams et al. 2020). These studies suggest that hunters may become acclimated to the presence of CWD and imply that most hunters will continue to hunt deer if CWD conditions do not dramatically worsen.

An estimated 38% of hunters indicated that they were willing to pay a nominal fee to get their harvested deer tested for CWD (Table 26), although the amount of the nominal fee was not defined. A nominal fee generally means a price that does not reflect the true value of the

underlying item. This price is normally considered easy for a consumer to afford. Among states that charge a fee for CWD testing in 2019, the minimum fee was \$25 (unpublished data).

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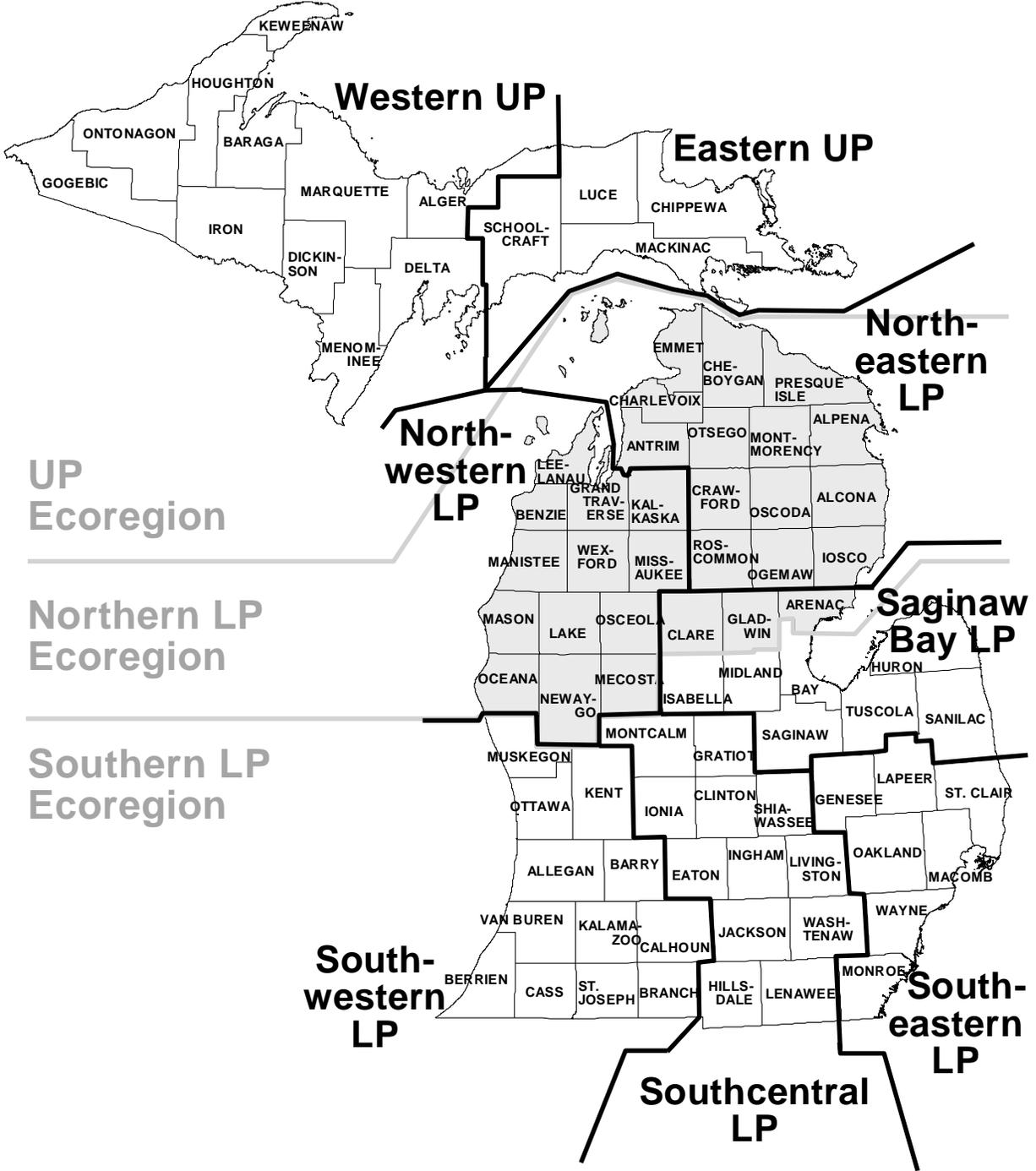


Figure 1. Areas used to summarize deer harvest in Michigan for the 2019 hunting seasons.

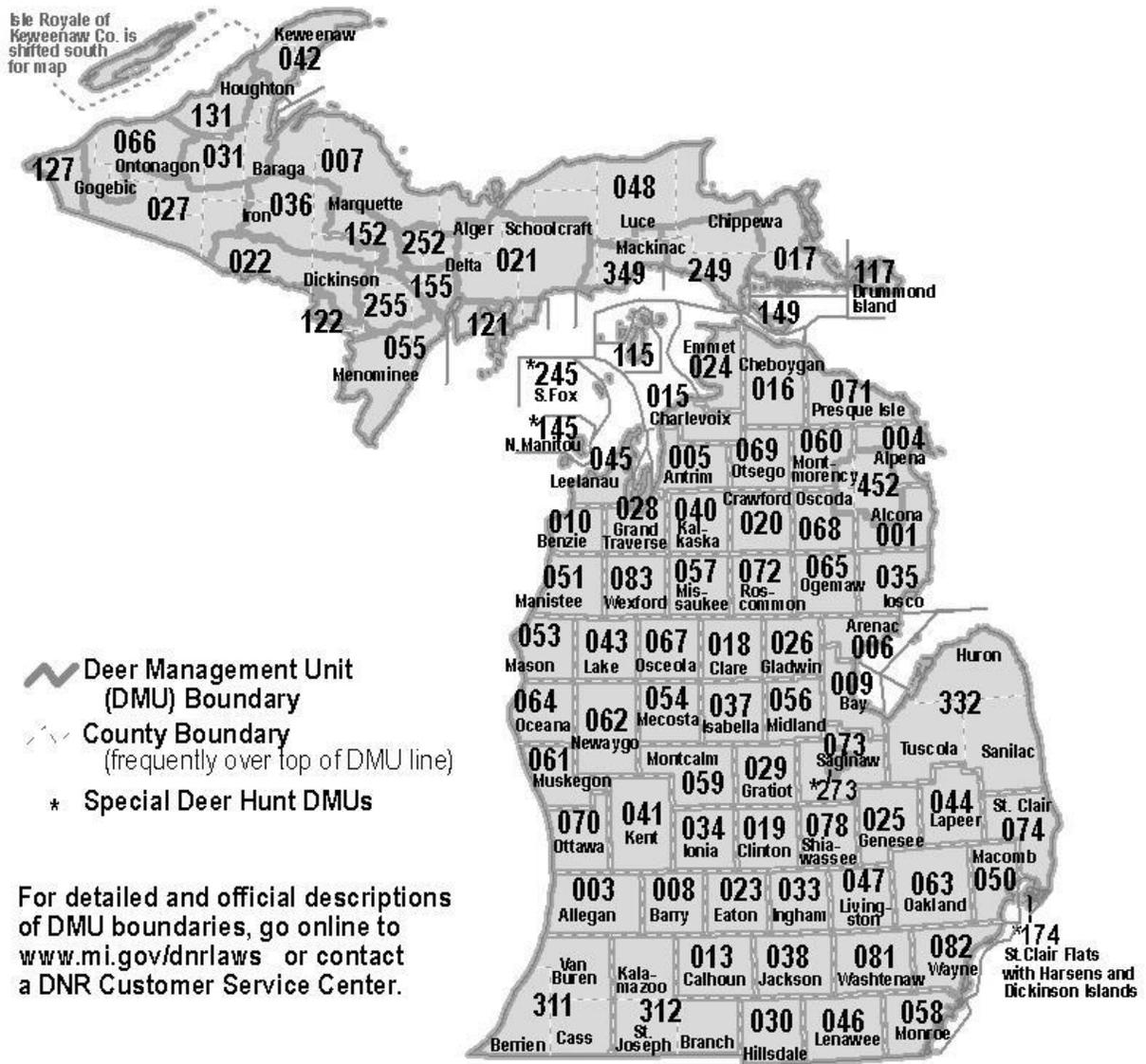


Figure 2. Deer management units in Michigan for the 2019 hunting seasons.

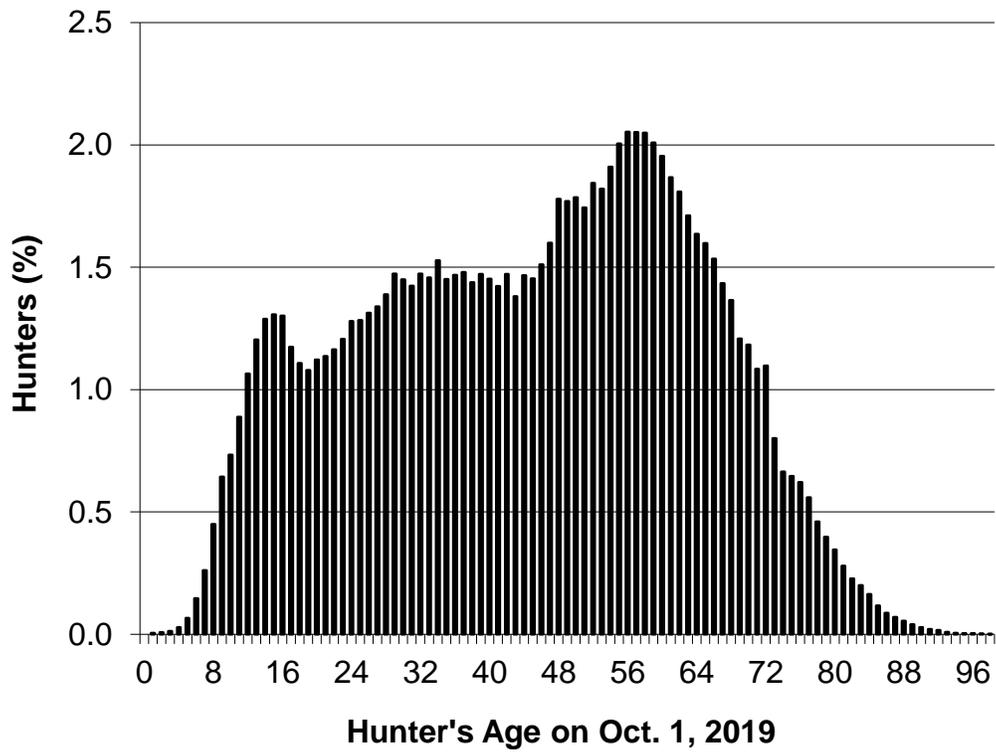


Figure 3. Age of people that purchased a deer hunting license in Michigan for the 2019 hunting seasons (mean = 44 years).

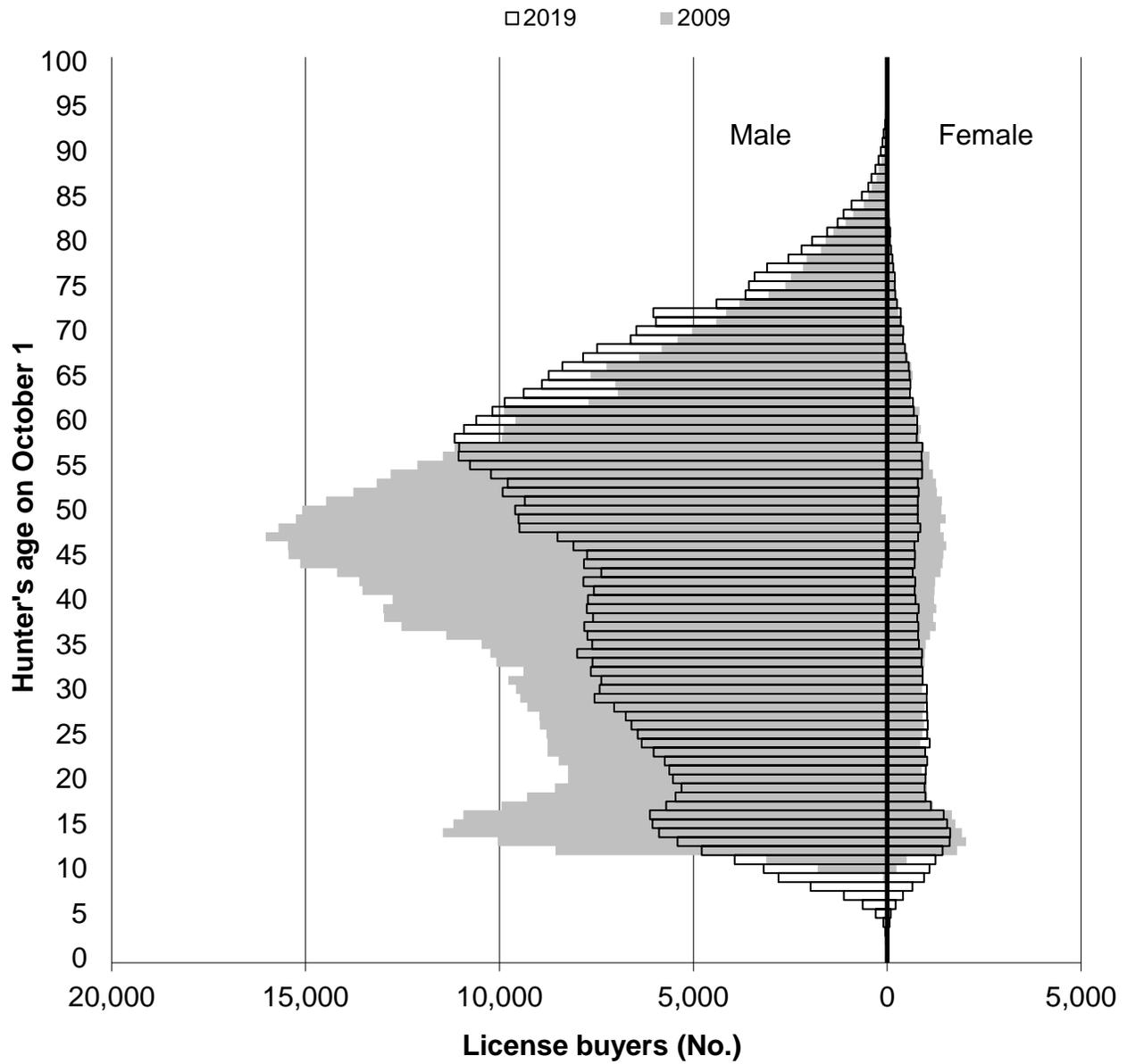


Figure 4. Number of deer hunting license buyers in Michigan by age and sex during the 2009 and 2019 hunting seasons. Deer hunting licenses were purchased by 733,998 people in 2009 and 601,984 people in 2019.

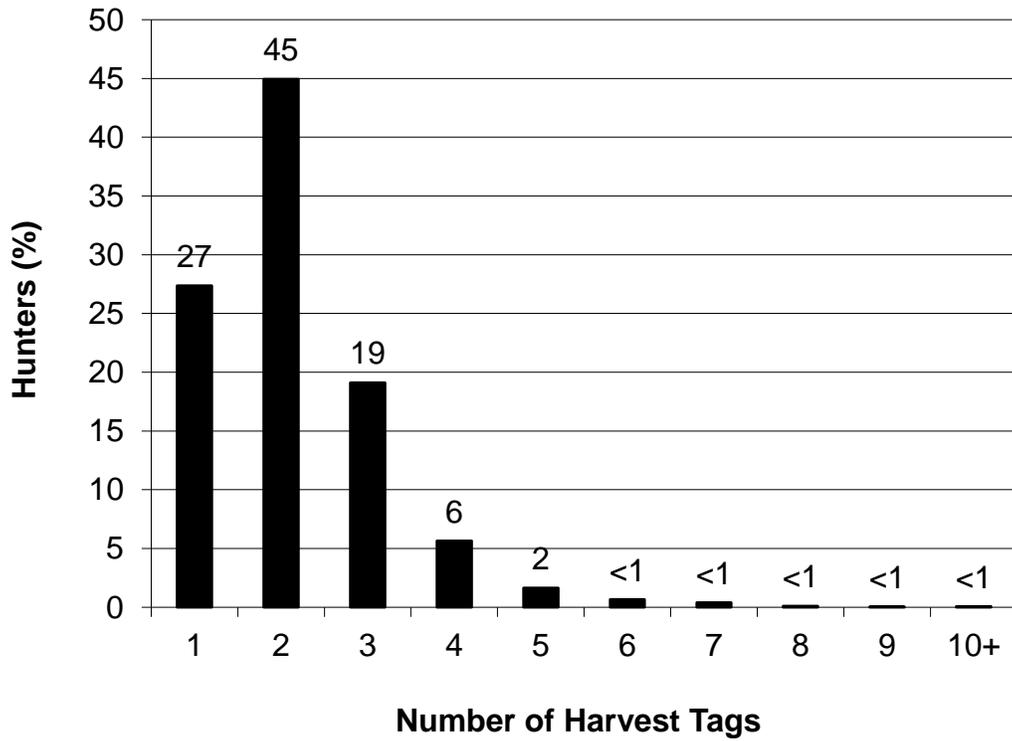


Figure 5. Number of harvest tags (all license and tag types) issued per person for hunting deer in Michigan during the 2019 hunting seasons (mean = 2.1 tags). Licenses were purchased by 583,093 people.

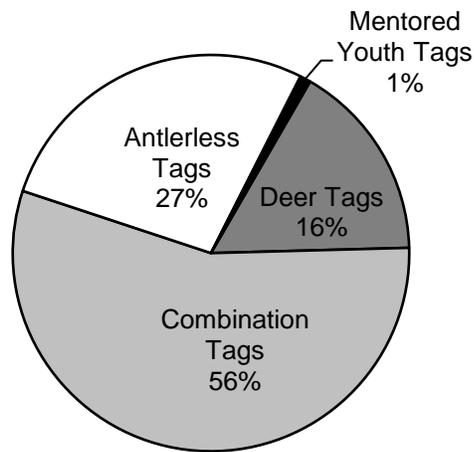


Figure 6. Types of harvest tags issued for deer hunting in Michigan during the 2019 hunting seasons.

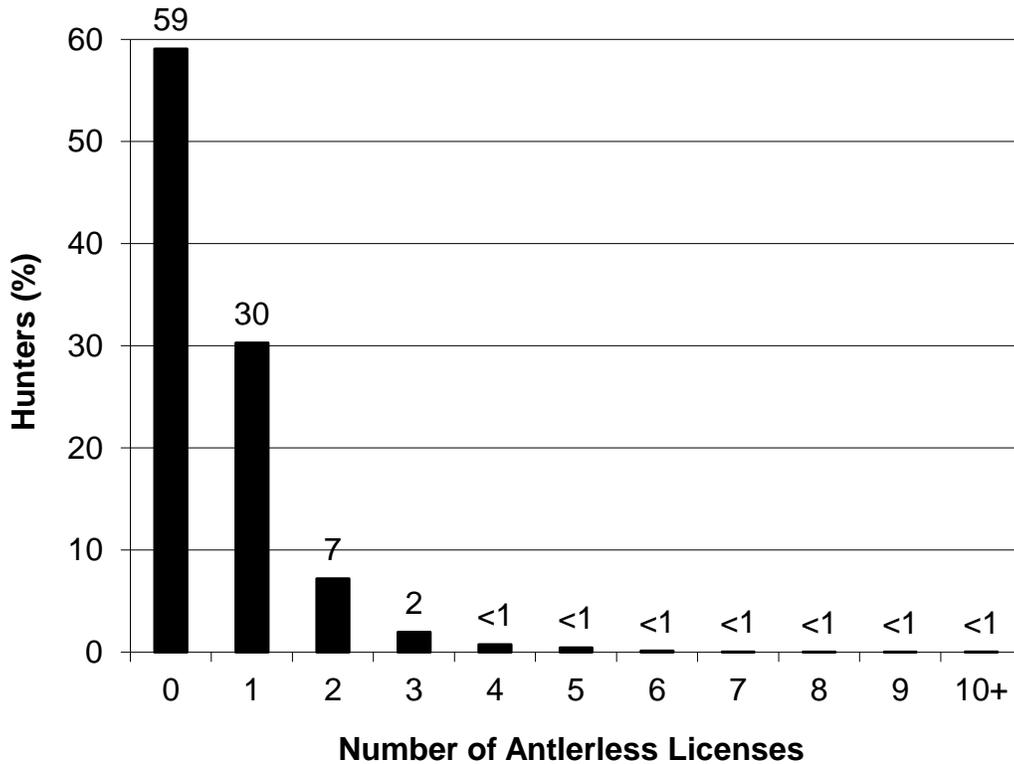


Figure 7. Percentage of deer hunting license buyers (all license types) purchasing an antlerless license in Michigan, 2019 (excluded mentored youth hunting license). Antlerless licenses were purchased by 238,711 of 583,093 people (41%) buying deer hunting license.

