



# MICHIGAN DEER HARVEST SURVEY REPORT 1999 SEASONS

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## ABSTRACT

A survey of deer hunters was conducted following the 1999 hunting seasons to estimate hunter participation, harvest, and hunting effort. In 1999, an estimated 780,560 hunters spent 11,613,495 days afield. Statewide, the number of people hunting deer declined by 7% and hunting effort declined by 13% between 1998 and 1999. Hunters harvested 544,895 deer, a decrease of 9% from the record number taken in 1998. Harvest of antlerless deer declined by 14%, and harvest of antlered bucks declined by 2%. Despite the decline in harvest between 1998 and 1999, the number of deer taken in 1999 was the second highest number ever taken. Statewide, 44% of hunters harvested a deer. About 24% of the hunters took an antlerless deer and 29% took an antlered buck. About 16% of deer hunters harvested two or more deer.

## INTRODUCTION

During 1999, white-tailed deer (*Odocoileus virginianus*) could be harvested during (1) archery, (2) early antlerless, (3) regular firearm, (4) muzzleloader, and (5) late antlerless hunting seasons. In order to harvest a deer, hunters had to possess a hunting license (firearm, archery, combination, or antlerless license).

A harvest tag was issued as part of the hunting license. Hunters could purchase a maximum of two harvest tags, excluding tags associated with antlerless licenses. Archery and firearm licenses included one harvest tag, while the combination license had two harvest tags. A firearm license allowed a person to take one deer with at least one antler 3 inches or longer. An archery license allowed an individual to take one deer of either sex. A person with a combination license could take two deer of either sex. If two antlered deer were taken, however, one of these deer needed to have at least one antler with four or more points (qualifying points must be at least 1 inch).



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An antlerless license could be purchased in addition to archery, firearm, or combination licenses. Antlerless deer licenses allowed hunters to take deer without antlers or with antlers shorter than 3 inches. Use of each antlerless license was restricted to a single Deer Management Unit (DMU) designated at the time of purchase. Antlerless licenses were available for most of the state except in portions of the Upper Peninsula. People hunting in DMUs in the southern and northeastern parts of the Lower Peninsula could purchase an unlimited number of antlerless licenses. The number of licenses available in most of the other DMUs open to antlerless deer hunting was restricted by quota. For these units, hunters could purchase as many licenses as they wanted until all licenses were sold; however, they were limited to purchasing one license per day.

Block Permits and Deer Management Assistance Permits were special antlerless permits issued to landowners in areas experiencing severe crop damage, or areas where management objectives included controlling diseases or severe deer overpopulation. These permits allowed hunters to take an antlerless deer during any deer season on the land where issued or adjacent lands (Block Permits only). To use these permits, the hunter must also have purchased a firearm, archery, combination, or antlerless deer license for the season in which they were hunting.

The archery season occurred statewide on public and private lands. This season was divided into an early and late season (i.e., October 1 to November 14 and December 1, 1999, to January 2, 2000). Archery, antlerless, and combination deer hunting licenses could be used to take deer on any lands during the archery seasons using archery equipment.

The statewide regular firearm season occurred November 15-30. The muzzleloader season was held December 3-12 in the Upper Peninsula and December 10-19 in the Lower Peninsula. Hunters were allowed to take deer on both public and private lands with firearm and combination deer hunting licenses during the regular firearm and muzzleloader seasons. Antlerless licenses also could be used during the firearm seasons; however, some of these antlerless licenses could only be used on private lands.

The late antlerless season, affecting the Lower Peninsula, occurred from December 18, 1999, through January 2, 2000. Hunters pursuing deer during this season had to possess an unused antlerless license and were limited to hunting on private land, except hunters in DMU 452 in the northeast Lower Peninsula. Hunters in DMU 452 could hunt on either public or private lands.

In DMU 452, an early firearm season for antlerless deer was held October 16-25. Hunters participating during this season had to possess an antlerless license, and hunting was restricted to private land.

The Michigan Department of Natural Resources (DNR) has the authority and responsibility to protect and manage the wildlife resources of the state of Michigan. Harvest surveys are one of the primary management tools used by the DNR to accomplish its statutory responsibility. Estimating hunter participation, harvest, and hunting effort are the primary objectives of these



surveys. Estimates derived from harvest surveys as well as information gained from summer deer observations, deer harvest check stations, deer pellet group surveys, and population modeling are used to monitor deer populations and establish harvest regulations.