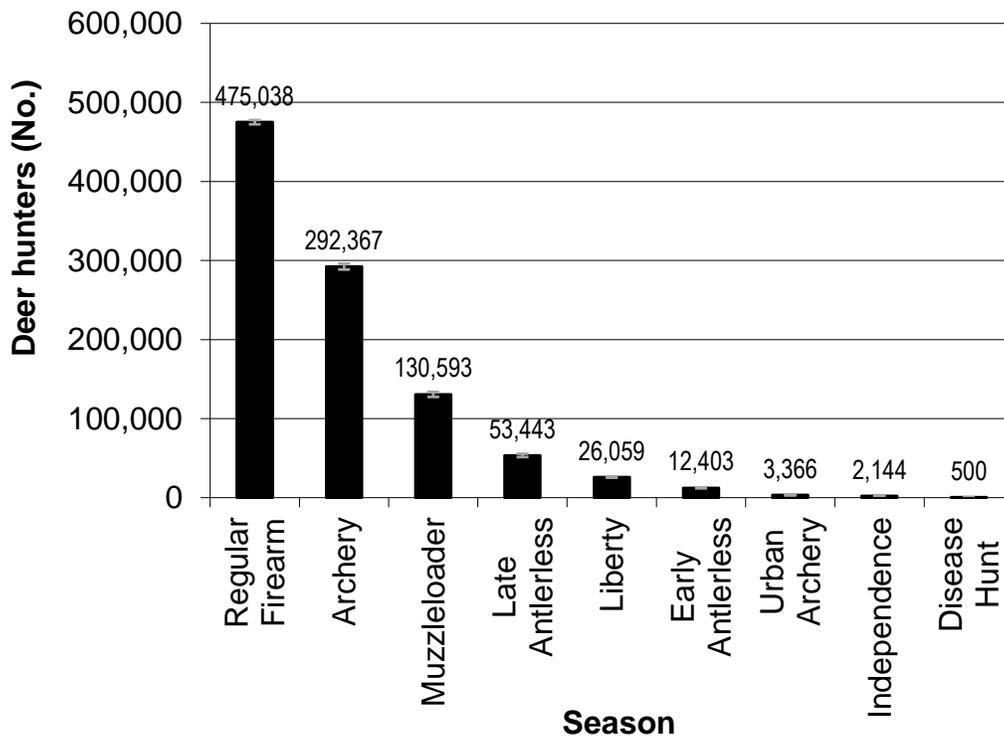


Figure 8. Number of people hunting deer in Michigan during the 2019 hunting seasons. Error bars represent the 95% CLs.

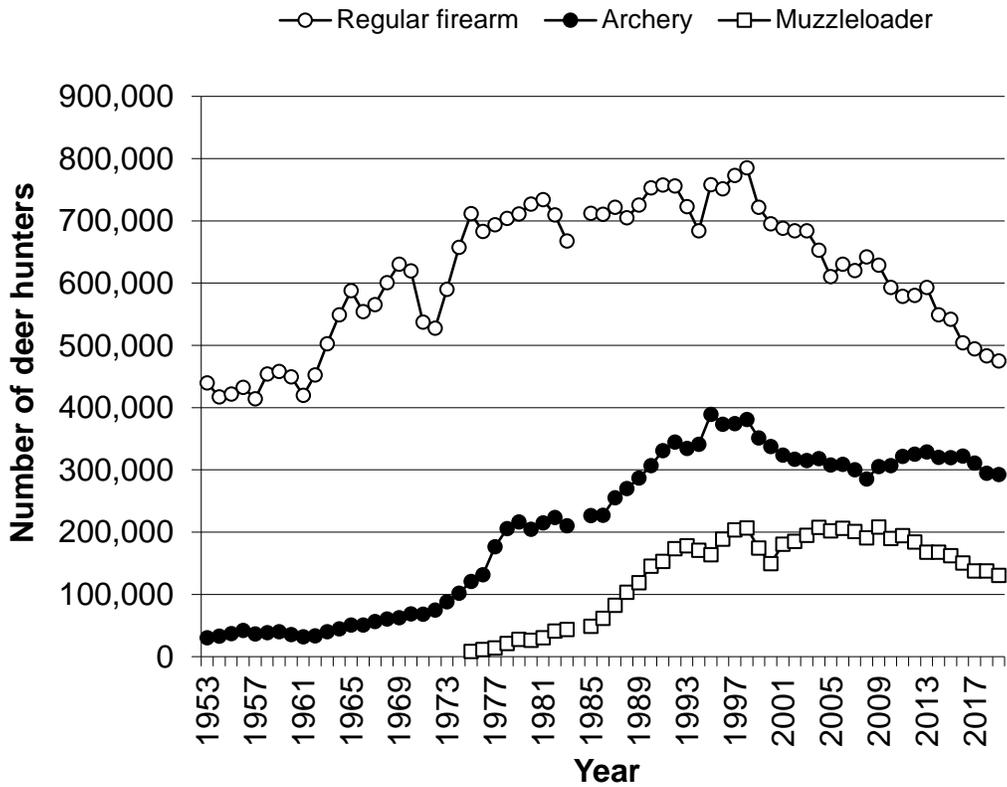


Figure 9. Number of people hunting deer in Michigan during the regular firearm, archery, and muzzleloader seasons, 1953-2019.

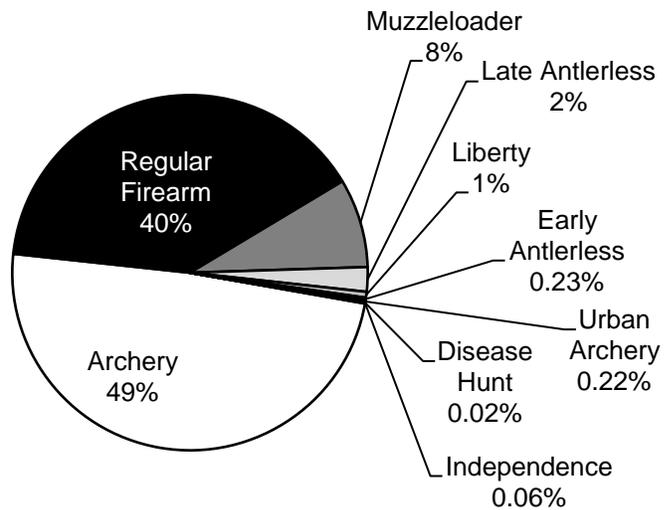


Figure 10. Distribution of hunting effort among deer hunting seasons in Michigan, 2019.

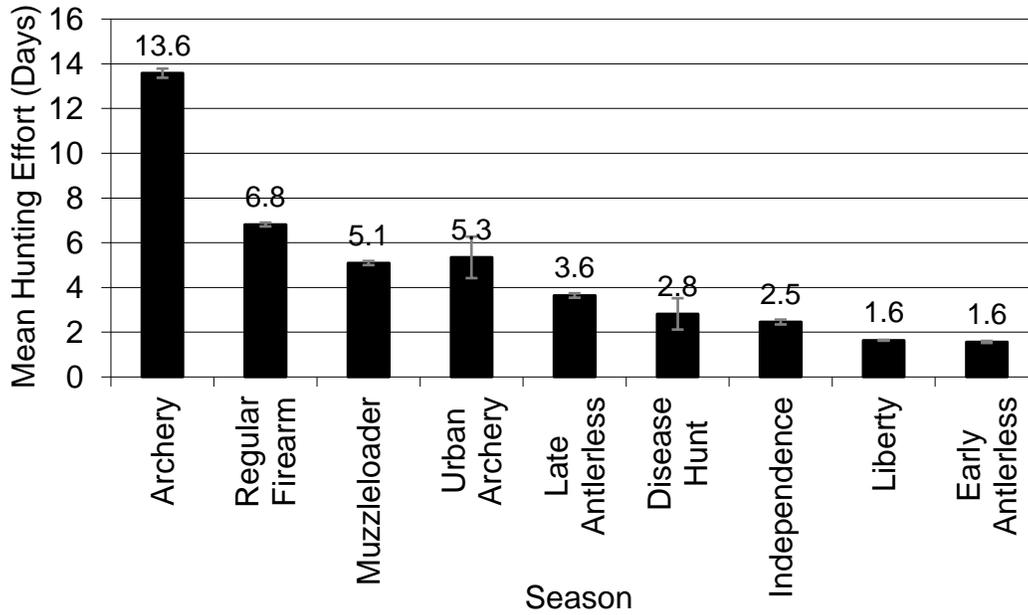


Figure 11. The mean number of days spent hunting deer in Michigan during the 2019 hunting seasons. Error bars represent the 95% CLs.

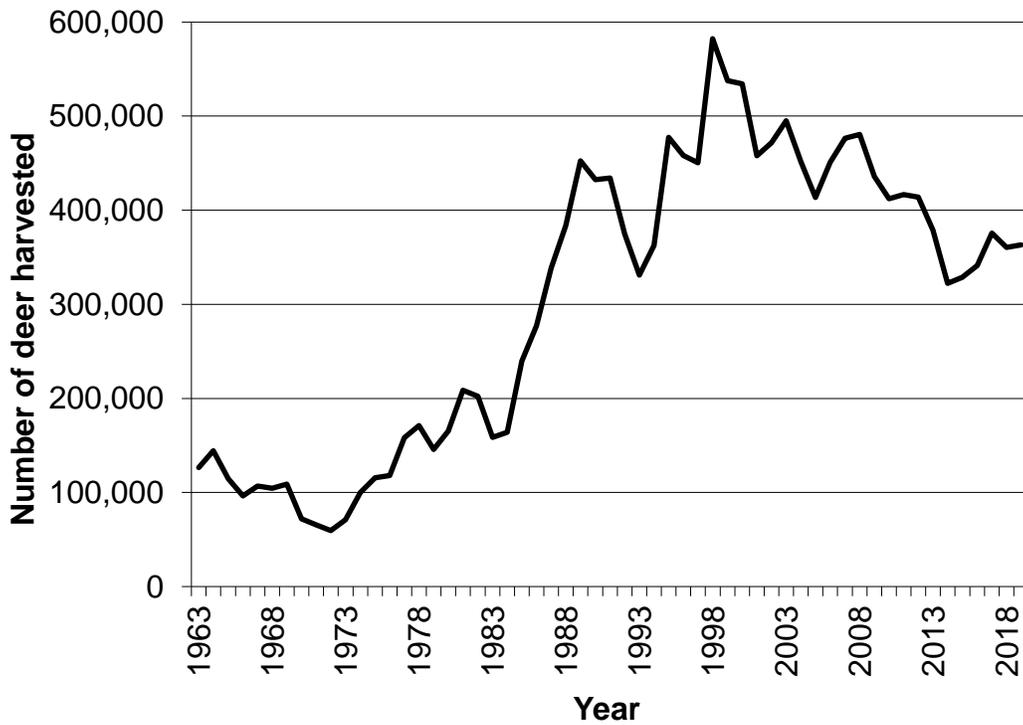


Figure 12. Number of deer harvested in Michigan's hunting seasons, 1963-2019. Harvest from all seasons and for all deer sexes was combined.

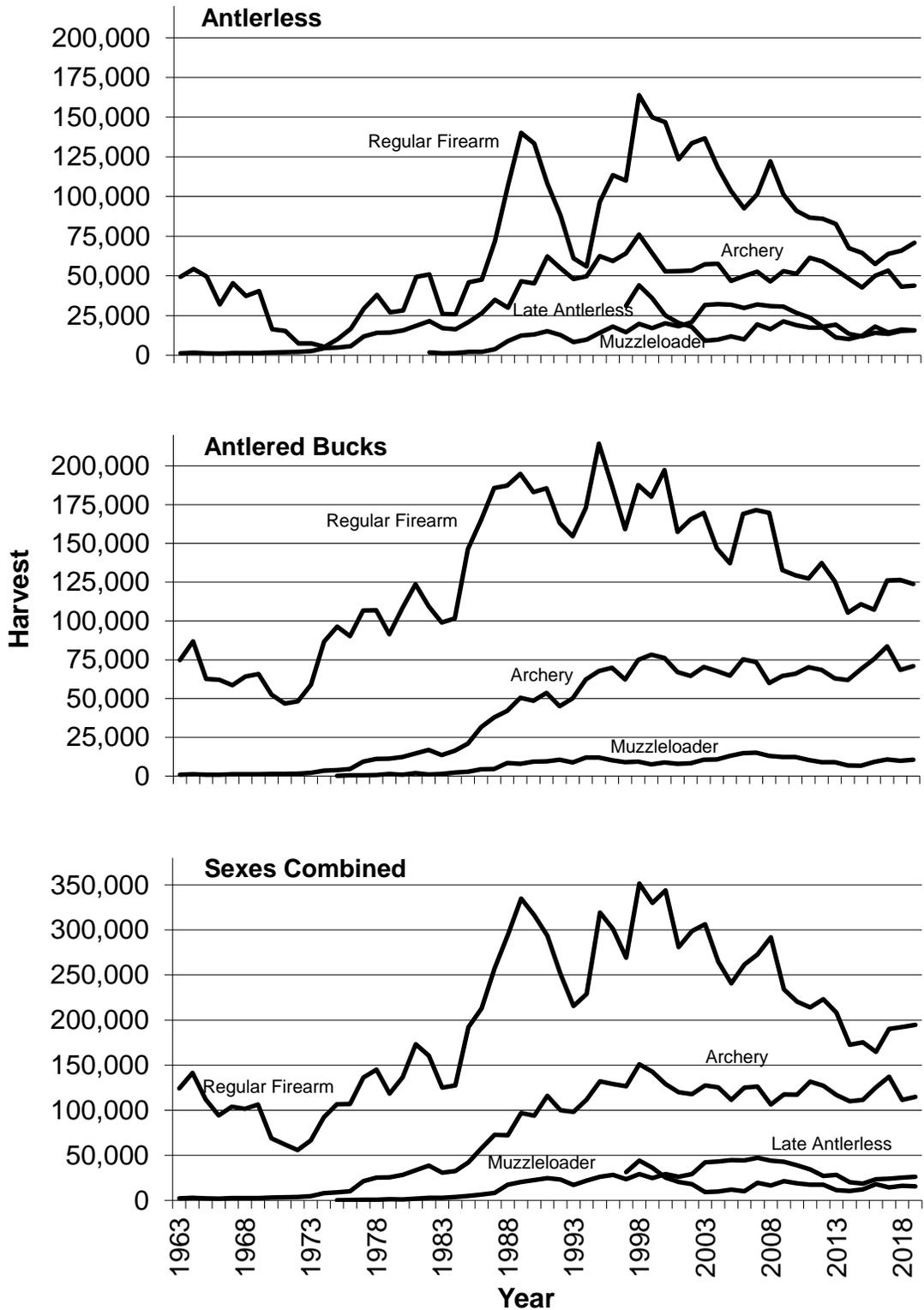


Figure 13. Number of deer harvested in Michigan's hunting seasons, 1963-2019. Harvests for early antlerless, youth, and hunters-with-disabilities seasons were not shown.

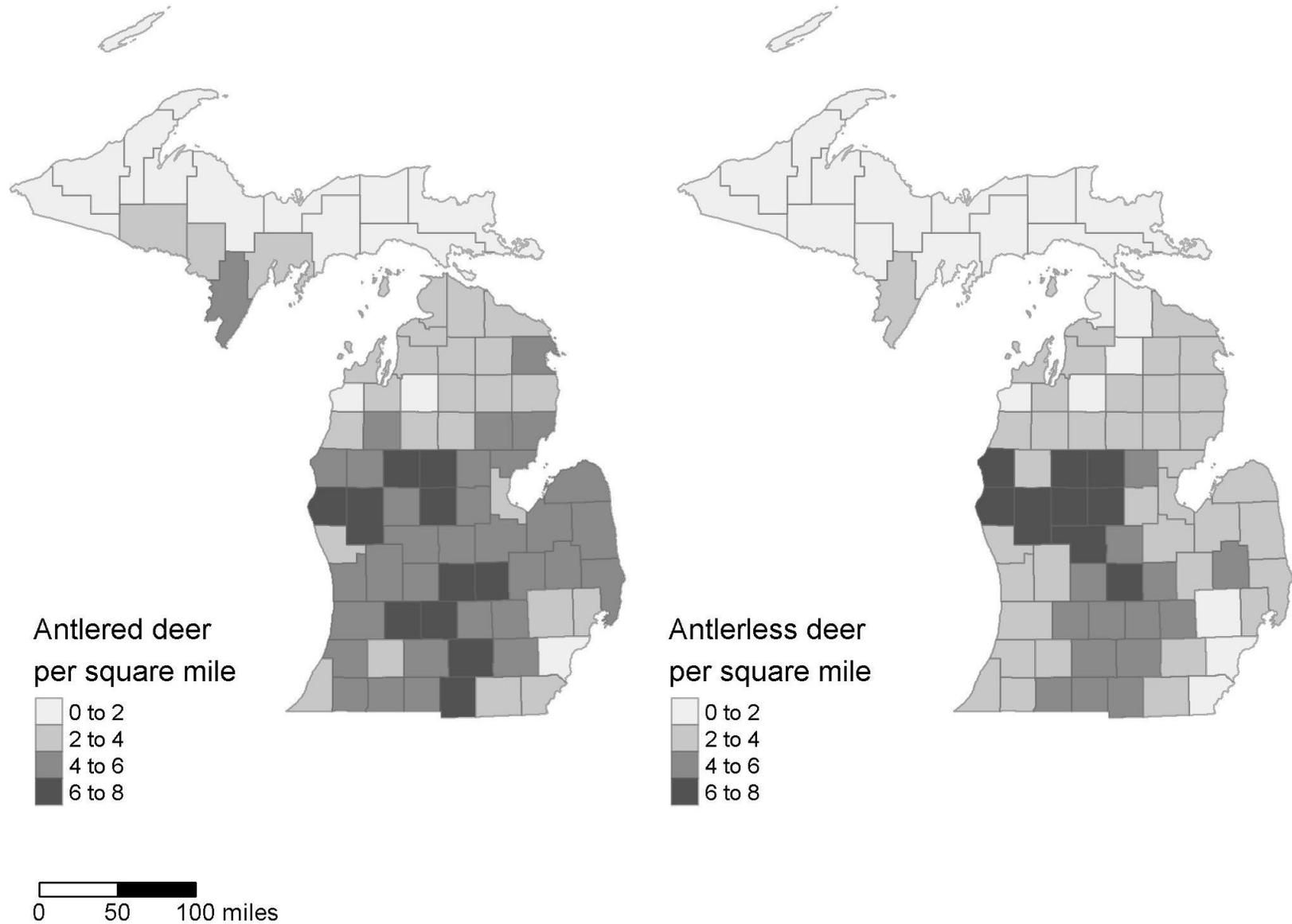


Figure 14. The harvest density of antlered (left) and antlerless (right) deer during all 2019 hunting seasons combined in Michigan.

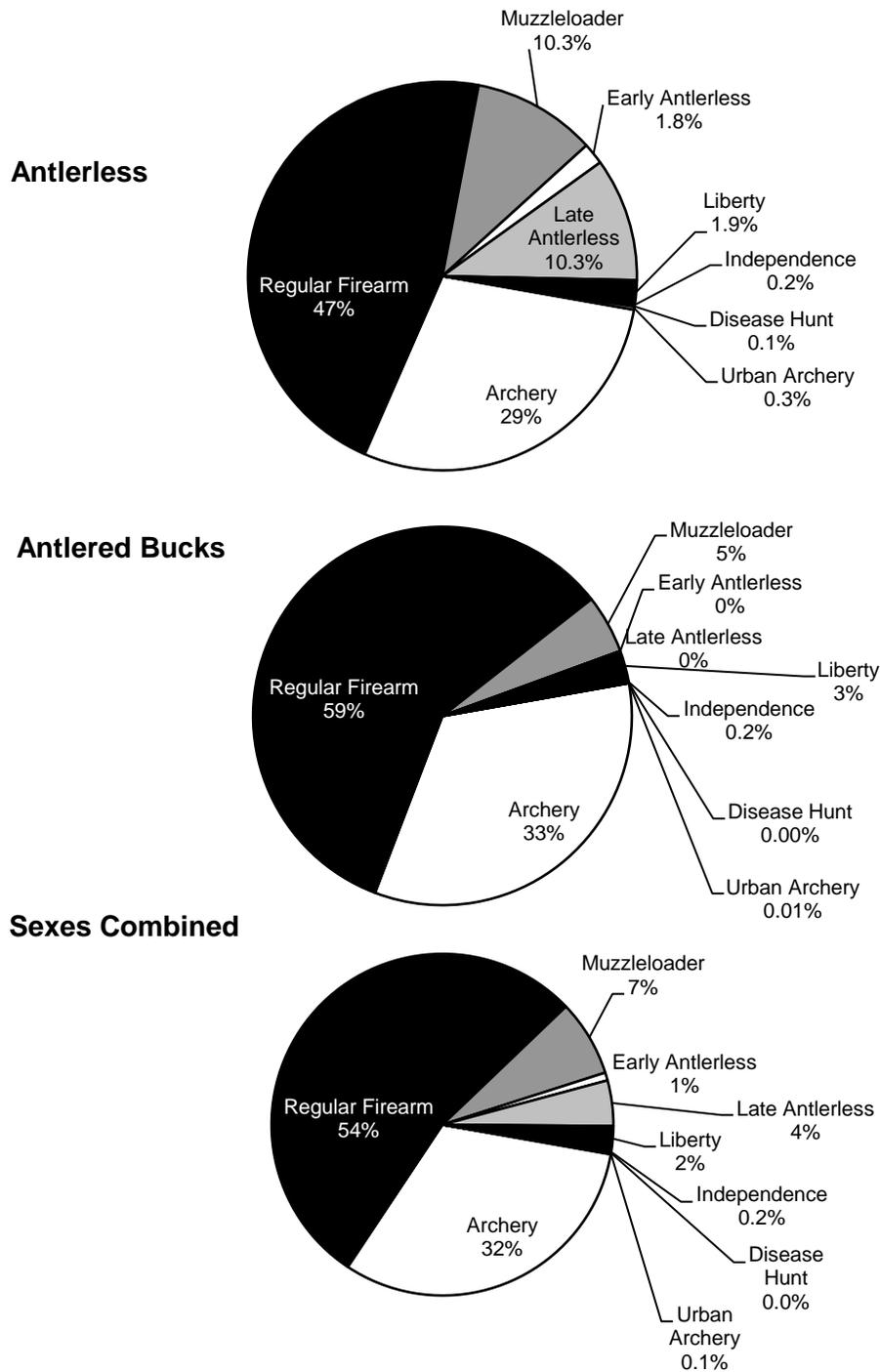


Figure 15. Distribution of harvest among deer hunting seasons in Michigan, 2019. Antlered deer had antlers at least 3 inches in length; antlerless deer included deer without antlers and deer with antlers less than 3 inches in length.

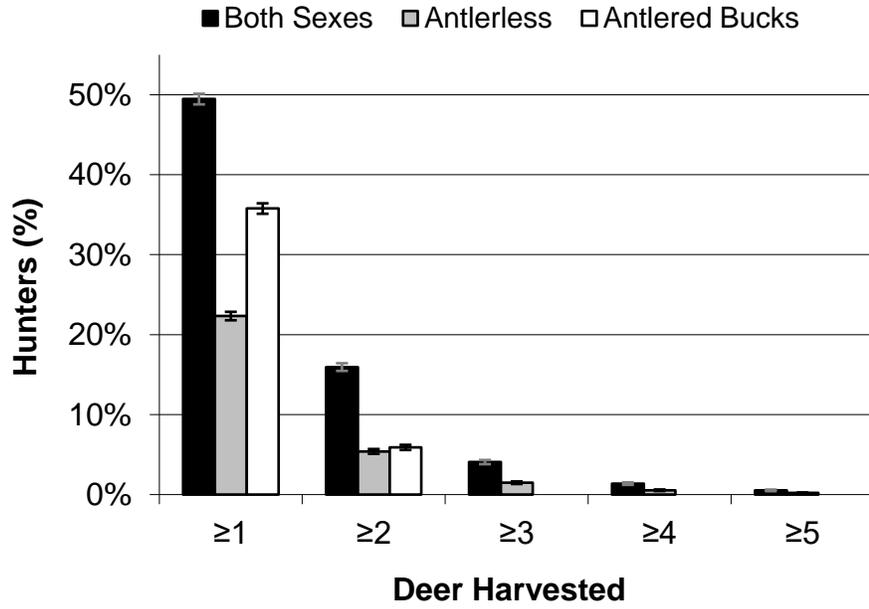


Figure 16. Percentage of hunters harvesting a deer in Michigan, 2019. Error bars represent the 95% CLs.

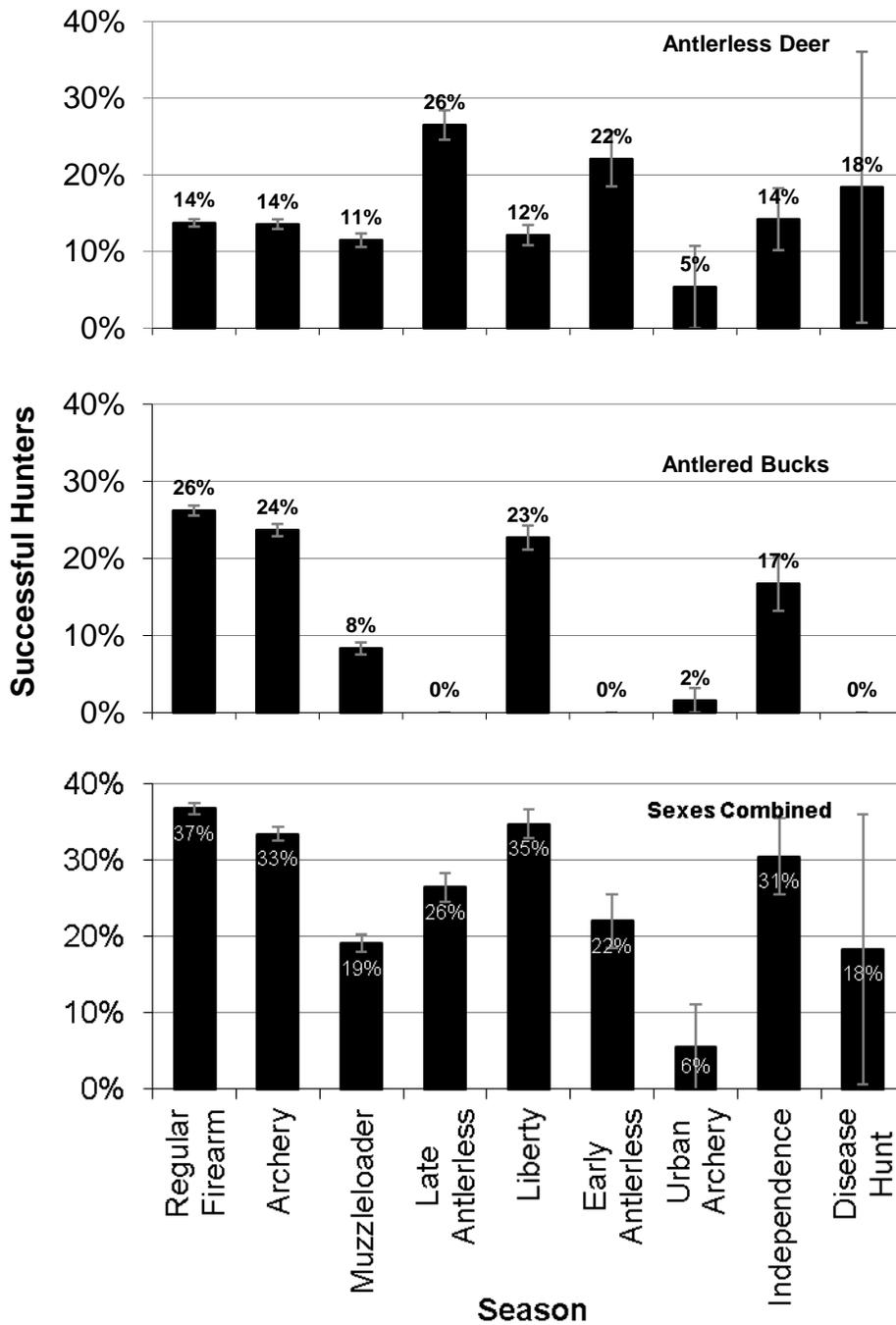


Figure 17. Percentage of hunters harvesting a deer in Michigan's deer hunting seasons, 2019. Error bars represent the 95% CLs. Antlered deer had at least one antler at least 3 inches in length; antlerless deer included deer without antlers and deer with

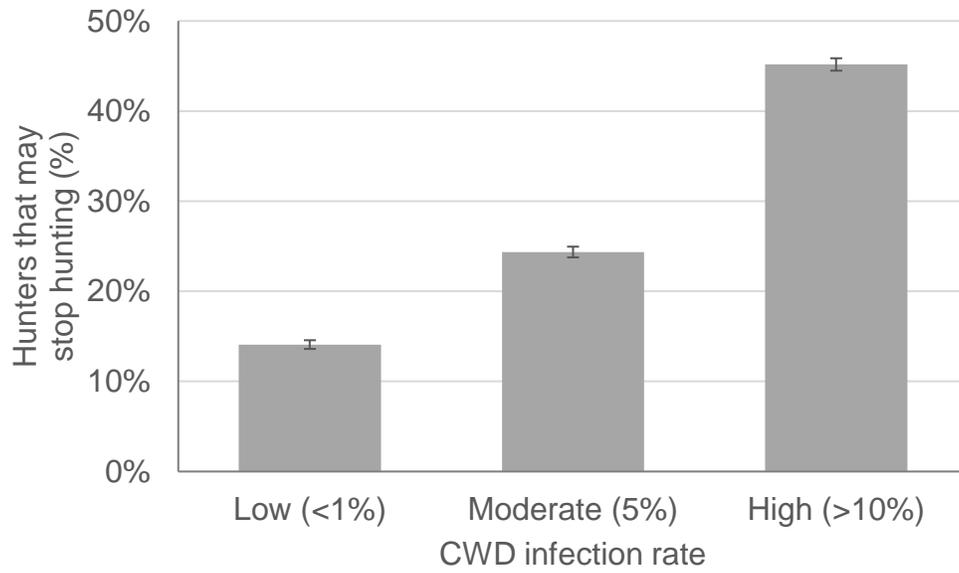


Figure 18. The proportion of hunters that may stop hunting deer based on CWD infection rate in the hunt area. Error bars represent the 95% CLs.

Table 1. Deer hunting seasons in Michigan, 2019-2020.

Season	Bag limit	Area	Dates
Liberty/Youth Hunt	1	Statewide	September 14-15
Early Antlerless Firearm	1 per kill tag	Portions of the LP	September 21-22
Independence Hunt	1	Statewide	October 17-20
Archery	1 per kill tag	Statewide	October 1 – November 14 and December 1 – January 1
Regular Firearm	1 per kill tag	Statewide	November 15-30
Muzzleloader	1 per kill tag	Statewide	December 6-15 (UP & NLP) and December 6-22 (SLP)
Late Antlerless Firearm	1 per kill tag	Portions of the LP	December 23-January 1
Late Urban Archery	1 per kill tag	Macomb, Oakland, and Wayne counties	January 2-31
Disease Surveillance Hunt	1 per kill tag	Portions of Alpena County	January 3-6 and January 10-13

Table 2. Type of deer that could be taken during the 2019 Michigan deer hunting seasons for each combination of season and hunting license.

Type of license (harvest tag) or permit	Season	Type of deer that could be harvested ^a and area
Deer license or deer combination regular license	Archery seasons	Antlered deer ^b throughout the Upper Peninsula (Zone 1), and antlerless deer in DMUs open to antlerless deer licenses.
Deer license or deer combination regular license	Archery seasons	Antlerless or antlered deer ^b in Lower Peninsula (zones 2 and 3)
Deer license or deer combination regular license	Regular Firearm or Muzzleloader seasons	Antlered deer statewide or antlerless deer in DMU 487 and the Core CWD Area ^c
Deer license or deer combination regular license	Liberty and Independence seasons	Antlerless or antlered deer statewide
Combination License ^d (Restricted harvest tag)	Archery seasons	Deer that has at least 1 antler with 4 or more antler points, 1 or more inches in length, in the Upper Peninsula and antlerless deer in DMUs open to antlerless deer licenses.
Combination License ^d (Restricted harvest tag)	Archery seasons	Antlerless deer or a deer that has at least 1 antler with 4 or more antler points, 1 or more inches in length, in the Lower Peninsula, except antler point restrictions do not apply in the CWD Management Zone or Core CWD Area
Combination License ^d (Restricted harvest tag)	Regular Firearm or Muzzleloader seasons	A deer that has at least 1 antler with 4 or more antler points (1 or more inches in length); Antler point restrictions do not apply in the CWD Management Zone ^e or Core CWD Area ^c
Combination License ^d (Restricted harvest tag)	Liberty and Independence seasons ^c	Antlerless or antlered deer statewide

^aAntlered deer had antlers at least 3 inches in length; antlerless deer included deer without antlers and deer with antlers less than 3 inches in length. Hunters could harvest a maximum of 2 antlered deer per year (all seasons combined).

^bIf a person took 2 antlered deer during all seasons combined (except Mentored Youth hunters), one of the antlered deer must have had at least 1 antler with 4 or more antler points, each point being 1 or more inches in length.

^cCore CWD area included Ionia, Kent, Mecosta, Montcalm, and Newaygo counties.

^dCombination licenses included two harvest tags (i.e., regular and restricted harvest tags).

^eCWD management zone included Calhoun, Clinton, Eaton, Gratiot, Hillsdale, Ingham, Ionia, Isabella, Jackson, Kent, Mecosta, Montcalm, Muskegon, Newaygo, Ottawa, and Shiawassee counties.

^fYouth less than 14 years of age could hunt with archery and crossbow equipment on public or private lands or with a firearm on private or Commercial Forest lands only. Hunters could harvest only 1 deer in the Liberty and Independence seasons.

^gPermits for special hunts on designated public lands (e.g., some state parks, game areas, and federal property). These permits valid only during specific dates, which varied among areas. Permits issued to applicants using a lottery (i.e., random selection). To use these permits, the hunter must also have purchased a valid deer hunting license.

Table 2 (continued). Type of deer that could be taken during the 2019 Michigan deer hunting seasons for each combination of season and hunting license.

Type of license (harvest tag) or permit	Season	Type of deer that could be harvested ^a
Mentored youth deer license	Archery , Regular Firearm, Muzzleloader, or Liberty seasons ^c	Antlerless or antlered deer statewide
Mentored Youth	Antlerless seasons	Antlerless deer only
Antlerless License ^e	All seasons	Antlerless deer only
Deer Management Assistance (DMA) permit ^f	All seasons	Antlerless deer only
Managed Deer Hunt permit ^g	Specified season	Antlerless deer only

^aAntlered deer had antlers at least 3 inches in length; antlerless deer included deer without antlers and deer with antlers less than 3 inches in length. Hunters could harvest a maximum of 2 antlered deer per year (all seasons combined).

^bIf a person took 2 antlered deer during all seasons combined (except Mentored Youth hunters), one of the antlered deer must have had at least 1 antler with 4 or more antler points, each point being 1 or more inches in length.

^cCore CWD Area included Ionia, Kent, Mecosta, Montcalm, and Newaygo counties.

^dCombination licenses included two harvest tags (i.e., regular and restricted harvest tags).

^eCWD Management Zone included Calhoun, Clinton, Eaton, Gratiot, Hillsdale, Ingham, Ionia, Isabella, Jackson, Kent, Mecosta, Montcalm, Muskegon, Newaygo, Ottawa, and Shiawassee counties.

^fYouth less than 14 years of age could hunt with archery and crossbow equipment on public or private lands or with a firearm on private or Commercial Forest lands only. Hunters could harvest only 1 deer in the Liberty and Independence seasons.

^gPermits for special hunts on designated public lands (e.g., some state parks, game areas, and federal property). These permits valid only during specific dates, which varied among areas. Permits issued to applicants using a lottery (i.e., random selection). To use these permits, the hunter must also have purchased a valid deer hunting license.

Table 3. Michigan deer licenses purchased and harvest tags issued, 2017-2019.

Licenses or Harvest Tags	Number Purchased or Issued			Change Between 2018 and 2019 (%)
	2017	2018	2019	
Deer Licenses				
Resident	139,464	130,352	126,284	-3.1
Non-resident	13,746	14,103	14,593	3.5
Junior	31,587	29,737	25,016	-15.9
Senior	36,882	35,404	34,779	-1.8
Lifetime	432	422	427	1.2
Active Military	411	362	361	-0.3
Disabled Veteran	492	531	527	-0.8
Subtotal	223,014	210,911	201,987	-4.2
Combination Licenses^a				
Resident	282,308	276,579	270,061	-2.4
Non-resident	3,960	4,252	4,579	7.7
Junior	20,811	19,093	18,371	-3.8
Senior	46,878	48,703	49,853	2.4
Lifetime	135	143	141	-1.4
Active Military	4,990	4,494	4,164	-7.3
Disabled Veteran	7,097	7,185	7,389	2.8
Subtotal	366,179	360,449	354,558	-1.6
Antlerless Licenses				
Resident	256,928	263,603	257,635	-2.3
Non-resident	4,807	5,337	5,750	7.7
Junior	17,578	16,627	15,798	-5.0
Senior	43,597	45,270	45,349	0.2
Lifetime	177	168	185	10.1
Active Military	4,411	4,587	4,340	-5.4
Pure Michigan Hunt	3	3	3	0.0
Disabled Veteran	6,041	7,553	7,819	3.5
Deer Management Assistance	10,967	11,661	13,602	16.6
Managed Deer Hunt	743	685	658	-3.9
Subtotal	345,252	355,494	351,139	-1.2
Mentored Youth Licenses	11,662	11,361	10,142	-10.7
Total Licenses Sold	946,107	938,215	917,826	-2.2

^aCombination licenses included two harvest tags. Other license types had one harvest tag.

Table 3 (continued). Michigan deer licenses purchased and harvest tags issued, 2017-2019.

Licenses or Harvest Tags	Number Purchased or Issued			Change Between 2018 and 2019 (%)
	2017	2018	2019	
Harvest Tags Issued				
Deer ^a	223,014	210,911	201,987	-4.2%
Combination ^b	732,358	720,898	709,116	-1.6%
Antlerless	345,252	355,494	351,139	-1.2%
Mentored Youth ^b	11,662	11,361	10,142	-10.7%
Total Harvest Tags	1,312,286	1,298,664	1,272,384	-2.0%

^aCombination licenses included two harvest tags. Other license types had one harvest tag.

Table 4. Number of deer hunters and hunting effort in Michigan by hunting season, 2018-2019.