## METHODS

Following the 1999 deer hunting seasons, a questionnaire was sent to 47,646 randomly selected people that had purchased a hunting license (firearm, archery, antlerless, or combination deer hunting licenses). Hunters receiving the questionnaire were asked to report which season they pursued deer, number of days spent afield, and number of deer harvested. Hunters were instructed not to report hunting effort and harvest associated with Block Permits and Deer Management Assistance Permits because landowners obtaining these permits were required to report the number of deer harvested to the DNR.

Estimates were calculated using a simple random sampling design (Cochran 1977) and were presented along with their 95% confidence limit (CL). This confidence limit 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 that the true value would be within this interval 95 times out of 100. Estimates were not adjusted for possible nonresponse bias.

Estimates were calculated separately by the area where the hunt occurred. The state was divided into eight areas that closely matched the DNR's wildlife management administrative units (Fig. 1). The state was also divided into three ecological regions (Upper Peninsula, northern Lower Peninsula, and southern Lower Peninsula). These regions generally matched major ecoregions, except in the Upper Peninsula where two ecoregions were combined (Albert 1995). Ecoregions are regions having similar soils, vegetation, climate, geology, and physiography. Deer harvested from unknown locations were allocated among areas in proportion to the known harvest.

The questionnaire used to gather data from hunters was redesigned in 1999 to make it easier for hunters to complete. On the old questionnaire, hunters checked a box indicating they had hunted during a season and then reported the number of days they hunted in a separate question. On the revised questionnaire, the former question was eliminated. Thus, hunter participation was based solely on whether the hunter reported any hunting effort (days). Because the changes on the questionnaire affected how hunters reported information, it also affected some of the comparisons made to the estimates from previous years. To minimize the effect of these changes, estimates of hunter numbers in 1998 were recalculated using participation to determine hunter numbers, comparable to methods used for 1999 estimates.

Questionnaires were mailed initially during mid-January 2000, and a reminder note and two follow-up questionnaires were mailed to nonrespondents. To increase the number of questionnaires returned, everybody that returned their questionnaire promptly was eligible to win a prize. Although 47,646 people were sent the questionnaire, 1,246 surveys were undeliverable resulting in an adjusted sample size of 46,400. Questionnaires were returned by 35,042 of 46,400 people receiving the questionnaire (76% response rate).



## RESULTS

In 1999, 832,088 people purchased a license to hunt deer in Michigan. The number of people buying a license in 1999 declined nearly 5% from 1998 (873,891 people purchased a license in 1998). Most of the people buying a license were men (91.6%), although 8.4% of the licensees were women. The average age of the license buyers was 40 years (Fig 2).

Combination licenses were available for the first time in 1998. Because these new licenses included two harvest tags, fewer licenses having a single tag (archery and firearm licenses) were sold during the last two years (Table 1). The number of 1999 deer harvest tags sold for all license types combined increased 1.3% since 1998. License buyers purchased an average of 2.2 harvest tags. About 86% of the license buyers purchased three or fewer harvest tags and 97% purchased five or fewer harvest tags (Fig. 3). Hunters most frequently purchased antlerless and combination harvest tags (Fig. 4). License buyers purchased an average of 0.83 antlerless licenses. About 50% of the license buyers purchased at least one antlerless license, and 97% of license buyers purchased three or fewer antlerless licenses (Fig. 5).

About  $93.8 \pm 0.3\%$  ( $780,560 \pm 2,055$  hunters) of the people buying a license in 1999 actually spent time hunting deer (Table 2). Most hunters ( $721,980 \pm 2,889$ ) pursued deer during the regular firearm season (Fig. 6). Statewide, the number of people hunting deer during all seasons combined declined by 6.8%. Hunter numbers declined by 4.1% in the northern Lower Peninsula and 6.7% in the southern Lower Peninsula. In contrast, the number of hunters in the Upper Peninsula changed little between 1998 and 1999.

Although fewer people hunted deer during all of the seasons, the declines were greatest for the early antlerless (50% decline), late antlerless (21% decline), and muzzleloader (16% decline) seasons. The number of hunters participating in the regular firearm and archery seasons declined by about 8% statewide (Table 2). Most of this decline occurred because fewer people hunted in the Lower Peninsula.