Season and Area	Number of hunters ^a				Hunting effort (days)			
	2018	2019	95% CL ^b	Change from 2018 to 2019 (%)	2018	2019	95% CL ^b	Change from 2018 to 2019 (%)
Archery								
West UP	17,793	18,687	1,366	5.0	189,752	194,000	18,538	2.2
East UP	4,374	5,073	727	16.0	40,203	47,117	8,870	17.2
NE LP	46,329	44,486	2,063	-4.0	461,699	447,058	28,298	-3.2
NW LP	61,467	60,617	2,358	-1.4	740,005	706,949	37,508	-4.5
Sag. Bay	52,217	50,290	2,154	-3.7	601,818	587,618	34,331	-2.4
SW LP	48,327	50,149	2,154	3.8	588,032	618,338	35,576	5.2
SC LP	55,485	56,962	2,273	2.7	667,495	699,399	37,258	4.8
SE LP	33,079	32,037	1,762	-3.2	415,503	371,347	27,256	-10.6
UP	22,080	23,582	2,500	6.8	229,955	241,117	20,551	4.9
NLP	121,729	119,339	3,653	-2.0	1,378,516	1,330,078	50,474	-3.5
SLP	167,355	167,690	3,582	0.2	2,096,035	2,100,631	65,079	0.2
Statewide ^c	294,730	292,367	3,790	-0.8	3,704,506	3,671,826	85,107	-0.9
Regular Firearm								
West UP	55,781	55,790	2,259	0.0	360,908	382,330	18,888	5.9
East UP	16,147	15,617	1,265	-3.3	100,670	94,417	9,042	-6.2
NE LP	89,467	88,081	2,771	-1.5	507,877	508,509	20,504	0.1
NW LP	95,414	93,951	2,836	-1.5	538,734	540,341	20,950	0.3
Sag. Bay	77,109	75,719	2,568	-1.8	434,067	432,751	18,703	-0.3
SW LP	64,018	65,039	2,412	1.6	372,989	383,967	17,857	2.9
SC LP	75,816	80,064	2,620	5.6	422,567	462,636	19,648	9.5
SE LP	32,767	31,434	1,742	-4.1	181,251	173,980	11,847	-4.0
UP	71,659	71,141	1,527	-0.7	461,578	476,747	20,940	3.3
NLP	205,964	203,345	3,114	-1.3	1,175,571	1,186,835	31,188	1.0
SLP	221,855	223,174	3,420	0.6	1,281,914	1,315,348	32,889	2.6
Statewide ^c	483,341	475,038	2,727	-1.7*	2,919,063	2,978,931	50,085	2.1

^aExcluded people that did not hunt during the season.

^b95 confidence limit for the 2019 estimate. *P<0.05.

^cNumber of hunters does not add up to statewide total because hunters can hunt in more than one area.

Table 4 (continued). Number of deer hunters and hunting effort in Michigan by hunting season, 2018-2019.

Season and Area	Number of hunters ^a				Hunting effort (days)			
	2018	2019	95% CL ^b	Change from 2018 to 2019 (%)	2018	2019	95% CL ^b	Change from 2018 to 2019 (%)
Muzzleloader								
West UP	10,467	7,840	906	-25.1*	46,232	34,352	4,573	-25.7*
East UP	3,270	3,071	572	-6.1	15,510	14,624	3,113	-5.7
NE LP	15,703	14,360	1,217	-8.5	60,308	60,837	5,901	0.9
NW LP	19,463	18,667	1,372	-4.1	77,199	74,696	6,552	-3.2
Sag. Bay	22,966	21,778	1,463	-5.2	99,782	94,285	7,781	-5.5
SW LP	25,426	25,247	1,573	-0.7	119,341	122,553	9,265	2.7
SC LP	28,834	30,255	1,710	4.9	128,072	140,848	9,819	10.0
SE LP	14,221	13,412	1,168	-5.7	65,782	65,307	6,843	-0.7
UP	13,652	10,881	1,065	-20.3*	61,742	48,976	5,532	-20.7*
NLP	39,804	37,959	1,925	-4.6	157,049	154,504	9,379	-1.6
SLP	84,713	83,709	2,670	-1.2	393,435	404,021	16,715	2.7
Statewide ^c	137,634	130,593	3,197	-5.1*	612,226	607,500	20,025	-0.8
Early Antlerless								
West UP	0	0	0		0	0	0	
East UP	0	0	0		0	0	0	
NE LP	1,782	1,554	379	-12.8	2,762	2,383	611	-13.7
NW LP	2,061	2,482	472	20.4	3,053	3,428	709	12.3
Sag. Bay	3,693	2,521	475	-31.8*	5,235	3,413	709	-34.8*
SW LP	478	742	259	55.2	551	1,005	380	82.4
SC LP	2,858	2,983	513	4.4	3,905	4,286	787	9.8
SE LP	1,707	2,035	432	19.2	2,423	2,701	605	11.4
UP	0	0	0		0	0	0	
NLP	4,526	4,861	661	7.4	6,934	6,944	1,029	0.1
SLP	8,025	7,407	806	-7.7	10,995	10,271	1,204	-6.6
Statewide ^c	13,057	12,403	661	-5.0	17,929	17,215	1,595	-4.0

^aExcluded people that did not hunt during the season.

^b95 confidence limit for the 2019 estimate. *P<0.05.

^cNumber of hunters does not add up to statewide total because hunters can hunt in more than one area.

Table 4 (continued). Number of deer hunters and hunting effort in Michigan by hunting season, 2018-2019.

Season and Area	Number of hunters ^a				Hunting effort (days)			
	2018	2019	95% CL ^b	Change from 2018 to 2019 (%)	2018	2019	95% CL ^b	Change from 2018 to 2019 (%)
Late Antlerless								
West UP	0	0	0		0	0	0	
East UP	0	0	0		0	0	0	
NE LP	4,378	4,249	663	-2.9	15,133	15,056	2,843	-0.5
NW LP	8,291	8,120	892	-2.1	32,136	25,017	3,302	-22.2
Sag. Bay	11,864	9,617	968	-18.9*	42,453	28,125	3,418	-33.7*
SW LP	12,121	10,846	1,028	-10.5	45,344	33,078	3,843	-27.0*
SC LP	14,777	15,100	1,210	2.2	52,572	46,068	4,614	-12.4
SE LP	5,751	5,808	762	1.0	21,882	19,794	3,074	-9.5
UP	0	0	0		0	0	0	
NLP	15,163	14,420	1,184	-4.9	56,966	46,448	4,654	-18.5*
SLP	41,482	38,867	1,859	-6.3	152,552	120,691	7,384	-20.9*
Statewide ^c	57,973	53,443	2,129	-7.8*	209,519	167,139	8,747	-20.2*
Liberty/Youth^d								
West UP	2,047	1,569	241	-23.3	3,034	2,477	407	-18.4
East UP	382	346	128	-9.3	599	577	218	-3.6
NE LP	3,373	2,717	350	-19.5	5,218	4,410	597	-15.5
NW LP	6,565	5,292	451	-19.4*	10,398	8,083	758	-22.3*
Sag. Bay	5,814	5,208	435	-10.4	9,099	8,178	764	-10.1
SW LP	3,645	4,000	408	9.7	5,464	5,948	672	8.9
SC LP	4,755	4,421	406	-7.0	7,040	6,726	665	-4.5
SE LP	2,746	2,437	347	-11.2	4,187	3,651	525	-12.8
UP	2,429	1,915	272	-21.1	3,633	3,054	462	-15.9
NLP	11,386	9,461	598	-16.9*	17,893	14,660	1,046	-18.1*
SLP	15,464	14,511	694	-6.2	23,514	22,336	1,261	-5.0
Statewide ^c	29,576	26,059	835	-11.9*	45,040	40,051	1,708	-11.1*

^aExcluded people that did not hunt during the season.

^b95 confidence limit for the 2019 estimate. *P<0.05.

^cNumber of hunters does not add up to statewide total because hunters can hunt in more than one area.

^dEstimates included results of both youth and disabled hunters.

Table 4 (continued). Number of deer hunters and hunting effort in Michigan by hunting season, 2018-2019.

Season and Area	Number of hunters ^a				Hunting effort (days)			
	2018	2019	95% CL ^b	Change from 2018 to 2019 (%)	2018	2019	95% CL ^b	Change from 2018 to 2019 (%)
Independence								
West UP	173	149	34	-13.7	384	390	112	1.3
East UP	77	47	15	-38.7	246	115	41	-53.3
NE LP	270	290	93	7.2	675	782	293	15.8
NW LP	454	523	125	15.2	968	1,188	242	22.7
Sag. Bay	272	441	134	61.8	614	784	198	27.7
SW LP	226	171	49	-24.7	491	353	97	-28.3
SC LP	349	353	104	1.2	801	749	215	-6.5
SE LP	270	155	64	-42.7	592	342	127	-42.3
UP	251	197	37	-21.4	630	504	119	-20.0
NLP	827	993	178	20.0	1,875	2,332	409	24.4
SLP	997	939	166	-5.8	2,267	1,865	296	-17.7
Statewide ^c	2,154	2,144	245	-0.5	4,772	4,701	520	-1.5
Urban Archery								
West UP	0	0	0		0	0	0	
East UP	0	0	0		0	0	0	
NE LP	0	0	0		0	0	0	
NW LP	0	0	0		0	0	0	
Sag. Bay	0	0	0		0	0	0	
SW LP	0	0	0		0	0	0	
SC LP	0	0	0		0	0	0	
SE LP	2,840	3,330	593	17.2	12,787	16,157	3,834	26.4
UP	0	0	0		0	0	0	
NLP	0	0	0		0	0	0	
SLP	2,840	3,330	593	17.2	12,787	16,157	3,834	26.4
Statewide ^c	2,895	3,330	593	17.2	12,787	16,157	3,834	26.4

^aExcluded people that did not hunt during the season.

^b95 confidence limit for the 2019 estimate. *P<0.05.

^cNumber of hunters does not add up to statewide total because hunters can hunt in more than one area.

Table 4 (continued). Number of deer hunters and hunting effort in Michigan by hunting season, 2018-2019.

Season and Area	Number of hunters ^a				Hunting effort (days)			
	2018	2019	95% CL ^b	Change from 2018 to 2019 (%)	2018	2019	95% CL ^b	Change from 2018 to 2019 (%)
Disease Hunt								
West UP	0	0	0		0	0	0	
East UP	0	0	0		0	0	0	
NE LP	200	500	231	150.5	708	1,350	710	90.7
NW LP	0	0	0		0	0	0	
Sag. Bay	0	0	0		0	0	0	
SW LP	0	0	0		0	0	0	
SC LP	0	0	0		0	0	0	
SE LP	0	0	0		0	0	0	
UP	0	0	0		0	0	0	
NLP	200	500	231	150.5	708	1,350	710	90.7
SLP	0	0	0		0	0	0	
Statewide ^c	200	500	231	150.5	708	1,350	710	90.7
All Seasons								
West UP	62,148	61,924	2,355	-0.4	600,104	613,513	32,989	2.2
East UP	18,051	17,750	1,343	-1.7	157,137	156,827	16,245	-0.2
NE LP	103,668	100,547	2,912	-3.0	1,054,324	1,040,450	46,513	-1.3
NW LP	114,027	111,126	3,014	-2.5	1,402,712	1,359,921	56,408	-3.1
Sag. Bay	94,127	90,513	2,747	-3.8	1,193,020	1,155,265	53,005	-3.2
SW LP	79,460	81,619	2,647	2.7	1,132,198	1,165,358	54,357	2.9
SC LP	96,235	98,412	2,839	2.3	1,282,406	1,360,806	58,940	6.1
SE LP	48,438	46,087	2,072	-4.9	704,649	652,730	42,026	-7.4
UP	79,571	79,191	2,604	-0.5	757,241	770,340	36,772	1.7
NLP	240,871	234,728	3,742	-2.6	2,795,708	2,743,486	78,417	-1.9
SLP	278,922	276,832	3,662	-0.7	3,973,600	3,991,044	100,997	0.4
Statewide ^c	554,331	540,174	1,628	-2.6*	7,526,549	7,504,870	133,449	-0.3

^aExcluded people that did not hunt during the season.

^b95 confidence limit for the 2019 estimate. *P<0.05.

^cNumber of hunters does not add up to statewide total because hunters can hunt in more than one area.

Table 5. Mean number of days hunters spent hunting deer (\bar{x} hunting effort) in Michigan by hunting season, 2019.^a

Area	Season							
	Archery		Regular Firearm		Muzzleloader		Early Antlerless	
	\bar{x} days	95% CL ^b	\bar{x} days	95% CL ^b	\bar{x} days	95% CL ^b	\bar{x} days	95% CL ^b
West UP	11.1	0.7	7.3	0.2	4.7	0.3	0.0	0.0
East UP	10.0	1.2	6.4	0.3	5.2	0.5	0.0	0.0
NE LP	10.7	0.5	6.2	0.1	4.5	0.2	1.6	0.1
NW LP	12.5	0.4	6.2	0.1	4.3	0.2	1.6	0.1
Sag. Bay	12.5	0.5	6.2	0.1	4.7	0.2	1.6	0.1
SW LP	13.3	0.5	6.4	0.2	5.3	0.2	1.5	0.2
SC LP	13.3	0.5	6.3	0.1	5.1	0.2	1.6	0.1
SE LP	12.4	0.6	6.0	0.2	5.2	0.3	1.4	0.1
UP	10.9	0.6	7.1	0.2	4.8	0.3	0.0	0.0
NLP	11.9	0.3	6.3	0.1	4.4	0.1	1.6	0.1
SLP	13.5	0.3	6.4	0.1	5.2	0.1	1.5	0.1
Statewide	13.6	0.2	6.8	0.1	5.1	0.1	1.6	0.0

^aExcluded people that did not hunt during the season.

^b95 confidence limit.

Table 5 (continued). Mean number of days hunters spent hunting deer (\bar{x} hunting effort) in Michigan by hunting season, 2019.^a

Area	Season							
	Late Antlerless		Liberty (Youth)		Independence		Urban Archery	
	\bar{x} days	95% CL ^b	\bar{x} days	95% CL ^b	\bar{x} days	95% CL ^b	\bar{x} days	95% CL ^b
West UP	0.0	0.0	1.6	0.1	2.8	0.3	0.0	0.0
East UP	0.0	0.0	1.8	0.2	2.7	0.4	0.0	0.0
NE LP	4.0	0.4	1.7	0.1	2.8	0.3	0.0	0.0
NW LP	3.5	0.2	1.6	0.0	2.4	0.2	0.0	0.0
Sag. Bay	3.3	0.2	1.6	0.0	2.1	0.2	0.0	0.0
SW LP	3.6	0.2	1.5	0.1	2.2	0.3	0.0	0.0
SC LP	3.6	0.2	1.6	0.0	2.5	0.2	0.0	0.0
SE LP	3.8	0.3	1.6	0.1	2.3	0.3	5.2	0.9
UP	0.0	0.0	1.7	0.1	2.8	0.2	0.0	0.0
NLP	3.6	0.2	1.6	0.0	2.5	0.2	0.0	0.0
SLP	3.6	0.1	1.6	0.0	2.3	0.1	5.2	0.9
Statewide	3.6	0.1	1.6	0.0	2.5	0.1	5.3	0.9

^aExcluded people that did not hunt during the season.

^b95 confidence limit.

Table 5 (continued). Mean number of days hunters spent hunting deer (\bar{x} hunting effort) in Michigan by hunting season, 2019.^a

Area	Season			
	Disease Hunt		All Seasons	
	\bar{x} days	95% CL ^b	\bar{x} days	95% CL ^b
West UP	0.0	0.0	10.6	0.4
East UP	0.0	0.0	9.4	0.7
NE LP	2.8	0.7	11.0	0.4
NW LP	0.0	0.0	13.1	0.4
Sag. Bay	0.0	0.0	13.6	0.4
SW LP	0.0	0.0	15.3	0.5
SC LP	0.0	0.0	14.9	0.5
SE LP	0.0	0.0	15.1	0.7
UP	0.0	0.0	10.4	0.3
NLP	2.8	0.7	12.5	0.3
SLP	0.0	0.0	15.5	0.3
Statewide	2.8	0.7	15.0	0.2

^aExcluded people that did not hunt during the season.

^b95 confidence limit.

Table 6. Number of deer harvested in Michigan, 2017-2019.

Season or permit	Type of deer	2017	2018	2019	Change from 2018 to 2019 (%)
Season					
Archery	Antlerless	53,404	43,235	43,868	1.5
	Antlered bucks	83,655	68,382	70,917	3.7
	Sexes combined	137,059	111,617	114,785	2.8
Regular firearm	Antlerless	63,898	65,824	70,782	7.5
	Antlered bucks	126,167	126,396	123,813	-2.0
	Sexes combined	190,065	192,221	194,594	1.2
Muzzleloader	Antlerless	13,427	15,339	15,674	2.2
	Antlered bucks	10,632	9,915	10,591	6.8
	Sexes combined	24,058	25,254	26,265	4.0
Early antlerless	Antlerless	2,231	4,523	2,736	-39.5*
Late antlerless	Antlerless	14,340	16,167	15,667	-3.1
Liberty/Youth ^{a,b}	Antlerless	2,282	3,308	2,966	-10.4
	Antlered bucks	4,911	6,753	5,544	-17.9*
	Sexes combined	7,193	10,062	8,510	-15.4*
Independence ^b	Antlerless	248	194	286	47.4
	Antlered bucks	236	280	336	20.0
	Sexes combined	485	474	622	31.2
Urban Archery	Antlerless	477	295	384	30.2
	Antlered bucks	52	27	26	-1.9
	Sexes combined	530	322	410	27.5
Disease Hunt	Antlerless	401	26	88	240.6
	Antlered bucks	2	0	0	
	Sexes combined	403	26	88	240.6
Special permits ^c	Antlerless	9,189	6,986	7,270	4.1
Grand Total	Antlerless	159,898	155,898	159,721	2.5
	Antlered bucks	225,656	211,754	211,228	-0.2
	Sexes combined	385,554	367,652	370,948	0.9

^aEstimates for Liberty hunt included results of both youth and hunters with disabilities.

^bHunters with disabilities could hunt in both the Liberty and Independence seasons.

^cIncludes deer harvested with DMA permits. These permits could be used during any deer hunting season.

*P<0.05.

Table 7. Number of deer harvested in Michigan by hunting season, 2018-2019.^a

Season and Area	Antlerless				Antlered Bucks				Sexes Combined			
	2018 Harvest	2019 Harvest	95% CL ^b	Change from 2018 to 2019 (%)	2018 Harvest	2019 Harvest	95% CL ^b	Change from 2018 to 2019	2018 Harvest	2019 Harvest	95% CL ^b	Change from 2018 to 2019
Archery												
West UP	1,240	1,629	457	31.4	4,237	4,022	653	-5.1	5,478	5,653	828	3.2
East UP	29	85	93	196.3	742	826	294	11.3	771	912	317	18.4
NE LP	5,708	5,554	816	-2.7	6,661	7,217	893	8.4	12,368	12,769	1,285	3.2
NW LP	9,261	8,798	1,030	-5.0	9,977	11,470	1,120	15.0	19,237	20,265	1,640	5.3
Sag. Bay	8,884	7,010	934	-21.1	12,397	10,772	1,065	-13.1	21,281	17,781	1,526	-16.4*
SW LP	6,081	7,798	1,004	28.2	12,306	13,997	1,269	13.7	18,388	21,797	1,774	18.5*
SC LP	7,632	9,256	1,057	21.3	14,429	15,817	1,326	9.6	22,061	25,075	1,870	13.7
SE LP	4,400	3,736	653	-15.1	7,633	6,796	847	-11.0	12,033	10,532	1,158	-12.5
UP	1,269	1,715	466	35.2	4,979	4,848	716	-2.6	6,248	6,566	887	5.1
NLP	17,498	16,759	1,425	-4.2	19,888	21,518	1,528	8.2	37,385	38,269	2,232	2.4
SLP	24,468	25,394	1,767	3.8	43,515	44,551	2,222	2.4	67,984	69,950	3,110	2.9
Statewide	43,235	43,868	2,327	1.5	68,382	70,917	2,793	3.7	111,617	114,785	3,938	2.8
Regular Firearm												
West UP	2,542	3,124	620	22.9	18,949	15,856	1,287	-16.3*	21,503	18,977	1,492	-11.7
East UP	28	30	54	6.4	4,573	3,386	581	-26.0	4,605	3,416	583	-25.8
NE LP	11,696	11,809	1,212	1.0	20,198	18,537	1,416	-8.2	31,892	30,347	1,977	-4.8
NW LP	14,529	14,905	1,359	2.6	17,990	19,072	1,420	6.0	32,510	33,979	2,108	4.5
Sag. Bay	12,069	12,425	1,188	2.9	21,133	20,007	1,461	-5.3	33,201	32,432	2,003	-2.3
SW LP	8,964	9,691	1,102	8.1	15,932	18,214	1,384	14.3	24,895	27,904	1,917	12.1
SC LP	12,439	15,289	1,375	22.9*	20,795	21,864	1,541	5.1	33,231	37,154	2,235	11.8
SE LP	3,558	3,509	629	-1.4	6,826	6,877	845	0.7	10,384	10,385	1,103	0.0
UP	2,570	3,154	622	22.7	23,522	19,242	1,412	-18.2*	26,108	22,393	1,602	-14.2*
NLP	30,091	30,675	1,945	1.9	43,935	42,778	2,137	-2.6	74,013	73,455	3,077	-0.8
SLP	33,163	36,953	2,109	11.4	58,940	61,792	2,568	4.8	92,099	98,746	3,575	7.2
Statewide	65,824	70,782	2,940	7.5	126,396	123,813	3,634	-2.0	192,221	194,594	4,990	1.2

^aHarvest estimates do not include deer taken with DMA permits. An additional 7,270 deer were taken with these permits.