About 44% of the days that hunters spent pursuing deer throughout the state occurred during the archery season (Fig. 7). Likewise, 44% of the hunting effort occurred in the regular firearm season. Less than 15% of the hunting effort occurred in the muzzleloader, early antlerless, and late antlerless seasons. Statewide, hunters devoted an average of 15.2 days afield hunting deer during all seasons combined (Table 3). Archers had the greatest number of days available to hunt deer (78 days) and devoted the greatest number of days afield ( $\bar{x} = 15.1$  days/hunter) (Fig. 8, Table 3).

For all seasons and areas combined, hunting effort decreased by 13% between 1998 and 1999 (Table 2). Hunting effort declined for all seasons, but the declines were greatest for the early (59% decline) and late antlerless (26% decline) seasons. The number of days spent hunting during archery and muzzleloader seasons declined about 15%, while hunting effort in the regular firearm season declined by about 8%.



An estimated 544,895 deer were harvested in 1999, a decrease of nearly 9% from the record number taken in 1998 (Tables 4-5). Despite the decline between 1998 and 1999, the number of deer taken in 1999 was the second highest number ever taken. During the last 36 years (since 1963), the number of deer taken in the regular firearm season has almost tripled from 124,000 to 330,000 animals. During this same period, harvest in the archery season has increased from 2,100 to 142,600 animals. Moreover, about 24,600 deer were taken during the muzzleloader season and 36,000 deer in the late antlerless season in 1999, seasons that did not exist 35 years ago.

Between 1998 and 1999, deer harvest for individual seasons decreased from 6% for the archery season to 35% for the early antlerless season (Figs. 9-10, Tables 4-5). Statewide, the antlered buck harvest decreased 2% from last year, while the antlerless harvest decreased 14%.

About 60% of the animals harvested (sexes combined) in 1999 were taken during the regular firearm season (Fig. 11). Most of the antlerless deer (55%) and antlered bucks (68%) were harvested in the regular firearm season. Hunters took 27% of the harvested deer (sexes combined) during archery season. During the archery season, hunters took 24% of the antlerless deer and 29% of the antlered bucks harvested. Few antlered bucks (3%) were taken in the muzzleloader season. The muzzleloader and antlerless seasons accounted for 21% of the antlerless deer harvested.

Statewide, 44% of the deer hunters harvested at least one deer (all deer seasons and sexes combined) in 1999 (Fig. 12, Table 6). About 24% of the hunters took an antlerless deer and 29% took an antlered buck. About 16% of deer hunters harvested two or more deer. Nearly 7% of the hunters harvested two or more antlerless deer and about 5% of the hunters took two antlered bucks.

Hunters were most successful in taking a deer during the regular firearm season (Fig. 13, Table 7); about 36% of the hunters harvested a deer (sexes combined) during the regular firearm season. Hunter success was only slightly lower during the archery (32% successful) and early firearm (31%) seasons. Nearly 23% of the hunters took an antlered buck and 17% harvested an antlerless deer during the regular firearm season. Hunter success was lowest in the muzzleloader season (13% successful).

## LITERATURE CITED

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- Cochran, W. G. 1977. Sampling techniques. John Wiley & Sons, New York. 428pp.
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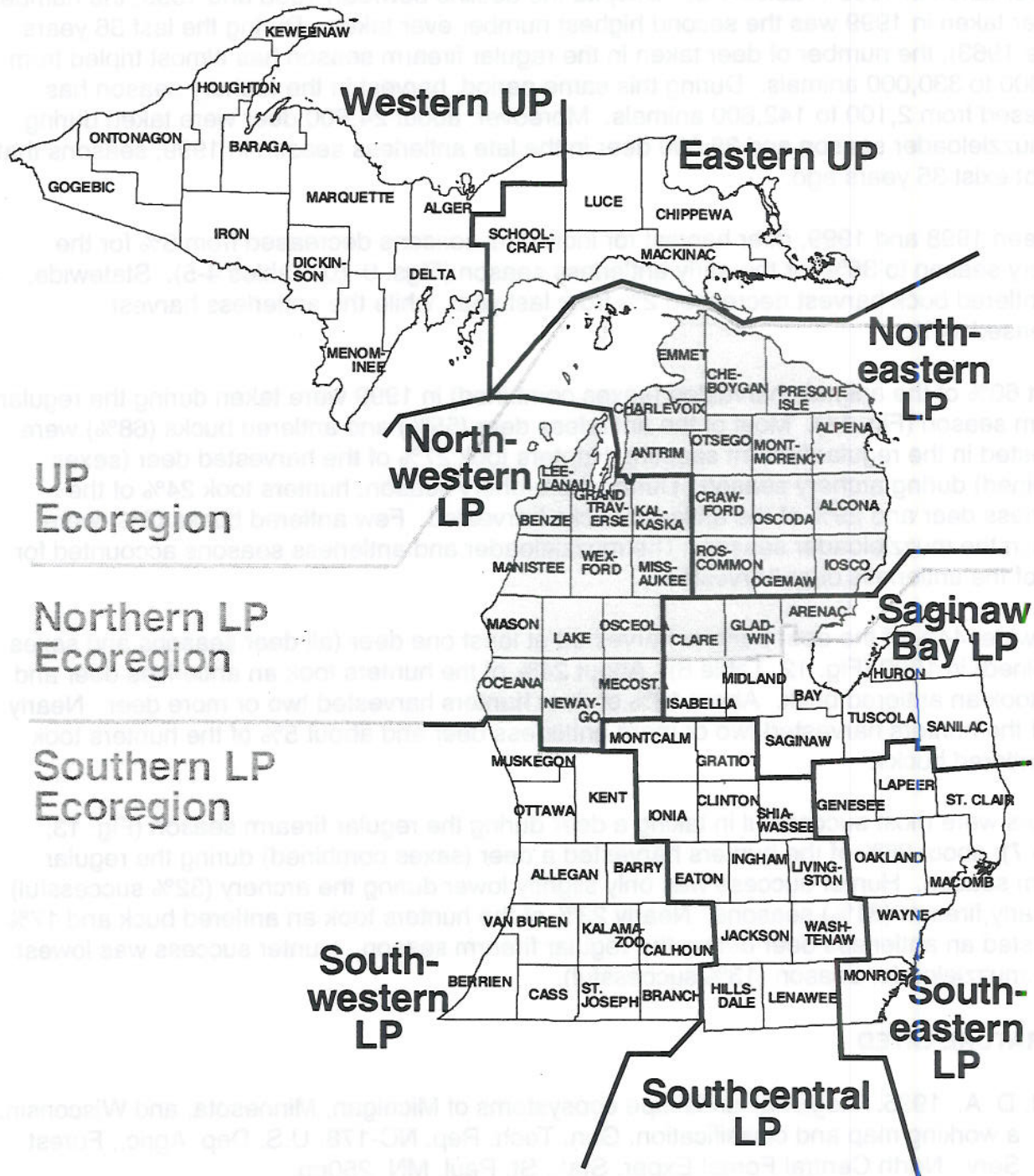


Figure 1. Areas used to summarize deer harvest in Michigan for the 1999 hunting seasons.