^b95 confidence limit for the 2019 estimate. *P<0.05.

Table 7 (continued). Number of deer harvested in Michigan by hunting season, 2018-2019.^a

Season and Area	Antlerless				Antlered Bucks				Sexes Combined			
	2018 Harvest	2019 Harvest	95% CL ^b	Change from 2018 to 2019 (%)	2018 Harvest	2019 Harvest	95% CL ^b	Change from 2018 to 2019	2018 Harvest	2019 Harvest	95% CL ^b	Change from 2018 to 2019
Muzzleloader												
West UP	642	743	310	15.6	1,000	808	286	-19.2	1,642	1,551	435	-5.5
East UP	26	28	54	8.1	409	449	214	9.6	435	478	221	9.9
NE LP	1,584	989	407	-37.6	873	796	291	-8.8	2,457	1,785	501	-27.4
NW LP	2,315	2,618	547	13.1	800	711	259	-11.1	3,115	3,326	610	6.8
Sag. Bay	2,863	2,868	575	0.2	1,464	1,886	454	28.9	4,327	4,753	747	9.8
SW LP	2,774	3,106	568	12.0	2,154	2,379	496	10.5	4,928	5,486	780	11.3
SC LP	3,965	4,260	694	7.4	2,432	2,654	527	9.1	6,397	6,913	909	8.1
SE LP	1,170	1,062	320	-9.2	785	909	320	15.8	1,954	1,972	469	0.9
UP	669	771	315	15.3	1,409	1,256	357	-10.8	2,076	2,029	488	-2.3
NLP	4,192	4,190	727	-0.1	1,903	1,792	424	-5.9	6,096	5,978	845	-1.9
SLP	10,479	10,714	1,084	2.2	6,603	7,543	896	14.2	17,082	18,258	1,457	6.9
Statewide	15,339	15,674	1,351	2.2	9,915	10,591	1,058	6.8	25,254	26,265	1,762	4.0
Early Antlerless												
West UP	0	0	0		0	0	0	0	0	0	0	
East UP	0	0	0		0	0	0	0	0	0	0	
NE LP	603	420	210	-30.4	0	0	0	0	603	420	210	-30.4
NW LP	668	576	245	-13.9	0	0	0	0	668	576	245	-13.9
Sag. Bay	1,522	457	202	-70.0*	0	0	0	0	1,522	457	202	-70.0*
SW LP	166	200	136		0	0	0	0	166	200	136	
SC LP	1,181	679	251	-42.5	0	0	0	0	1,181	679	251	-42.5
SE LP	382	405	204	6.1	0	0	0	0	382	405	204	6.1
UP	0	0	0		0	0	0	0	0	0	0	
NLP	1,436	1,154	343	-19.7	0	0	0	0	1,436	1,154	343	-19.7
SLP	3,086	1,583	388	-48.7*	0	0	0	0	3,086	1,583	388	-48.7*
Statewide	4,523	2,736	517	-39.5*	0	0	0	0	4,523	2,736	517	-39.5*

^aHarvest estimates do not include deer taken with DMA permits. An additional 7,270 deer were taken with these permits.

^b95 confidence limit for the 2019 estimate. *P<0.05.

Table 7 (continued). Number of deer harvested in Michigan by hunting season, 2018-2019.^a

Season and Area	Antlerless				Antlered Bucks				Sexes Combined			
	2018 Harvest	2019 Harvest	95% CL ^b	Change from 2018 to 2019 (%)	2018 Harvest	2019 Harvest	95% CL ^b	Change from 2018 to 2019	2018 Harvest	2019 Harvest	95% CL ^b	Change from 2018 to 2019
Late Antlerless												
West UP	0	0	0		0	0	0	0	0	0	0	
East UP	0	0	0		0	0	0	0	0	0	0	
NE LP	1,198	1,282	423	7.0	0	0	0	0	1,198	1,282	423	7.0
NW LP	2,617	2,764	598	5.6	0	0	0	0	2,617	2,764	598	5.6
Sag. Bay	4,132	2,932	570	-29.0	0	0	0	0	4,132	2,932	570	-29.0
SW LP	2,734	2,962	630	8.3	0	0	0	0	2,734	2,962	630	8.3
SC LP	4,311	4,526	760	5.0	0	0	0	0	4,311	4,526	760	5.0
SE LP	1,177	1,200	347	2.0	0	0	0	0	1,177	1,200	347	2.0
UP	0	0	0		0	0	0	0	0	0	0	
NLP	4,743	4,528	761	-4.5	0	0	0	0	4,743	4,528	761	-4.5
SLP	11,424	11,139	1,174	-2.5	0	0	0	0	11,424	11,139	1,174	-2.5
Statewide	16,167	15,667	1,404	-3.1	0	0	0	0	16,167	15,667	1,404	-3.1
Liberty (Youth)^c												
West UP	315	198	87	-37.2	490	348	117	-29.0	805	546	146	-32.2
East UP	46	17	22	-63.4	95	64	62	-33.3	142	81	66	-43.1
NE LP	415	309	100	-25.6	704	429	108	-39.0	1,119	738	147	-34.1
NW LP	906	724	171	-20.1	1,598	1,115	178	-30.2	2,505	1,837	247	-26.6
Sag. Bay	512	534	142	4.3	1,554	1,338	198	-13.9	2,064	1,873	243	-9.3
SW LP	359	467	149	29.9	624	661	142	5.9	984	1,127	206	14.5
SC LP	551	458	120	-16.8	1,168	1,097	190	-6.1	1,719	1,557	225	-9.5
SE LP	204	259	103	27.3	521	493	133	-5.3	724	752	168	3.9
UP	361	215	89	-40.6	585	412	133	-29.7	947	626	160	-33.8
NLP	1,542	1,241	216	-19.5	2,684	1,920	232	-28.5	4,227	3,160	317	-25.3
SLP	1,405	1,510	245	7.4	3,484	3,213	321	-7.8	4,888	4,724	403	-3.3
Statewide	3,308	2,966	343	-10.4	6,753	5,544	418	-17.9	10,062	8,510	540	-15.4

^aHarvest estimates do not include deer taken with DMA permits. An additional 7,270 deer were taken with these permits.

^b95 confidence limit for the 2019 estimate. *P<0.05.

^cEstimates included results of both youth and hunters with disabilities.

Table 7 (continued). Number of deer harvested in Michigan by hunting season, 2018-2019.^a

Season and Area	Antlerless				Antlered Bucks				Sexes Combined			
	2018 Harvest	2019 Harvest	95% CL ^b	Change from 2018 to 2019 (%)	2018 Harvest	2019 Harvest	95% CL ^b	Change from 2018 to 2019	2018 Harvest	2019 Harvest	95% CL ^b	Change from 2018 to 2019
Independence												
West UP	25	40	19	58.4	30	32	23	5.8	55	72	37	29.8
East UP	2	0	0	-100.0	10	13	7	30.8	12	13	7	8.6
NE LP	30	53	55	77.4	26	59	57	125.5	56	112	79	99.8
NW LP	65	90	57	38.1	69	64	17	-6.1	134	155	59	15.6
Sag. Bay	23	47	25	103.3	43	78	27	83.7	66	125	37	90.4*
SW LP	4	22	17	468.8	43	20	9	-53.8	47	42	19	-10.9
SC LP	29	25	11	-13.4	37	38	13	4.2	66	63	17	-3.7
SE LP	15	8	6	-45.9	23	32	12	38.1	38	40	13	4.0
UP	27	40	19	47.1	40	45	24	11.9	67	84	38	26.1
NLP	105	164	81	56.6	116	155	64	33.8	221	320	103	44.7
SLP	62	82	28	32.0	124	136	24	9.8	186	218	37	17.1
Statewide	194	286	88	47.4	280	336	73	20.0	474	622	116	31.2
Urban Archery												
West UP	0	0	0		0	0	0		0	0	0	
East UP	0	0	0		0	0	0		0	0	0	
NE LP	0	0	0		0	0	0		0	0	0	
NW LP	0	0	0		0	0	0		0	0	0	
Sag. Bay	0	0	0		0	0	0		0	0	0	
SW LP	0	0	0		0	0	0		0	0	0	
SC LP	0	0	0		0	0	0		0	0	0	
SE LP	295	384	235	30.2	27	26	51	-1.9	322	410	240	27.5
UP	0	0	0		0	0	0		0	0	0	
NLP	0	0	0		0	0	0		0	0	0	
SLP	295	384	235	30.2	27	26	51	-1.9	322	410	240	27.5
Statewide	295	384	235	30.2	27	26	51	-1.9	322	410	240	27.5

^aHarvest estimates do not include deer taken with DMA permits. An additional 7,270 deer were taken with these permits.

^b95 confidence limit for the 2019 estimate. *P<0.05.

Table 7 (continued). Number of deer harvested in Michigan by hunting season, 2018-2019.^a

Season and Area	Antlerless				Antlered Bucks				Sexes Combined			
	2018 Harvest	2019 Harvest	95% CL ^b	Change from 2018 to 2019 (%)	2018 Harvest	2019 Harvest	95% CL ^b	Change from 2018 to 2019	2018 Harvest	2019 Harvest	95% CL ^b	Change from 2018 to 2019
Disease Hunt												
West UP	0	0	0		0	0	0		0	0	0	
East UP	0	0	0		0	0	0		0	0	0	
NE LP	26	88	92	240.6	0	0	0		26	88	92	240.6
NW LP	0	0	0		0	0	0		0	0	0	
Sag. Bay	0	0	0		0	0	0		0	0	0	
SW LP	0	0	0		0	0	0		0	0	0	
SC LP	0	0	0		0	0	0		0	0	0	
SE LP	0	0	0		0	0	0		0	0	0	
UP	0	0	0		0	0	0		0	0	0	
NLP	26	88	92	240.6	0	0	0		26	88	92	240.6
SLP	0	0	0		0	0	0		0	0	0	
Statewide	26	88	92	240.6	0	0	0		26	88	92	240.6
All Seasons												
West UP	4,768	5,733	925	20.2	24,693	21,063	1,519	-14.7	29,477	26,807	1,887	-9.1
East UP	132	160	144	21.5	5,824	4,735	708	-18.7	5,961	4,899	731	-17.8
NE LP	21,259	20,520	1,774	-3.5	28,454	27,038	1,773	-5.0	49,711	47,557	2,727	-4.3
NW LP	30,369	30,481	2,173	0.4	30,435	32,437	1,929	6.6	60,793	62,910	3,247	3.5
Sag. Bay	29,995	26,271	1,939	-12.4	36,593	34,080	1,982	-6.9	66,582	60,349	3,088	-9.4
SW LP	21,086	24,235	1,972	14.9	31,067	35,270	2,077	13.5*	52,153	59,507	3,235	14.1*
SC LP	30,095	34,488	2,325	14.6	38,866	41,470	2,244	6.7	68,957	75,953	3,701	10.1
SE LP	11,209	10,562	1,216	-5.8	15,823	15,133	1,311	-4.4	27,032	25,696	1,970	-4.9
UP	4,900	5,893	936	20.3	30,517	25,798	1,676	-15.5*	35,438	31,706	2,023	-10.5
NLP	59,641	58,821	3,003	-1.4	68,521	68,168	2,802	-0.5	128,148	126,978	4,528	-0.9
SLP	84,371	87,737	3,659	4.0	112,715	117,261	3,743	4.0	197,080	204,994	5,922	4.0
Statewide	148,912	152,451	4,837	2.4	211,754	211,228	4,976	-0.2	360,666	363,678	7,739	0.8

^aHarvest estimates do not include deer taken with DMA permits. An additional 7,270 deer were taken with these permits.

^b95 confidence limit for the 2019 estimate. *P<0.05.

Table 8. Number of deer harvested on public and private lands during all seasons combined in Michigan by management region, 2018-2019.^a

Season and Area	Antlerless				Antlered Bucks				Sexes Combined			
	2018 Harvest	2019 Harvest	95% CL ^b	Change from 2018 to 2019 (%)	2018 Harvest	2019 Harvest	95% CL ^b	Change from 2018 to 2019	2018 Harvest	2019 Harvest	95% CL ^b	Change from 2018 to 2019
Public Lands												
West UP	757	1,168	358	54.4	5,964	5,549	776	-7.0	6,724	6,720	887	-0.1
East UP	5	30	54	517.4	1,528	1,003	323	-34.4	1,534	1,034	336	-32.6
NE LP	4,873	5,643	948	15.8	6,173	5,661	801	-8.3	11,045	11,302	1,314	2.3
NW LP	4,638	3,973	651	-14.3	5,170	6,014	808	16.3	9,806	9,987	1,110	1.8
Sag. Bay	3,186	2,087	511	-34.5	3,520	2,486	539	-29.4	6,705	4,573	801	-31.8
SW LP	879	1,236	414	40.6	1,197	1,933	468	61.5	2,076	3,169	654	52.7
SC LP	2,199	1,889	478	-14.1	2,725	1,732	428	-36.5	4,924	3,620	655	-26.5
SE LP	764	814	300	6.6	819	911	317	11.2	1,583	1,725	491	9.0
UP	762	1,198	362	57.3	7,492	6,552	840	-12.6	8,258	7,754	948	-6.1
NLP	10,718	10,598	1,196	-1.1	13,192	12,726	1,194	-3.5	23,908	23,321	1,799	-2.5
SLP	5,821	5,046	801	-13.3	6,411	6,010	813	-6.3	12,230	11,054	1,210	-9.6
Statewide	17,301	16,842	1,487	-2.7	27,096	25,288	1,672	-6.7	44,396	42,130	2,368	-5.1
Private Lands												
West UP	4,011	4,563	839	13.8	18,728	15,506	1,299	-17.2	22,751	20,077	1,641	-11.8
East UP	127	130	134	2.5	4,296	3,731	631	-13.2	4,427	3,864	649	-12.7
NE LP	16,384	14,869	1,430	-9.2	22,280	21,370	1,572	-4.1	38,663	36,240	2,311	-6.3
NW LP	25,730	26,506	2,051	3.0	25,265	26,417	1,742	4.6	50,985	52,915	3,010	3.8
Sag. Bay	26,809	24,186	1,857	-9.8	33,073	31,599	1,899	-4.5	59,878	55,783	2,955	-6.8
SW LP	20,208	23,002	1,926	13.8	29,871	33,344	2,018	11.6	50,081	56,348	3,155	12.5
SC LP	27,897	32,603	2,269	16.9	36,141	39,748	2,201	10.0	64,036	72,347	3,626	13.0
SE LP	10,446	9,749	1,179	-6.7	15,005	14,225	1,270	-5.2	25,451	23,975	1,904	-5.8
UP	4,138	4,693	849	13.4	23,024	19,237	1,444	-16.4	27,177	23,941	1,765	-11.9
NLP	48,919	48,213	2,696	-1.4	55,327	55,429	2,520	0.2	104,235	103,632	4,073	-0.6
SLP	78,554	82,703	3,560	5.3	106,308	111,274	3,646	4.7	184,858	193,975	5,768	4.9
Statewide	131,612	135,609	4,558	3.0	184,658	185,940	4,671	0.7	316,270	321,548	7,293	1.7

^aHarvest estimates do not include deer taken with DMA permits. An additional 7,270 deer were taken with these permits.

^b95 confidence limit for the 2019 estimate. *P<0.05.

Table 9. Percentage of deer hunters harvesting deer in Michigan during all seasons, 2019.^a

Sex and Area	Number of deer harvested									
	≥1 deer		≥2 deer		≥3 deer		≥4 deer		≥5 deer	
	Success	95% CL ^b	Success	95% CL ^b	Success	95% CL ^b	Success	95% CL ^b	Success	95% CL ^b
Antlerless										
West UP	7.9	1.1	1.4	0.5	0.3	0.2	0.1	0.2	0.1	0.1
East UP	0.8	0.7	0.2	0.3	0.0	0.0	0.0	0.0	0.0	0.0
NE LP	17.2	1.2	3.3	0.6	0.6	0.2	0.2	0.1	0.1	0.1
NW LP	21.8	1.2	4.9	0.6	1.4	0.3	0.5	0.2	0.3	0.2
Sag. Bay	24.0	1.4	4.9	0.7	1.2	0.4	0.5	0.2	0.2	0.1
SW LP	23.1	1.5	5.5	0.8	1.8	0.5	0.8	0.3	0.2	0.2
SC LP	27.3	1.4	7.0	0.8	2.1	0.5	0.6	0.2	0.2	0.1
SE LP	19.1	1.8	4.0	0.9	1.0	0.5	0.2	0.2	0.0	0.0
UP	6.3	0.9	1.1	0.4	0.2	0.2	0.1	0.1	0.1	0.1
NLP	20.3	0.8	4.3	0.4	1.1	0.2	0.4	0.1	0.2	0.1
SLP	24.9	0.8	6.1	0.4	1.8	0.2	0.6	0.1	0.2	0.1
Statewide ^d	22.3	0.5	5.4	0.3	1.5	0.2	0.5	0.1	0.2	0.1
Antlered bucks ^c										
West UP	33.5	1.9	2.6	0.7						
East UP	27.1	3.4	1.3	0.8						
NE LP	25.5	1.4	3.1	0.6						
NW LP	27.1	1.3	3.8	0.6						
Sag. Bay	34.8	1.6	5.2	0.7						
SW LP	38.5	1.7	7.4	0.9						
SC LP	37.7	1.6	7.0	0.8						
SE LP	30.9	2.2	3.9	0.9						
UP	32.2	1.7	2.4	0.6						
NLP	27.2	0.9	3.7	0.4						
SLP	38.2	0.9	6.8	0.5						
Statewide ^d	35.8	0.7	5.9	0.3						

^aExcluded people that did not hunt during the season and deer taken with DMA permits.

^b95 confidence limit.

^cThe season bag limit for antlered deer was two.

^dThe statewide estimate was derived from all hunters, including hunters that had failed to report where they hunted. In contrast, regional estimates were derived from only hunters that had reported hunting in the area.

Table 9 (continued). Percentage of deer hunters harvesting deer in Michigan during all seasons, 2019.^a

Sex and Area	Number of deer harvested									
	≥1 deer		≥2 deer		≥3 deer		≥4 deer		≥5 deer	
	Success	95% CL ^b	Success	95% CL ^b	Success	95% CL ^b	Success	95% CL ^b	Success	95% CL ^b
Sexes Combined										
West UP	38.5	2.0	6.1	1.0	1.0	0.4	0.2	0.2	0.0	0.0
East UP	27.5	3.4	1.8	1.0	0.0	0.0	0.0	0.0	0.1	0.1
NE LP	38.3	1.6	9.2	0.9	1.6	0.4	0.4	0.2	0.2	0.2
NW LP	41.7	1.5	13.0	1.0	3.4	0.5	1.1	0.3	0.2	0.2
Sag. Bay	50.3	1.7	15.4	1.2	3.5	0.6	0.9	0.3	0.3	0.3
SW LP	51.6	1.7	17.9	1.3	4.9	0.8	1.7	0.4	0.2	0.2
SC LP	54.0	1.6	19.3	1.3	5.5	0.7	2.1	0.5	0.0	0.0
SE LP	43.9	2.3	11.7	1.5	2.9	0.8	0.7	0.4	0.0	0.0
UP	36.2	1.7	5.2	0.8	0.8	0.3	0.2	0.1	0.1	0.1
NLP	41.4	1.0	11.8	0.7	2.7	0.3	0.8	0.2	0.1	0.1
SLP	52.9	0.9	18.1	0.7	5.0	0.4	1.6	0.2	0.0	0.0
Statewide ^d	49.5	0.7	15.9	0.5	4.1	0.3	1.4	0.2	0.5	0.1

^aExcluded people that did not hunt during the season and deer taken with DMA permits.

^b95 confidence limit.

^cThe season bag limit for antlered deer was two.

^dThe statewide estimate was derived from all hunters, including hunters that had failed to report where they hunted. In contrast, regional estimates were derived from only hunters that had reported hunting in the area.