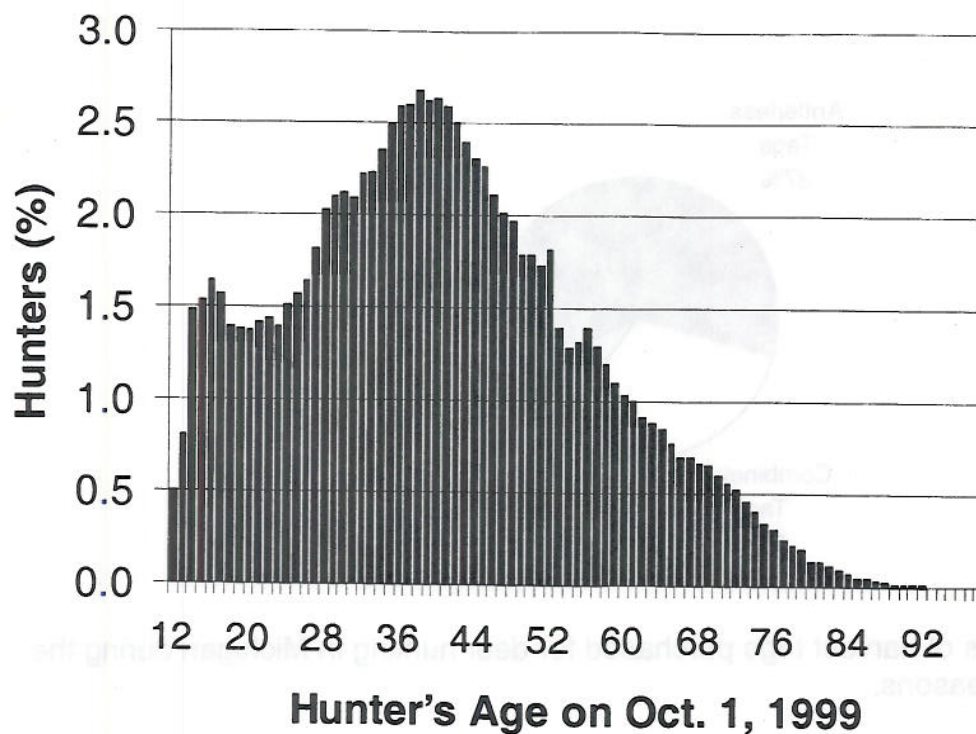


Figure 2. Age of people that purchased a deer hunting license in Michigan for the 1999 hunting seasons.

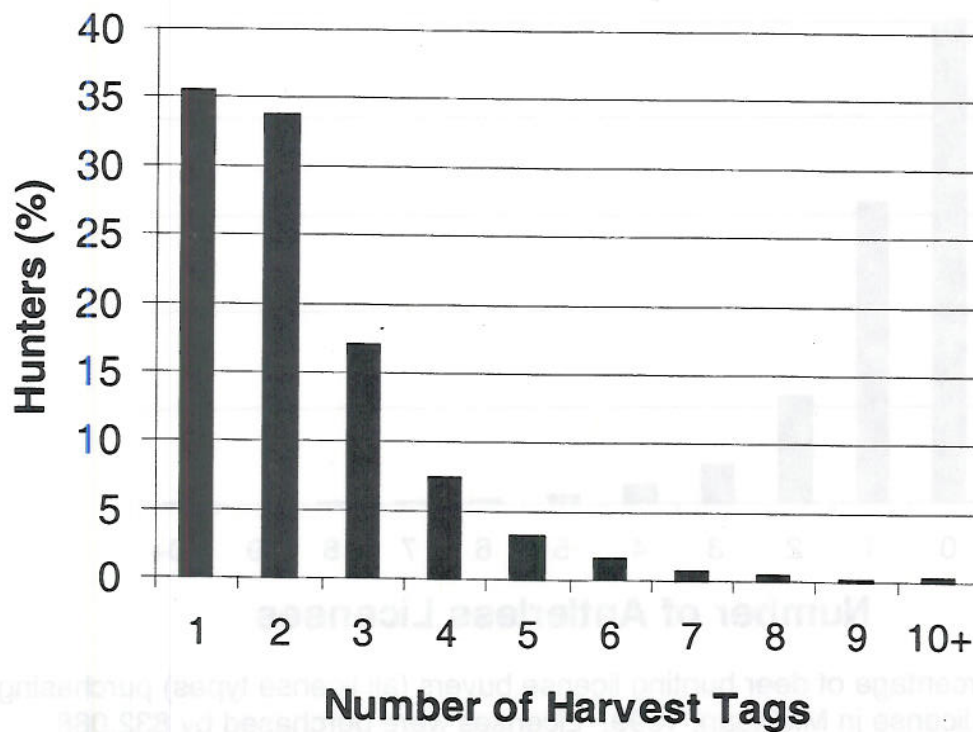


Figure 3. Number of harvest tags (all license and tag types) purchased per person for hunting deer in Michigan during the 1999 hunting seasons. Licenses were purchased by 832,088 people.

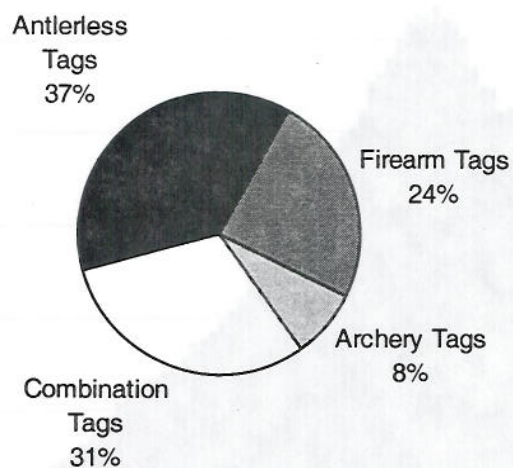


Figure 4. Types of harvest tags purchased for deer hunting in Michigan during the 1999 hunting seasons.

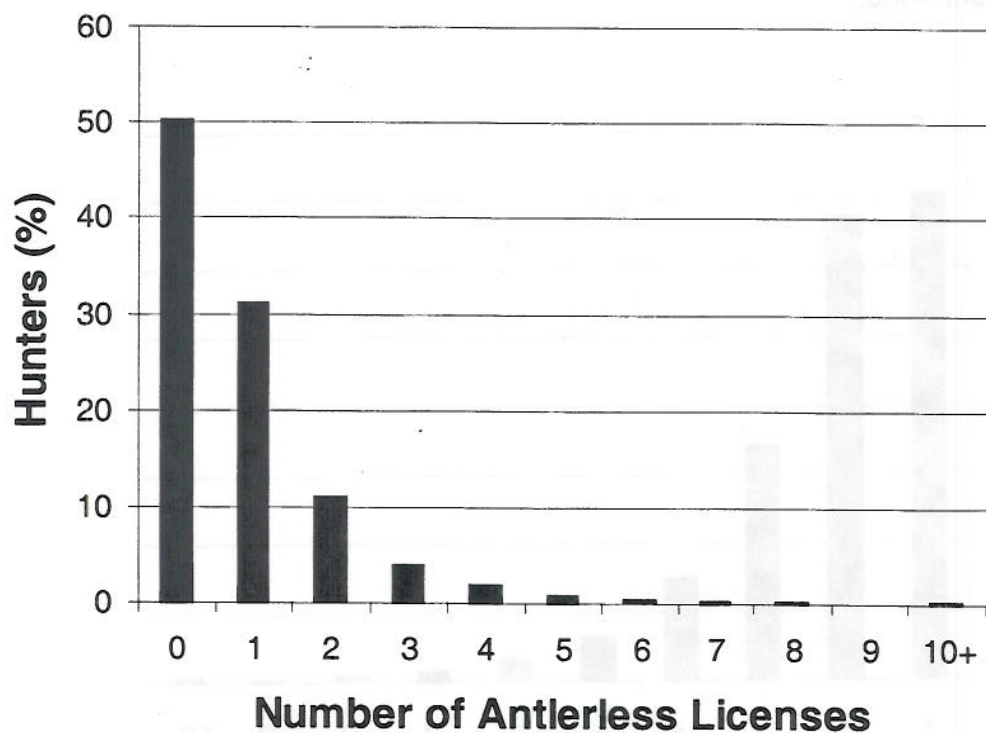


Figure 5. Percentage of deer hunting license buyers (all license types) purchasing an antlerless license in Michigan, 1999. Licenses were purchased by 832,088 people.



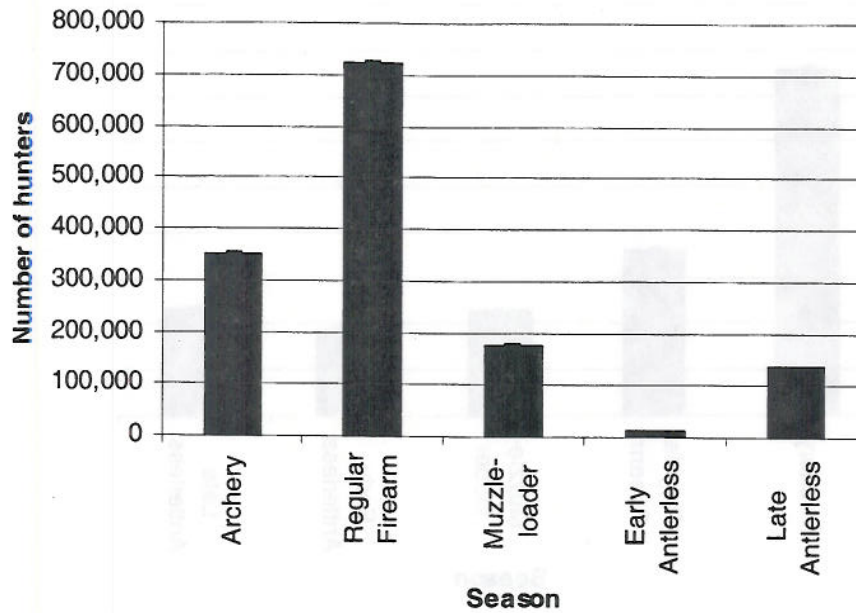


Figure 6. Number of people hunting deer in Michigan during the 1999 hunting seasons. Error bars represent the 95% confidence limits.