Table 10. Percentage of deer hunters harvesting at least one deer in Michigan by hunting season, 2019.^a

Sex and Area	Season											
	Archery		Regular Firearm		Muzzleloader		Early Antlerless		Late Antlerless		Liberty (Youth)	
	Success	95% CL ^b	Success	95% CL ^b	Success	95% CL ^b	Success	95% CL ^b	Success	95% CL ^b	Success	95% CL ^b
Antlerless												
West UP	8.1	2.0	5.1	1.0	8.5	3.2	0.0	0.0	0.0	0.0	13.3	5.5
East UP	1.8	1.9	0.2	0.4	1.0	1.9	0.0	0.0	0.0	0.0	5.2	6.7
NE LP	11.6	1.5	12.4	1.1	5.4	1.9	27.0	11.1	27.0	6.9	12.0	3.8
NW LP	13.1	1.4	14.4	1.1	13.1	2.5	22.4	8.0	29.7	5.1	14.4	3.2
Sag. Bay	12.8	1.5	15.5	1.3	12.2	2.2	18.0	7.0	28.7	4.6	10.8	2.7
SW LP	13.3	1.5	13.6	1.3	12.4	2.1	28.6	16.3	23.5	4.1	12.3	3.7
SC LP	14.9	1.5	17.4	1.3	13.4	2.0	23.1	7.3	27.0	3.6	10.9	2.8
SE LP	11.1	1.8	10.6	1.7	8.1	2.4	19.8	8.6	21.4	5.4	11.2	4.3
UP	6.8	1.7	4.1	0.8	6.4	2.4	0.0	0.0	0.0	0.0	11.8	4.7
NLP	12.8	1.0	13.9	0.8	9.9	1.5	23.5	5.9	28.0	3.8	13.8	2.3
SLP	13.6	0.8	15.3	0.7	12.4	1.1	21.5	4.6	26.0	2.2	11.0	1.7
Statewide	13.6	0.6	13.7	0.5	11.5	0.9	22.1	3.6	26.5	1.9	12.1	1.3
Antlered Bucks												
West UP	21.7	3.1	29.2	2.0	10.9	3.7	0.0	0.0	0.0	0.0	23.6	6.9
East UP	16.7	5.4	22.8	3.5	15.5	6.8	0.0	0.0	0.0	0.0	19.6	16.6
NE LP	16.1	1.8	21.1	1.4	5.7	2.0	0.0	0.0	0.0	0.0	16.8	4.1
NW LP	18.6	1.6	20.3	1.3	4.0	1.5	0.0	0.0	0.0	0.0	22.4	3.3
Sag. Bay	21.4	1.8	26.3	1.6	8.6	1.9	0.0	0.0	0.0	0.0	27.4	3.6
SW LP	26.6	2.0	28.0	1.8	9.6	1.9	0.0	0.0	0.0	0.0	17.6	3.6
SC LP	26.8	1.9	27.0	1.6	8.9	1.7	0.0	0.0	0.0	0.0	26.4	4.0
SE LP	21.1	2.3	22.2	2.4	6.7	2.2	0.0	0.0	0.0	0.0	21.5	5.4
UP	20.7	2.7	27.9	1.7	12.2	3.3	0.0	0.0	0.0	0.0	22.9	6.4
NLP	17.9	1.1	21.1	0.9	4.9	1.1	0.0	0.0	0.0	0.0	21.6	2.5
SLP	25.8	1.1	27.6	1.0	9.1	1.0	0.0	0.0	0.0	0.0	23.6	2.1
Statewide	23.7	0.8	26.2	0.6	8.3	0.8	0.0	0.0	0.0	0.0	22.7	1.6

^aExcluded people that did not hunt during the season and deer taken with DMA permits.

^b95 confidence limit.

Table 10 (continued). Percentage of deer hunters harvesting at least one deer in Michigan by hunting season, 2019.^a

Sex and Area	Season											
	Archery		Regular Firearm		Muzzleloader		Early Antlerless		Late Antlerless		Liberty (Youth)	
	Success	95% CL ^b	Success	95% CL ^b	Success	95% CL ^b	Success	95% CL ^b	Success	95% CL ^b	Success	95% CL ^b
Sexes combined												
West UP	28.1	3.4	32.8	2.0	19.0	4.6	0.0	0.0	0.0	0.0	36.9	7.7
East UP	17.9	5.5	23.0	3.5	16.4	7.0	0.0	0.0	0.0	0.0	24.7	17.1
NE LP	25.7	2.1	31.4	1.6	11.1	2.7	27.0	11.1	27.0	6.9	28.8	5.3
NW LP	28.7	1.9	32.0	1.5	17.0	2.8	22.4	8.0	29.7	5.1	36.8	4.1
Sag. Bay	31.3	2.1	38.7	1.8	20.3	2.8	18.0	7.0	28.7	4.6	38.2	4.1
SW LP	35.6	2.2	37.6	1.9	21.2	2.6	28.6	16.3	23.5	4.1	29.9	4.7
SC LP	37.2	2.0	40.5	1.7	21.2	2.4	23.1	7.3	27.0	3.6	37.4	4.5
SE LP	29.3	2.6	31.0	2.6	14.2	3.1	19.8	8.6	21.4	5.4	32.8	6.4
UP	26.0	2.9	30.8	1.8	18.3	3.9	0.0	0.0	0.0	0.0	34.7	7.0
NLP	28.0	1.3	32.4	1.0	14.8	1.8	23.5	5.9	28.0	3.8	35.4	3.1
SLP	35.2	1.2	39.1	1.0	20.6	1.4	21.5	4.6	26.0	2.2	34.5	2.5
Statewide	33.5	0.9	36.8	0.7	19.2	1.1	22.1	3.6	26.5	1.9	34.8	1.9

^aExcluded people that did not hunt during the season and deer taken with DMA permits.

^b95 confidence limit.

Table 10 (continued). Percentage of deer hunters harvesting at least one deer in Michigan by hunting season, 2019.^a

Sex and Area	Season							
	Independence		Urban Archery		Disease Hunt		All Seasons	
	Success	95% CL ^b	Success	95% CL ^b	Success	95% CL ^b	Success	95% CL ^b
Antlerless								
West UP	28.2	11.2	0.0	0.0	0.0	0.0	7.9	1.1
East UP	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.7
NE LP	19.5	17.0	0.0	0.0	18.4	17.7	17.2	1.2
NW LP	18.3	10.2	0.0	0.0	0.0	0.0	21.8	1.2
Sag. Bay	11.3	6.3	0.0	0.0	0.0	0.0	24.0	1.4
SW LP	13.6	10.0	0.0	0.0	0.0	0.0	23.1	1.5
SC LP	7.5	3.7	0.0	0.0	0.0	0.0	27.3	1.4
SE LP	5.7	4.6	5.4	5.4	0.0	0.0	19.1	1.8
UP	21.4	8.9	0.0	0.0	0.0	0.0	6.3	0.9
NLP	17.5	7.7	0.0	0.0	18.4	17.7	20.3	0.8
SLP	9.2	3.3	5.4	5.4	0.0	0.0	24.9	0.8
Statewide	14.2	4.0	5.4	5.4	18.4	17.7	22.3	0.5
Antlered Bucks								
West UP	22.3	13.4	0.0	0.0	0.0	0.0	33.5	1.9
East UP	28.0	14.2	0.0	0.0	0.0	0.0	27.1	3.4
NE LP	21.4	17.3	0.0	0.0	0.0	0.0	25.5	1.4
NW LP	12.9	4.3	0.0	0.0	0.0	0.0	27.1	1.3
Sag. Bay	18.6	7.7	0.0	0.0	0.0	0.0	34.8	1.6
SW LP	12.3	6.1	0.0	0.0	0.0	0.0	38.5	1.7
SC LP	11.3	4.8	0.0	0.0	0.0	0.0	37.7	1.6
SE LP	21.5	10.8	1.6	1.6	0.0	0.0	30.9	2.2
UP	23.7	10.6	0.0	0.0	0.0	0.0	32.2	1.7
NLP	16.4	6.3	0.0	0.0	0.0	0.0	27.2	0.9
SLP	15.2	3.6	1.6	1.6	0.0	0.0	38.2	0.9
Statewide	16.7	3.5	1.6	1.6	0.0	0.0	35.8	0.7

^aExcluded people that did not hunt during the season and deer taken with DMA permits.

^b95 confidence limit.

Table 10 (continued). Percentage of deer hunters harvesting at least one deer in Michigan by hunting season, 2019.^a

Sex and Area	Season							
	Independence		Urban Archery		Disease Hunt		All Seasons	
	Success	95% CL ^b	Success	95% CL ^b	Success	95% CL ^b	Success	95% CL ^b
Sexes combined								
West UP	44.5	11.9	0.0	0.0	0.0	0.0	38.5	2.0
East UP	28.0	14.2	0.0	0.0	0.0	0.0	27.5	3.4
NE LP	40.8	18.1	0.0	0.0	18.4	17.7	38.3	1.6
NW LP	31.2	10.5	0.0	0.0	0.0	0.0	41.7	1.5
Sag. Bay	29.9	10.7	0.0	0.0	0.0	0.0	50.3	1.7
SW LP	25.9	11.3	0.0	0.0	0.0	0.0	51.6	1.7
SC LP	18.8	6.8	0.0	0.0	0.0	0.0	54.0	1.6
SE LP	27.2	12.8	5.6	5.6	0.0	0.0	43.9	2.3
UP	40.5	10.0	0.0	0.0	0.0	0.0	36.2	1.7
NLP	33.9	8.8	0.0	0.0	18.4	17.7	41.4	1.0
SLP	24.4	5.3	5.6	5.6	0.0	0.0	52.9	0.9
Statewide	30.5	5.0	5.6	5.6	18.4	17.7	49.5	0.7

^aExcluded people that did not hunt during the season and deer taken with DMA permits.

^b95 confidence limit.

Table 11. Level of satisfaction and dissatisfaction with the number of deer seen and number of antlered deer (bucks) seen among Michigan deer hunters, 2018-2019.

Criteria and area	Satisfied hunters (%) ^a				Dissatisfied hunters (%) ^b			
	2018	2019	95% CL ^c	Difference from 2018 to 2019 (%)	2018	2019	95% CL ^c	Difference from 2018 to 2019 (%)
Number of deer seen								
West UP	51	38	2	-14*	33	48	2	15*
East UP	43	31	4	-12*	41	53	4	12*
NE LP	34	32	2	-2	50	55	2	5*
NW LP	38	38	2	1	47	47	2	-1
Sag. Bay	45	47	2	1	38	39	2	1
SW LP	47	53	2	6*	36	31	2	-4
SC LP	53	59	2	6*	33	26	1	-6*
SE LP	46	48	3	2	37	36	3	-1
UP	50	36	2	-13*	35	49	2	14*
NLP	36	35	1	-1	48	51	1	2*
SLP	49	54	1	5*	35	31	1	-4*
Statewide	44	44	1	0	40	41	1	1
Number of antlered deer (bucks) seen								
West UP	34	27	2	-8*	48	57	2	9*
East UP	26	22	3	-4	56	63	4	7
NE LP	23	22	1	0	60	61	2	1
NW LP	25	29	1	4*	57	54	2	-3
Sag. Bay	31	33	2	2	49	50	2	0
SW LP	34	39	2	5*	47	42	2	-5*
SC LP	38	43	2	5*	44	38	2	-5*
SE LP	30	34	3	4	49	47	3	-2
UP	32	26	2	-7*	50	59	2	9*
NLP	24	26	1	1	58	58	1	0
SLP	35	39	1	5*	46	42	1	-4*
Statewide	30	32	1	2*	51	50	1	-1

^aIncluded hunters who were "very satisfied" or "somewhat satisfied."

^bIncluded hunters who were "somewhat dissatisfied" or "strongly dissatisfied."

^c95 confidence limit for the 2019 estimate.

*P<0.05.

Table 12. Level of satisfaction and dissatisfaction with the size of the antlers on antlered deer (bucks) and overall deer hunting experience among Michigan deer hunters, 2018-2019.

Criteria and area	Satisfied hunters (%) ^a				Dissatisfied hunters (%) ^b			
	2018	2019	95% CL ^c	Difference from 2018 to 2019 (%)	2018	2019	95% CL ^c	Difference from 2018 to 2019 (%)
Size of antlers								
West UP	21	22	2	0	51	51	2	1
East UP	19	16	3	-3	52	54	4	3
NE LP	20	22	1	2	51	49	2	-2
NW LP	22	28	1	6*	49	44	2	-5*
Sag. Bay	25	28	2	3	47	45	2	-2
SW LP	31	35	2	4*	41	37	2	-4*
SC LP	31	35	2	4*	41	37	2	-4*
SE LP	26	30	2	5*	45	42	3	-3
UP	21	21	2	0	51	52	2	1
NLP	21	25	1	4*	50	47	1	-4*
SLP	29	33	1	4*	42	39	1	-4*
Statewide	25	28	1	3*	47	44	1	-3*
Overall deer hunting experience								
West UP	58	51	2	-7*	22	29	2	7*
East UP	54	47	4	-7	26	32	4	6
NE LP	49	44	2	-5*	30	36	2	5*
NW LP	46	48	2	2	32	32	2	0
Sag. Bay	52	52	2	0	26	27	2	2
SW LP	55	60	2	5*	24	20	2	-4*
SC LP	58	63	2	5*	22	18	1	-4*
SE LP	54	56	3	2	23	25	2	2
UP	57	50	2	-7*	23	29	2	7*
NLP	47	46	1	-2	31	33	1	3*
SLP	55	60	1	4*	23	21	1	-2*
Statewide	52	53	1	0	26	27	1	1

^aIncluded hunters who were "very satisfied" or "somewhat satisfied."

^bIncluded hunters who were "somewhat dissatisfied" or "strongly dissatisfied."

^c95 confidence limit for the 2019 estimate.

*P<0.05.

Table 13. Level of satisfaction and dissatisfaction with overall deer hunting experience and number of deer harvested among Michigan deer hunters, 2018-2019.

Criteria and area	Satisfied hunters (%) ^a				Dissatisfied hunters (%) ^b			
	2018	2019	95% CL ^c	Difference from 2018 to 2019 (%)	2018	2019	95% CL ^c	Difference from 2018 to 2019 (%)
Number of deer harvested								
West UP	39	33	2	-6*	23	31	2	8*
East UP	30	26	4	-4	29	35	4	6
NE LP	31	29	2	-2	32	36	2	4*
NW LP	32	33	2	2	34	34	2	1
Sag. Bay	40	39	2	0	27	29	2	2
SW LP	38	42	2	4*	28	25	2	-3
SC LP	42	44	2	2	26	25	2	0
SE LP	37	38	3	1	28	31	3	2
UP	37	31	2	-6*	24	32	2	7*
NLP	32	31	1	-1	32	35	1	3*
SLP	40	42	1	2*	27	27	1	0
Statewide	36	36	1	0	29	31	1	2*

^aIncluded hunters who were "very satisfied" or "somewhat satisfied."

^bIncluded hunters who were "somewhat dissatisfied" or "strongly dissatisfied."

^c95 confidence limit for the 2019 estimate.

*P<0.05.

Table 14. Level of satisfaction and dissatisfaction with the number of deer seen and number of antlered deer (bucks) seen among Michigan deer hunters in 2019. Estimates provided separately for hunters hunting on private land only and public land only within the hunter's preferred hunt area.

Criteria and preferred hunt area	Satisfied hunters (%) ^a					Dissatisfied hunters (%) ^b				
	Private only	95% CL	Public only	95% CL	Difference between land types (%)	Private only	95% CL	Public only	95% CL	Difference between land types (%)
Number of deer seen										
West UP	45	3	28	4	-17*	41	3	52	5	11*
East UP	36	5	15	7	-20*	47	5	66	9	18*
NE LP	36	2	23	3	-14*	51	2	65	3	14*
NW LP	43	2	28	3	-14*	43	2	56	4	13*
Sag. Bay	50	2	26	5	-25*	35	2	62	6	27*
SW LP	54	2	37	7	-18*	30	2	42	8	12*
SC LP	61	2	34	6	-26*	25	2	44	7	20*
SE LP	51	3	22	8	-29*	34	3	54	9	21*
UP	43	3	25	4	-18*	42	3	55	4	13*
NLP	40	1	25	2	-15*	46	1	62	2	15*
SLP	56	1	33	4	-23*	29	1	47	4	18*
Statewide	49	1	27	2	-23*	36	1	57	2	21*
Number of antlered deer (bucks) seen										
West UP	30	3	24	4	-6	53	3	59	5	6
East UP	25	5	15	7	-10	59	5	63	9	3
NE LP	26	2	14	3	-12*	58	2	69	3	11*
NW LP	32	2	21	3	-11*	51	2	62	4	10*
Sag. Bay	36	2	19	5	-17*	47	2	65	6	17*
SW LP	40	2	26	7	-14*	41	2	52	8	11*
SC LP	45	2	23	6	-22*	37	2	57	7	20*
SE LP	37	3	18	7	-18*	46	3	59	9	13*
UP	29	2	22	4	-7*	54	3	60	4	6
NLP	29	1	17	2	-12*	54	1	66	2	12*
SLP	41	1	24	3	-17*	41	1	55	4	15*
Statewide	36	1	19	1	-16*	47	1	62	2	16*

^aIncluded hunters who were "very satisfied" or "somewhat satisfied."

^bIncluded hunters who were "somewhat dissatisfied" or "strongly dissatisfied."

*P<0.05.

Table 15. Level of satisfaction and dissatisfaction with the size of antlers on antlered deer (bucks) and overall deer hunting experience among Michigan deer hunters in 2019. Estimates provided separately for hunters hunting on private land only and public land only within the hunter's preferred hunt area.

Criteria and preferred hunt area	Satisfied hunters (%) ^a					Dissatisfied hunters (%) ^b				
	Private only	95% CL	Public only	95% CL	Difference between land types (%)	Private only	95% CL	Public only	95% CL	Difference between land types (%)
Size of antlers										
West UP	24	2	21	4	-3	49	3	49	5	0
East UP	19	4	10	6	-9	53	5	50	9	-3
NE LP	25	2	15	3	-9*	47	2	52	4	4
NW LP	30	2	23	3	-6*	43	2	43	4	0
Sag. Bay	30	2	14	4	-16*	43	2	48	6	5
SW LP	36	2	27	7	-9*	37	2	38	8	1
SC LP	37	2	17	5	-20*	36	2	43	7	6
SE LP	32	3	18	7	-14	41	3	45	9	4
UP	23	2	18	3	-5	50	3	49	4	-1
NLP	27	1	18	2	-9*	46	1	48	3	2
SLP	35	1	20	3	-15*	38	1	42	4	4
Statewide	31	1	19	1	-12*	42	1	47	2	5*
Overall deer hunting experience										
West UP	54	3	50	5	-4	25	2	32	5	8*
East UP	51	5	38	9	-13	29	5	37	9	8
NE LP	47	2	40	4	-7*	33	2	40	4	7*
NW LP	50	2	41	4	-9*	30	2	38	4	9*
Sag. Bay	55	2	40	6	-15*	25	2	40	6	14*
SW LP	62	2	45	8	-17*	20	2	29	7	9*
SC LP	64	2	53	7	-11*	18	1	26	6	8*
SE LP	58	3	48	9	-9	24	2	30	8	7
UP	53	3	48	4	-6	25	2	33	4	8*
NLP	49	1	40	2	-9*	31	1	40	2	9*
SLP	61	1	49	4	-12*	20	1	29	4	9*
Statewide	56	1	43	2	-13*	25	1	36	2	11*

^aIncluded hunters who were "very satisfied" or "somewhat satisfied."

^bIncluded hunters who were "somewhat dissatisfied" or "strongly dissatisfied."

*P<0.05.

Table 16. Level of satisfaction and dissatisfaction with the number of deer harvested among Michigan deer hunters in 2019. Estimates provided separately for hunters hunting on private land only and public land only within the hunter's preferred hunt area.

Criteria and preferred hunt area	Satisfied hunters (%) ^a					Dissatisfied hunters (%) ^b				
	Private only	95% CL	Public only	95% CL	Difference between land types (%)	Private only	95% CL	Public only	95% CL	Difference between land types (%)
Number of deer harvested										
West UP	38	3	29	5	-9*	27	3	31	5	4
East UP	25	5	25	8	-1	33	5	34	9	2
NE LP	34	2	21	3	-13*	34	2	40	4	6*
NW LP	38	2	23	3	-14*	33	2	39	4	6*
Sag. Bay	42	2	20	5	-22*	27	2	44	6	16*
SW LP	44	2	25	7	-19*	25	2	28	7	3
SC LP	46	2	24	6	-22*	25	2	36	7	11*
SE LP	40	3	24	8	-16*	29	3	40	9	11
UP	35	2	28	4	-7*	28	2	32	4	3
NLP	36	1	21	2	-15*	33	1	40	2	7*
SLP	44	1	25	3	-20*	26	1	35	4	9*
Statewide	40	1	23	2	-17*	29	1	37	2	9*

^aIncluded hunters who were "very satisfied" or "somewhat satisfied."

^bIncluded hunters who were "somewhat dissatisfied" or "strongly dissatisfied."

*P<0.05.

Table 17. Estimated proportion and number of archers that used a crossbow during 2019 archery season in Michigan, summarized by region.

Region	Archers using a crossbow during archery season			
	%	95% CL	Total	95% CL
UP	65.4	3.4	13,523	1,164
NLP	74.0	1.4	74,662	2,581
SLP	68.3	1.2	101,388	2,878
Unknown ^a	65.6	3.3	14,587	1,213
Statewide	69.9	0.9	204,160	3,648

^aRegion could not be determined when hunter did not report where they hunted or when hunter reported hunting in more than one region.

Table 18. Estimated hunter success of archers hunting with a crossbow during 2019 archery season in Michigan, summarized by type of deer and region.

Region	Antlerless		Antlered Bucks		Sexes Combined	
	% ^a	95% CL	% ^a	95% CL	% ^a	95% CL
UP	6.7	2.2	23.9	3.7	29.1	4.0
NLP	13.2	1.3	19.3	1.5	30.1	1.7
SLP	13.5	1.1	26.7	1.4	36.7	1.5
Unknown ^b	14.1	2.9	21.3	3.5	30.9	3.9
Statewide	13.0	0.7	23.4	0.9	33.4	1.1

^aPercentage of crossbow hunters harvesting at least one deer.

^bRegion could not be determined when hunter did not report where they hunted or when hunter reported hunting in more than one region.

Table 19. Estimated number of deer harvested by archers with a crossbow during 2019 archery season in Michigan, summarized by type of deer and region.

Region	Antlerless		Antlered Bucks		Sexes Combined	
	No.	95% CL	No.	95% CL	No.	95% CL
UP	860	286	3,257	601	4,117	698
NLP	10,638	1,136	14,501	1,249	25,139	1,779
SLP	14,922	1,334	27,693	1,719	42,615	2,328
Unknown ^a	2,280	547	3,224	610	5,504	909
Statewide	28,700	1,829	48,675	2,235	77,375	3,039

^aRegion could not be determined when hunter did not report where they hunted or when hunter reported hunting in more than one region.

Table 20. Proportion of active Michigan deer hunters that indicated their future hunting activity would be affected if CWD caused all meat processors to stop processing deer.

Area	Future hunting activity							
	I would still hunt deer		I would stop hunting deer altogether		Not sure		Unknown	
	%	95% CL ^a	%	95% CL ^a	%	95% CL ^a	%	95% CL ^a
West UP	64	2	7	1	24	2	5	1
East UP	61	4	7	2	26	4	6	2
NE LP	61	2	10	1	24	1	4	1
NW LP	64	2	8	1	24	1	4	1
Sag. Bay	65	2	9	1	23	1	3	1
SW LP	64	2	8	1	25	2	3	1
SC LP	66	2	8	1	24	1	3	1
SE LP	63	3	9	2	25	2	4	1
UP	63	2	7	1	25	2	5	1
NLP	63	1	9	1	24	1	4	<1
SLP	65	1	8	1	24	1	3	<1
Statewide	64	1	8	<1	24	1	4	<1

^aEstimates were calculated separately for areas that were defined based on the area where the hunter preferred to deer hunt.

^b95% confidence limits.

Table 21. Number of active Michigan deer hunters that indicated their future hunting activity would be affected if CWD caused all meat processors to stop processing deer.

Area	Future hunting activity							
	I would still hunt deer		I would stop hunting deer altogether		Not sure		Unknown	
	Total	95% CL ^a	Total	95% CL ^a	Total	95% CL ^a	Total	95% CL ^a
West UP	37,399	1,891	4,079	653	14,130	1,202	3,009	544
East UP	9,320	986	1,045	334	4,002	652	837	282
NE LP	54,774	2,267	8,708	953	21,838	1,482	3,901	594
NW LP	63,417	2,392	7,800	888	23,157	1,509	4,115	612
Sag. Bay	52,665	2,176	6,874	832	18,456	1,341	2,758	513
SW LP	45,552	2,048	5,761	758	17,862	1,324	2,346	480
SC LP	58,507	2,284	6,738	823	21,277	1,441	2,600	507
SE LP	22,442	1,472	3,125	567	8,869	939	1,345	363
UP	46,719	2,091	5,124	732	18,132	1,356	3,846	612
NLP	134,178	3,240	18,791	1,374	50,882	2,185	8,915	896
SLP	163,179	3,349	20,215	1,408	60,577	2,332	8,150	890
Statewide	344,736	3,709	44,288	2,052	130,018	3,207	20,995	1,390

^aEstimates were calculated separately for areas that were defined based on the area where the hunter preferred to deer hunt.

^b95% confidence limits.

Table 22. Estimated proportion and number of deer hunters that used a trail camera to hunt deer in Michigan, summarized by area.

Area	Deer hunters using a trail camera ^a			
	%	95% CL	Total	95% CL
West UP	57	2	34,399	1,843
East UP	57	4	8,879	970
NE LP	43	2	39,427	1,971
NW LP	44	2	44,791	2,065
Sag. Bay	42	2	35,117	1,827
SW LP	43	2	31,621	1,745
SC LP	40	2	36,408	1,866
SE LP	45	3	16,622	1,284
UP	57	2	43,277	2,046
NLP	44	1	95,325	2,886
SLP	42	1	108,662	2,980
Statewide	45	1	247,809	3,863

^aExcluded license buyers that did not hunt.

Table 23. Estimated number of trail cameras used by deer hunters and the number of days these cameras were operated in Michigan during 2019, summarized by area.

Area	Number of trail cameras used				Number of days that trail cameras operated			
	Mean	95%	Total	95%	Mean	95%	Total	95% CL
		CL		CL		CL		
West UP	2.3	0.1	76,678	5,408	49.2	3.6	1,541,045	142,692
East UP	2.4	0.2	20,532	3,006	45.8	6.1	368,297	64,969
NE LP	2.5	0.1	96,217	6,543	67.8	4.3	2,401,927	200,062
NW LP	2.7	0.1	116,611	7,135	70.6	3.9	2,825,025	207,887
Sag. Bay	2.7	0.1	91,467	6,475	75.8	4.6	2,373,757	195,880
SW LP	2.7	0.1	82,740	6,008	80.5	4.7	2,227,461	184,068
SC LP	2.7	0.1	91,446	6,095	85.4	5.0	2,681,572	216,751
SE LP	2.5	0.2	39,205	4,064	84.2	7.1	1,202,306	143,358
UP	2.4	0.1	97,210	6,122	48.5	3.1	1,909,342	155,873
NLP	2.7	0.1	242,359	10,082	69.9	2.8	5,979,009	304,255
SLP	2.7	0.1	275,327	10,379	81.8	2.7	7,733,038	344,680
Statewide	2.6	<0.1	616,721	14,420	71.1	1.7	15,643,664	459,313

^aExcluded license buyers that did not hunt and hunters that failed to report the number of cameras used and days of observation.

Table 24. Proportion of deer hunters using a trail camera that photographed the following selected carnivores, deer, and wild pig with their trail camera in 2019, summarized by area.^a

Area	Species									
	Bear		Bobcat		Coyote		Deer		Fisher	
	%	95% CL	%	95% CL	%	95% CL	%	95% CL	%	95% CL
West UP	52	3	13	2	45	3	96	1	12	2
East UP	42	5	11	3	40	5	96	2	8	3
NE LP	36	2	25	2	61	3	96	1	1	0.4
NW LP	33	2	35	2	63	2	98	1	0.4	0.3
Sag. Bay	7	1	13	2	58	3	97	1	1	0.4
SW LP	1	0.5	5	1	68	3	99	1	0.5	0.4
SC LP	1	1	6	1	66	3	99	1	1	0.4
SE LP	1	1	1	1	64	4	98	1	0.2	0.3
UP	50	2	13	2	44	2	96	1	11	2
NLP	33	2	30	2	62	2	97	1	0.5	0.2
SLP	1	0.3	5	1	65	1	98	0.4	0.5	0.2
Statewide	22	1	16	1	60	1	97	0.3	2	0.3

^aExcluded hunters that did not use a trail camera.

Table 24 (continued). Proportion of deer hunters using a trail camera that photographed the following selected carnivores, deer, and wild pig with their trail camera in 2019, summarized by area.^a

Area	Species							
	Fox		Marten		Wild pig		Wolf	
	%	95% CL	%	95% CL	%	95% CL	%	95% CL
West UP	17	2	9	2	0.3	0.3	29	3
East UP	14	4	9	3	0.0	0.0	31	5
NE LP	26	2	1	0.4	0.0	0.0	1	1
NW LP	26	2	0.3	0.2	0.1	0.1	0.5	0.3
Sag. Bay	34	3	0.3	0.3	0.3	0.2	1	0.4
SW LP	38	3	1	0.5	0.1	0.2	0.1	0.2
SC LP	35	3	0.3	0.3	0.2	0.2	0.1	0.2
SE LP	29	4	0.2	0.3	0.2	0.4	0.4	1
UP	16	2	9	1	0.2	0.2	29	2
NLP	27	1	0.4	0.2	0.1	0.1	1	0.3
SLP	35	1	0.4	0.2	0.2	0.1	0.2	0.2
Statewide	29	1	2	0.3	0.1	0.1	6	0.5

^aExcluded hunters that did not use a trail camera.

Table 25. The proportion of hunters that supported or opposed the late urban archery season (January 2-31).^a

Statement and region	Hunter's opinion							
	Support		Neither		Oppose		Unsure	
	%	95% CL	%	95% CL	%	95% CL	%	95% CL
<i>Support for the late urban archery season (January 2-31) in the Detroit-metro area (Macomb, Oakland, and Wayne counties).</i>								
West UP	34	2	27	2	17	2	22	2
East UP	44	4	23	4	14	3	18	3
NE LP	49	2	22	1	15	1	14	1
NW LP	42	2	24	1	17	1	17	1
Sag. Bay	45	2	23	2	18	1	14	1
SW LP	44	2	24	2	16	1	16	1
SC LP	48	2	22	1	17	1	13	1
SE LP	61	3	16	2	14	2	8	1
UP	37	2	26	2	16	1	21	2
NLP	45	1	23	1	16	1	16	1
SLP	48	1	22	1	17	1	13	1
Statewide	45	1	23	1	16	1	15	<1
<i>Support for creating a statewide late urban archery season (January 2-31) in the future.</i>								
West UP	28	2	14	1	50	2	8	1
East UP	30	4	14	3	50	4	7	2
NE LP	44	2	14	1	35	2	7	1
NW LP	42	2	13	1	39	2	7	1
Sag. Bay	44	2	12	1	38	2	6	1
SW LP	51	2	11	1	31	2	7	1
SC LP	49	2	12	1	33	2	6	1
SE LP	62	3	10	2	23	2	5	1
UP	28	2	14	1	50	2	8	1
NLP	43	1	13	1	37	1	7	1
SLP	50	1	12	1	32	1	6	<1
Statewide	44	1	13	<1	36	1	7	<1

^aAn extended late archery season was held during January 2-31 in the Detroit-metro area (Macomb, Oakland, and Wayne counties) during the last two years.

Table 26. The proportion of hunters that agreed or disagreed with the following statements regarding CWD testing in areas where CWD has occurred previously.^a

Statement and region	Hunter's opinion					
	Agreed		Neither		Disagreed	
	%	95% CL	%	95% CL	%	95% CL
<i>Knowing the CWD status of a harvested deer is important to me.</i>						
West UP	80	2	13	1	7	1
East UP	86	3	9	2	5	2
NE LP	83	1	12	1	5	1
NW LP	81	1	14	1	6	1
Sag. Bay	82	1	12	1	5	1
SW LP	83	1	13	1	4	1
SC LP	81	1	13	1	6	1
SE LP	86	2	12	2	3	1
UP	81	1	12	1	6	1
NLP	82	1	13	1	5	<1
SLP	83	1	13	1	5	<1
Statewide	82	1	13	<1	5	<1
<i>Knowing the CWD status of a harvested deer is critical to my decision to hunt.</i>						
West UP	45	2	29	2	25	2
East UP	48	4	31	4	21	3
NE LP	47	2	30	2	23	1
NW LP	43	2	32	2	25	1
Sag. Bay	46	2	30	2	24	2
SW LP	47	2	29	2	24	2
SC LP	43	2	31	2	26	1
SE LP	49	3	30	2	20	2
UP	46	2	30	2	24	2
NLP	45	1	31	1	24	1
SLP	46	1	30	1	24	1
Statewide	45	1	30	1	24	1

Table 26 (continued). The proportion of hunters that agreed or disagreed with the following statements regarding CWD testing in areas where CWD has occurred previously.^a

Statement and region	Hunter's opinion					
	Agreed		Neither		Disagreed	
	%	95% CL	%	95% CL	%	95% CL
<i>If testing was not available and estimated CWD prevalence was low (<1%; 1 out of 100 animals positive for disease), I would stop hunting in that area.</i>						
West UP	15	2	22	2	63	2
East UP	13	3	24	4	63	4
NE LP	14	1	23	1	63	2
NW LP	14	1	23	1	63	2
Sag. Bay	15	1	24	2	61	2
SW LP	14	1	23	2	63	2
SC LP	13	1	22	1	65	2
SE LP	16	2	22	2	62	3
UP	14	1	23	2	63	2
NLP	14	1	23	1	63	1
SLP	14	1	23	1	63	1
Statewide	14	0	23	1	63	1
<i>If testing was not available and estimated CWD prevalence was moderate (5%; 5 out of 100 animals positive for disease), I would stop hunting in that area.</i>						
West UP	26	2	21	2	53	2
East UP	24	4	24	4	51	4
NE LP	25	2	23	1	51	2
NW LP	23	1	23	1	53	2
Sag. Bay	25	2	23	1	51	2
SW LP	24	2	23	2	53	2
SC LP	22	1	23	1	55	2
SE LP	27	2	22	2	50	3
UP	26	2	22	2	53	2
NLP	25	1	23	1	52	1
SLP	24	1	23	1	53	1
Statewide	24	1	23	1	53	1

Table 26 (continued). The proportion of hunters that agreed or disagreed with the following statements regarding CWD testing in areas where CWD has occurred previously.^a

Statement and region	Hunter's opinion					
	Agreed		Neither		Disagreed	
	%	95% CL	%	95% CL	%	95% CL
<i>If testing was not available and estimated CWD prevalence was high (>10%; 1 out of 10 animals positive for disease), I would stop hunting in that area.</i>						
West UP	45	2	19	2	36	2
East UP	45	4	20	3	36	4
NE LP	46	2	20	1	33	2
NW LP	45	2	20	1	35	2
Sag. Bay	45	2	20	1	36	2
SW LP	46	2	19	1	34	2
SC LP	43	2	19	1	38	2
SE LP	48	3	19	2	33	2
UP	45	2	19	2	36	2
NLP	46	1	20	1	34	1
SLP	45	1	20	1	36	1
Statewide	45	1	20	1	35	1
<i>I would be willing to pay a nominal fee to get my harvested deer tested for CWD.</i>						
West UP	40	2	17	2	43	2
East UP	43	4	15	3	42	4
NE LP	39	2	18	1	43	2
NW LP	36	2	20	1	44	2
Sag. Bay	36	2	20	1	44	2
SW LP	39	2	20	2	41	2
SC LP	34	2	19	1	47	2
SE LP	42	3	20	2	38	3
UP	41	2	17	1	43	2
NLP	37	1	19	1	44	1
SLP	37	1	20	1	43	1
Statewide	38	1	19	1	43	1

Appendix A. Questionnaire used to collect answers for the 2019 Michigan deer harvest survey.



Michigan Department of Natural Resources – Wildlife Division
 PO Box 30030 Lansing MI 48909-7530

2019 MICHIGAN DEER HARVEST STUDY

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



It is important that you return this questionnaire even if you did not hunt or harvest a deer. Please report only your hunting activities, and only report taking a deer if your kill tag was attached to it.

1. Did you hunt deer in Michigan during the 2019 seasons?

1 Yes. 2 No. Skip to Question #13.



Appendix A (continued). Questionnaire used to collect answers for the 2019 Michigan deer harvest survey.

2. In the following table, please report only your hunting activities and the deer tagged with your deer license. Report harvest and days hunted in different counties on separate rows. For each deer harvested, indicate the type of deer tagged (antlered buck or antlerless), and whether it was taken on public or private land. Antlered bucks have antlers at least 3 inches in length; antlerless deer include deer without antlers and deer with antlers less than 3 inches in length. Do not report hunting effort and harvest taken with Deer Management Assistance Permits.

SEASON HUNTED (Check box if you hunted during the season.)	LOCATION HUNTED (For each season hunted, list the management unit and county hunted on separate lines. See map on first page.)		NUMBER OF DAYS HUNTED	NUMBER OF DEER HARVESTED (Record by type of deer and land ownership type where each deer was taken.)			
	Deer Management Unit	County		Antlered Bucks		Antlerless	
				Public Land	Private Land	Public Land	Private Land
<input checked="" type="checkbox"/> Example	1 041	Kent	12	0	1	0	0
<input type="checkbox"/> Archery Oct 1-Nov 14 and Dec 1-Jan 1 (Statewide)	1						
	2						
	3						
<input type="checkbox"/> Regular Firearm Nov 15-30 (Statewide)	1						
	2						
	3						
<input type="checkbox"/> Muzzleloader Dec 6-15 (UP & NLP) Dec 6-22 (SLP)	1						
	2						
	3						
<input type="checkbox"/> Early Firearm Sept 21-22 (Portions of the Lower Peninsula)	1			Only antlerless deer could be taken on private land during the early firearm season			
	2						
	3						
<input type="checkbox"/> Late Firearm Dec 23-Jan 1 (Portions of the Lower Peninsula)	1			Only antlerless deer could be taken on private land during the late firearm season			
	2						
	3						
<input type="checkbox"/> Liberty/Youth Hunt Sept 14-15 (Statewide)	1						
	2						
	3						
<input type="checkbox"/> Independence Hunt Oct 17-20 (Statewide)	1						
	2						
	3						
<input type="checkbox"/> Late Urban Archery Hunt Jan 2-31 (Macomb, Oakland, & Wayne counties only)	1						
	2						
	3						
<input type="checkbox"/> January Disease Hunt Jan 3-6 & Jan 10-13 (Portions of Alpena county)	1						
	2						
	3						

Appendix A (continued). Questionnaire used to collect answers for the 2019 Michigan deer harvest survey.

3. Did you use a crossbow to hunt deer during the archery season (Oct. 1 - Nov. 14 and Dec. 1 - Jan. 1)?

¹ Yes ² No. Skip to Question #5.

4. If you used a crossbow to hunt deer during the archery season, how many deer did you take using the crossbow in 2019?

_____ Report the number of antlerless deer you took with a crossbow.

_____ Report the number of antlered deer (bucks) you took with a crossbow.

5. If you harvested a deer in 2019, how many of your deer were taken to a commercial meat processor for processing?

_____ Report the number of deer taken to a commercial meat processor.

6. If Chronic Wasting Disease (a fatal disease of deer) caused all meat processors to stop processing deer, how would this change your future deer hunting activity? (Select one.)

¹ I would still hunt deer. ² I would stop hunting deer altogether. ³ Not sure.

7. What is your preferred county to hunt deer in Michigan? Please select one county from the counties you reported hunting during the 2019 seasons in Question #2.

Please write county name

8. On what type of land did you hunt deer in your preferred county in 2019?

¹ Private ² Public ³ Both private and public lands

9. Please indicate how satisfied or dissatisfied you were with the following for the 2019 deer hunting seasons in your preferred county:

(Select one choice per item.)

	Very Satisfied	Somewhat Satisfied	Neutral	Somewhat Dissatisfied	Very Dissatisfied	Not Applicable
a. Number of deer you saw.	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. Number of antlered deer (bucks) you saw.	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. The size of the antlers on the bucks you saw.	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. Your overall deer hunting experience.	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. Number of deer you harvested.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>

10. Did you use a trail camera to monitor deer activity in the county where you preferred to deer hunt in 2019?

¹ Yes ² No (If no, please skip to question 13.)

11. If you used a trail camera in 2019, how many cameras did you use and how many days did you use a camera to monitor deer activity in your preferred county?

_____ Report the number of trail cameras you used in your preferred county.

_____ Report the average number of days you used each trail camera in your preferred county.

Appendix A (continued). Questionnaire used to collect answers for the 2019 Michigan deer harvest survey.

12. If you used a trail camera, which of the following animals did you photograph in the county where you preferred to deer hunt in 2019? (Select all that apply.)

- None Bear Bobcat Coyote Deer
 Fisher Fox Marten Wild pig Wolf

13. An extended late archery season was held during January 2-31 in the Detroit-metro area (Macomb, Oakland, and Wayne counties) during the last two years. How much do you support or oppose continuing this extended archery season in future years?

- Strongly support Support Neither Oppose Strongly oppose Unsure

⊕

14. How much do you support or oppose creating a new extended archery season (January 2-31) in future years in the county where you preferred to deer hunt in 2019?

- Strongly support Support Neither Oppose Strongly oppose Unsure

□

15. This question asks about Chronic Wasting Disease (CWD), which is a fatal disease of deer, elk, and moose that causes degeneration of the brain. To what extent do you agree or disagree with the following statements regarding CWD testing in areas where CWD has occurred previously?

(Select one choice per item.)

	Strongly Agree	Somewhat Agree	Neither	Somewhat Disagree	Strongly Disagree
a. Knowing the CWD status of a harvested deer is important to me.	<input type="checkbox"/>				
b. Knowing the CWD status of a harvested deer is critical to my decision to hunt.	<input type="checkbox"/>				
c. If testing was not available and estimated CWD prevalence was low (<1%; 1 out of 100 animals positive for disease), I would stop hunting in that area.	<input type="checkbox"/>				
d. If testing was not available and estimated CWD prevalence was moderate (5%; 5 out of 100 animals positive for disease), I would stop hunting in that area.	<input type="checkbox"/>				
e. If testing was not available and estimated CWD prevalence was high (>10%; 1 out of 10 animals positive for disease), I would stop hunting in that area.	<input type="checkbox"/>				
f. I would be willing to pay a nominal fee to get my harvested deer tested for CWD.	<input type="checkbox"/>				

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

Appendix B. Antlerless deer hunting license quotas, number of antlerless licenses sold, and number of hunters purchasing an antlerless license in Michigan during 2019, summarized by Deer Management Unit and license type (public and private lands).

DMU ^a	DMU name	Public land			Private land		
		License quota	Licenses sold ^b	License buyers ^b	License quota	Licenses sold ^b	License buyers ^b
003	Allegan County	50	59	59	4,000	3,928	2,825
005	Antrim County	800	727	614	7,000	3,223	2,683
006	Arenac County	500	399	383	7,000	3,384	2,665
007	Big Bay Unit	0	0	0	0	0	0
008	Barry County	1,000	864	717	7,500	5,291	4,313
009	Bay County	200	180	145	3,000	2,119	1,714
010	Benzie County	400	356	354	1,600	1,434	1,098
013	Calhoun County	100	94	81	7,500	6,264	4,840
015	Charlevoix County	900	802	703	6,000	2,234	1,758
016	Cheboygan County	800	645	635	1,000	890	793
017	Sault Ste. Marie Unit	0	0	0	0	0	0
018	Clare County	1,000	851	787	8,000	6,601	5,102
019	Clinton County	1,600	1,128	901	Unlimited	5,502	4,327
020	Crawford County	1,000	880	879	1,100	917	870
021	Manistique Unit	0	0	0	0	0	0
022	Crystal Falls Unit	240	208	207	500	436	435
023	Eaton County	200	186	176	Unlimited	5,473	4,294
024	Emmet County	600	532	464	2,200	1,915	1,592
025	Genesee County	0	0	0	0	4,288	3,627
026	Gladwin County	1,200	982	981	8,000	5,782	4,457
027	Watersmeet Unit	0	0	0	0	0	0
028	Grand Traverse County	400	345	345	1,600	1,385	1,157
029	Gratiot County	2,200	1,636	1,268	Unlimited	4,564	3,364
030	Hillsdale County	400	372	306	12,000	6,673	5,166
031	Nisula Unit	0	0	0	0	0	0
033	Ingham County	800	605	516	Unlimited	4,864	3,713
034	Ionia County	1,200	858	712	Unlimited	4,313	3,279
036	Amasa/Michigamme Unit	0	0	0	0	0	0
037	Isabella County	100	87	74	Unlimited	6,396	4,826
038	Jackson County	1,600	1,495	1,298	16,000	7,652	6,058

^aSee Figure 2 for the locations of DMUs.

^bNumber of license buyers does not add up to statewide total because hunters could purchase licenses in more than one DMU. Number of licenses sold could exceed the quota because junior licenses sold don't count against the quota.

^cSpecial deer hunts on public land. Licenses for these DMUs were available on a local basis.

^dPortion of a larger DMU.

Appendix B (continued). Antlerless deer hunting license quotas, number of antlerless licenses sold, and number of hunters purchasing an antlerless license in Michigan during 2019, summarized by Deer Management Unit and license type (public and private lands).

DMU ^a	DMU name	Public land			Private land		
		License quota	Licenses sold ^b	License buyers ^b	License quota	Licenses sold ^b	License buyers ^b
040	Kalkaska County	400	374	374	600	505	505
041	Kent County	1,400	828	734	Unlimited	4,176	3,417
042	Keweenaw Unit	0	0	0	0	0	0
043	Lake County	500	504	503	5,000	4,426	3,721
044	Lapeer County	2,000	1,136	1,010	12,000	7,293	5,809
045	Leelanau County	200	176	176	1,600	1,452	1,104
046	Lenawee County	400	371	319	7,500	5,181	4,146
047	Livingston County	2,000	1,326	1,191	10,000	4,920	4,090
048	Newberry Unit	0	0	0	0	0	0
050	Macomb County	200	184	176	4,000	1,982	1,665
051	Manistee County	500	456	456	3,500	3,044	2,535
053	Mason County	400	350	350	7,000	6,366	4,356
054	Mecosta County	400	321	290	Unlimited	4,410	3,456
055	Menominee Unit	1,200	1,065	887	7,000	5,218	4,187
056	Midland County	1,500	1,326	1,141	7,500	3,965	3,258
057	Missaukee County	400	361	361	3,200	2,871	2,279
058	Monroe County	100	66	66	1,000	885	856
059	Montcalm County	1,600	1,214	1,013	Unlimited	5,396	4,088
061	Muskegon County	800	709	636	Unlimited	2,968	2,423
062	Newaygo County	1,000	771	771	Unlimited	6,900	5,293
063	Oakland County	2,500	2,128	1,880	6,000	2,877	2,416
064	Oceana County	1,000	899	795	5,500	5,055	3,608
065	Ogemaw County	700	569	569	6,000	5,065	3,982
066	Ontonagon County	0	0	0	0	0	0
067	Osceola County	300	232	232	9,000	8,236	5,970
069	Otsego County	800	684	656	1,000	889	775
070	Ottawa County	450	423	382	Unlimited	3,747	3,110
072	Roscommon County	600	521	519	1,000	871	776
073	Saginaw County	200	156	155	6,500	5,422	4,284
074	St. Clair County	700	623	554	9,500	6,548	5,307
078	Shiawassee County	200	187	167	Unlimited	5,631	4,280
081	Washtenaw County	1,500	1,111	980	15,000	4,648	3,736
082	Wayne County	100	84	77	1,200	709	627
083	Wexford County	1,000	869	868	3,700	3,450	2,827

^aSee Figure 2 for the locations of DMUs.

^bNumber of license buyers does not add up to statewide total because hunters could purchase licenses in more than one DMU. Number of licenses sold could exceed the quota because junior licenses sold don't count against the quota.

^cSpecial deer hunts on public land. Licenses for these DMUs were available on a local basis.

^dPortion of a larger DMU.

Appendix B (continued). Antlerless deer hunting license quotas, number of antlerless licenses sold, and number of hunters purchasing an antlerless license in Michigan during 2019, summarized by Deer Management Unit and license type (public and private lands).

DMU ^a	DMU name	Public land			Private land		
		License quota	Licenses sold ^b	License buyers ^b	License quota	Licenses sold ^b	License buyers ^b
115	Beaver Island	200	99	88	300	123	115
117	Drummond Island	0	0	0	0	0	0
121	Bay De Noc Unit	480	415	368	800	734	571
122	Norway Unit	240	226	184	1,000	592	464
127	Ironwood Unit	0	0	0	0	0	0
131	Twin Lakes Unit	0	0	0	0	0	0
145	North Manitou Island ^d	0	0	0	0	0	0
149	Round/Bois Blanc Island	100	92	72	100	96	75
152	Gwinn Unit	0	0	0	0	0	0
155	Gladstone Unit	360	326	276	1,800	1,364	1,087
174	St. Clair Flats ^d	0	0	0	300	117	100
245	South Fox Island ^d	0	0	0	0	0	0
249	Trout Lake Unit	0	0	0	0	0	0
252	Rock Unit	0	0	0	0	0	0
255	LaBranche Unit	600	547	416	1,000	960	785
273	Shiawassee Unit ^d	0	0	0	0	0	0
311	Keeler Unit	560	473	409	8,000	7,839	4,677
312	Sherwood Unit	1,000	966	823	16,000	13,635	10,195
332	Greenleaf Unit	5,200	4,021	3,282	35,000	18,986	14,759
349	Engadine Unit	0	0	0	0	0	0
452	Core TB Area ^c	3,000	1,513	1,344	0	0	0
487	Northern Multi-County	21,000	9,363	7,734	30,000	15,707	12,551
CWD ^e	CWD Management Area	0	0	0	Unlimited	4,786	3,797
NA	Deer Management Assistance Permits	NA	NA	NA	NA	13,602	1,133
NA	Managed Deer Hunt Permits ^c	NA	661	597	NA	NA	NA

^aSee Figure 2 for the locations of DMUs.

^bNumber of license buyers does not add up to statewide total because hunters could purchase licenses in more than one DMU. Number of licenses sold could exceed the quota because junior licenses sold don't count against the quota.

^cSpecial deer hunts on public land. Licenses for these DMUs were available on a local basis.

^dPortion of a larger DMU.

^eAntlerless license type available in 2019 that was only valid on private land in the 16-county CWD Management Zone. This license was available at a reduced cost (\$12 versus \$20); however, it expired on November 3, 2019.

Appendix C. Estimated number of deer hunters, hunting effort, and deer harvested in Michigan during 2019, summarized by Deer Management Unit.

DMU ^d	Hunters ^{b,c}		Hunting effort (days) ^b		Deer harvested (all seasons combined) ^a					
	No.	95% CL ^e	No.	95% CL	Antlerless		Antlered bucks		Sexes combined	
					No.	95% CL	No.	95% CL	No.	95% CL
001	6,236	808	55,431	10,271	1,059	375	1,568	447	2,627	623
003	10,378	1,016	146,379	19,706	1,986	523	3,671	646	5,657	915
004	4,202	658	37,490	8,333	1,157	410	1,415	401	2,572	628
005	5,784	763	64,097	12,771	1,308	404	1,584	448	2,892	652
006	6,218	790	76,167	13,292	1,433	450	2,015	476	3,448	717
007	6,431	817	61,933	11,371	29	27	1,787	421	1,816	422
008	9,570	979	125,284	17,390	2,675	678	3,633	661	6,308	1,068
009	4,429	661	60,245	12,668	1,006	371	1,431	400	2,437	613
010	3,219	571	39,435	10,716	623	341	547	249	1,170	474
013	8,756	926	114,016	16,792	3,114	675	4,202	701	7,316	1,145
015	3,897	629	42,244	10,501	1,198	496	1,119	373	2,317	660
016	6,610	823	67,794	11,968	714	280	1,928	488	2,642	607
017	3,304	585	34,962	8,417	8	15	1,017	354	1,025	355
018	11,962	1,090	136,402	17,072	3,487	706	4,030	683	7,517	1,063
019	9,300	966	121,258	17,642	3,437	801	3,861	693	7,298	1,249
020	7,627	891	78,561	12,458	1,193	391	1,564	433	2,757	640
021	5,506	756	53,727	9,616	49	58	1,593	398	1,642	402
022	6,219	797	54,881	9,255	557	225	2,049	469	2,606	558
023	7,696	875	111,306	17,085	2,885	698	3,524	674	6,409	1,110
024	4,270	666	42,807	8,813	493	254	1,120	349	1,613	482
025	7,327	854	111,820	17,402	1,737	494	2,820	561	4,557	813
026	11,742	1,079	132,763	18,325	2,911	669	2,731	542	5,642	936
027	2,278	489	17,598	4,620	86	120	545	228	631	258
028	6,236	796	79,122	14,555	950	330	1,819	463	2,769	626
029	7,389	850	79,110	13,423	2,286	581	3,360	623	5,646	970
030	8,544	921	108,863	16,746	3,183	696	3,852	679	7,035	1,115
031	3,553	610	33,190	7,692	29	27	915	319	944	320
033	6,942	834	88,004	14,912	2,657	628	2,651	569	5,308	1,003
034	8,944	944	122,872	18,792	2,701	680	2,893	582	5,594	1,004
035	8,481	932	90,414	14,259	1,519	462	2,805	567	4,324	778
036	4,427	678	37,796	8,086	21	22	1,337	397	1,358	398
037	9,336	952	113,934	17,506	3,679	744	4,447	733	8,126	1,200
038	12,716	1,127	177,288	21,396	3,746	725	5,426	809	9,172	1,233

^aHarvest estimates do not include deer taken with DMA permits. An additional 7,270 deer were taken with these permits.

^bColumn totals for hunting effort and harvest may not equal regional and statewide totals because of rounding errors.

^cNumber of hunters does not add up to statewide total because hunters can hunt in more than one DMU.

^dSee Figure 2 for the locations of DMUs.

^e95 confidence limit.

Appendix C (continued). Estimated number of deer hunters, hunting effort, and deer harvested in Michigan during 2019, summarized by Deer Management Unit.

DMU ^d	Hunters ^{b,c}		Hunting effort (days) ^b		Deer harvested (all seasons combined) ^a					
	No.	95% CL ^e	No.	95% CL	Antlerless		Antlered bucks		Sexes combined	
					No.	95% CL	No.	95% CL	No.	95% CL
040	6,832	836	73,003	12,503	795	290	1,017	325	1,812	456
041	11,818	1,085	151,721	19,607	2,713	587	4,423	731	7,136	1,033
042	1,929	441	17,961	5,566	2	3	326	189	328	189
043	13,692	1,169	144,990	17,083	1,966	467	3,218	602	5,184	830
044	11,162	1,047	152,606	20,062	3,169	693	3,719	650	6,888	1,045
045	3,669	607	48,467	10,914	1,077	398	1,055	348	2,132	618
046	6,363	798	89,577	15,102	2,049	536	2,667	563	4,716	876
047	9,326	968	120,123	16,948	2,516	582	2,891	581	5,407	905
048	3,349	594	26,112	6,204	0	0	778	288	778	288
050	4,686	690	55,989	11,490	1,156	428	1,135	371	2,291	617
051	9,280	963	100,262	14,438	2,004	491	1,912	441	3,916	731
053	8,880	928	110,922	16,005	3,079	665	2,928	563	6,007	1,019
054	11,354	1,057	130,685	17,872	4,185	830	2,721	520	6,906	1,081
055	11,120	1,070	112,143	14,215	2,708	677	4,601	743	7,309	1,099
056	8,474	920	109,242	17,257	2,049	565	2,867	576	4,916	900
057	8,511	928	84,729	13,046	1,706	455	2,126	470	3,832	692
058	3,848	629	53,761	12,061	373	230	1,168	357	1,541	442
059	11,939	1,084	148,807	19,204	4,423	859	3,984	700	8,407	1,268
060	7,756	898	68,757	11,407	1,704	537	1,200	353	2,904	733
061	6,500	803	81,110	12,936	1,474	441	1,907	479	3,381	723
062	17,060	1,297	206,318	23,072	5,546	1,034	5,598	834	11,144	1,475
063	9,030	962	127,861	20,039	1,610	434	2,417	536	4,027	770
064	9,318	958	127,394	18,356	3,334	757	3,825	689	7,159	1,185
065	10,794	1,047	110,778	15,447	2,098	497	3,185	608	5,283	874
066	3,673	619	30,269	6,994	0	0	1,188	350	1,188	350
067	11,464	1,054	126,388	16,711	3,553	780	3,652	642	7,205	1,125
068	7,861	903	59,039	9,385	1,578	453	1,101	331	2,679	603
069	5,308	738	48,068	9,440	760	324	1,325	380	2,085	532
070	8,422	906	108,129	15,652	1,902	497	2,873	588	4,775	852
071	8,171	915	77,938	12,251	1,662	495	2,591	548	4,253	802
072	9,304	979	95,748	14,901	1,305	393	1,734	439	3,039	631
073	9,100	940	114,303	16,091	2,185	566	3,627	628	5,812	957
074	10,711	1,027	138,903	18,492	2,394	559	3,644	624	6,038	946
078	7,642	866	102,141	16,081	2,458	635	3,842	704	6,300	1,093
081	8,420	917	100,250	15,303	2,201	552	2,895	545	5,096	895
082	1,172	350	12,865	5,852	134	135	211	137	345	217
083	10,064	1,011	96,801	13,602	1,703	451	2,300	520	4,003	763

^aHarvest estimates do not include deer taken with DMA permits. An additional 7,270 deer were taken with these permits.

^bColumn totals for hunting effort and harvest may not equal regional and statewide totals because of rounding errors.

^cNumber of hunters does not add up to statewide total because hunters can hunt in more than one DMU.

^dSee Figure 2 for the locations of DMUs.

^e95 confidence limit.

Appendix C (continued). Estimated number of deer hunters, hunting effort, and deer harvested in Michigan during 2019, summarized by Deer Management Unit.

DMU ^d	Hunters ^{b,c}		Hunting effort (days) ^b		Deer harvested (all seasons combined) ^a					
	No.	95% CL ^e	No.	95% CL	Antlerless		Antlered bucks		Sexes combined	
					No.	95% CL	No.	95% CL	No.	95% CL
115	470	223	3,705	2,323	85	93	242	187	327	235
117	1,139	349	8,622	3,799	0	0	295	170	295	170
121	3,612	611	30,454	7,332	751	377	1,356	367	2,107	589
122	1,609	404	18,171	6,896	242	188	593	255	835	334
127	1,524	405	16,627	5,483	0	0	378	208	378	208
131	2,641	521	24,762	6,227	38	56	589	236	627	254
145	35	57	195	331	0	0	30	54	30	54
149	798	293	4,990	2,358	58	76	332	180	390	223
152	3,008	563	27,580	6,869	30	54	819	295	849	300
155	4,283	668	40,472	8,242	450	243	1,686	424	2,136	500
174	281	171	2,518	1,795	3	0	93	121	96	121
245	0	0	0	0	0	0	0	0	0	0
249	2,581	523	20,862	5,510	0	0	415	211	415	211
252	1,321	373	9,982	3,473	0	0	389	222	389	222
255	3,421	597	30,610	7,200	707	314	898	310	1,605	479
273	850	288	9,503	4,807	282	179	210	159	492	260
311	14,719	1,209	217,870	24,451	4,121	882	7,097	960	11,218	1,494
312	16,703	1,276	233,203	25,312	6,288	1,067	7,836	968	14,124	1,632
332	33,383	1,773	412,078	31,009	9,414	1,126	13,020	1,215	22,434	1,841
349	2,227	484	19,474	6,235	0	0	503	220	503	220
452	9,668	985	91,837	13,684	2,485	800	2,539	514	5,024	1,034

^aHarvest estimates do not include deer taken with DMA permits. An additional 7,270 deer were taken with these permits.

^bColumn totals for hunting effort and harvest may not equal regional and statewide totals because of rounding errors.

^cNumber of hunters does not add up to statewide total because hunters can hunt in more than one DMU.

^dSee Figure 2 for the locations of DMUs.

^e95 confidence limit.