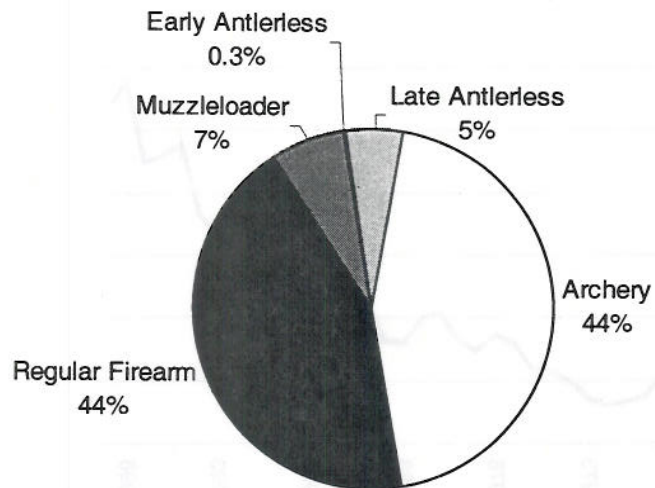


Figure 7. The distribution of hunting effort among deer hunting seasons in Michigan, 1999.

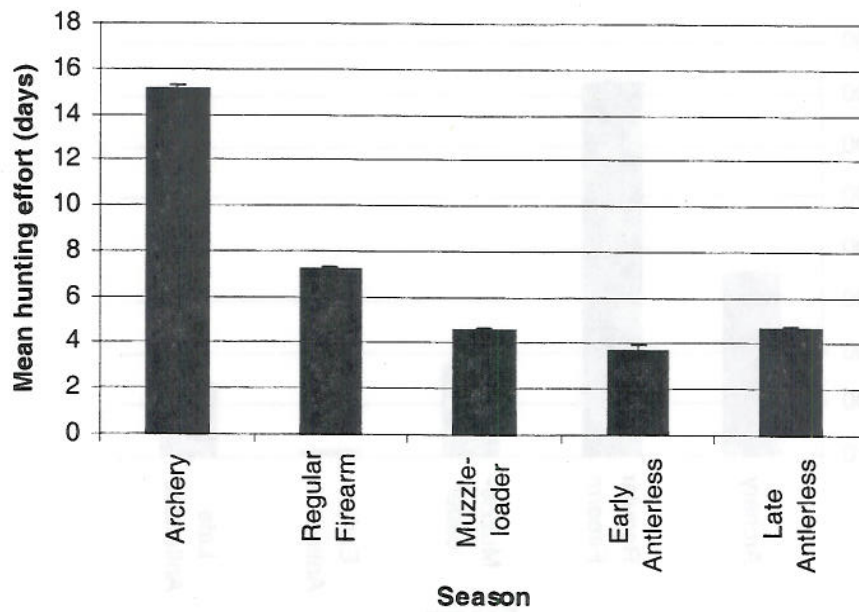


Figure 8. Mean number of days spent hunting deer in Michigan during the 1999 hunting seasons. Error bars represent the 95% confidence limits.

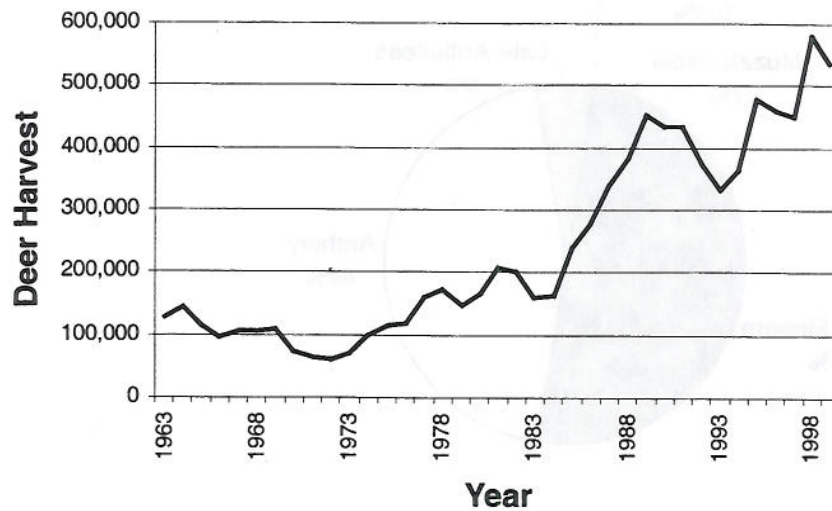


Figure 9. Number of deer harvested in Michigan's hunting seasons, 1963-1999. Harvest from all seasons and for all deer sexes was combined.



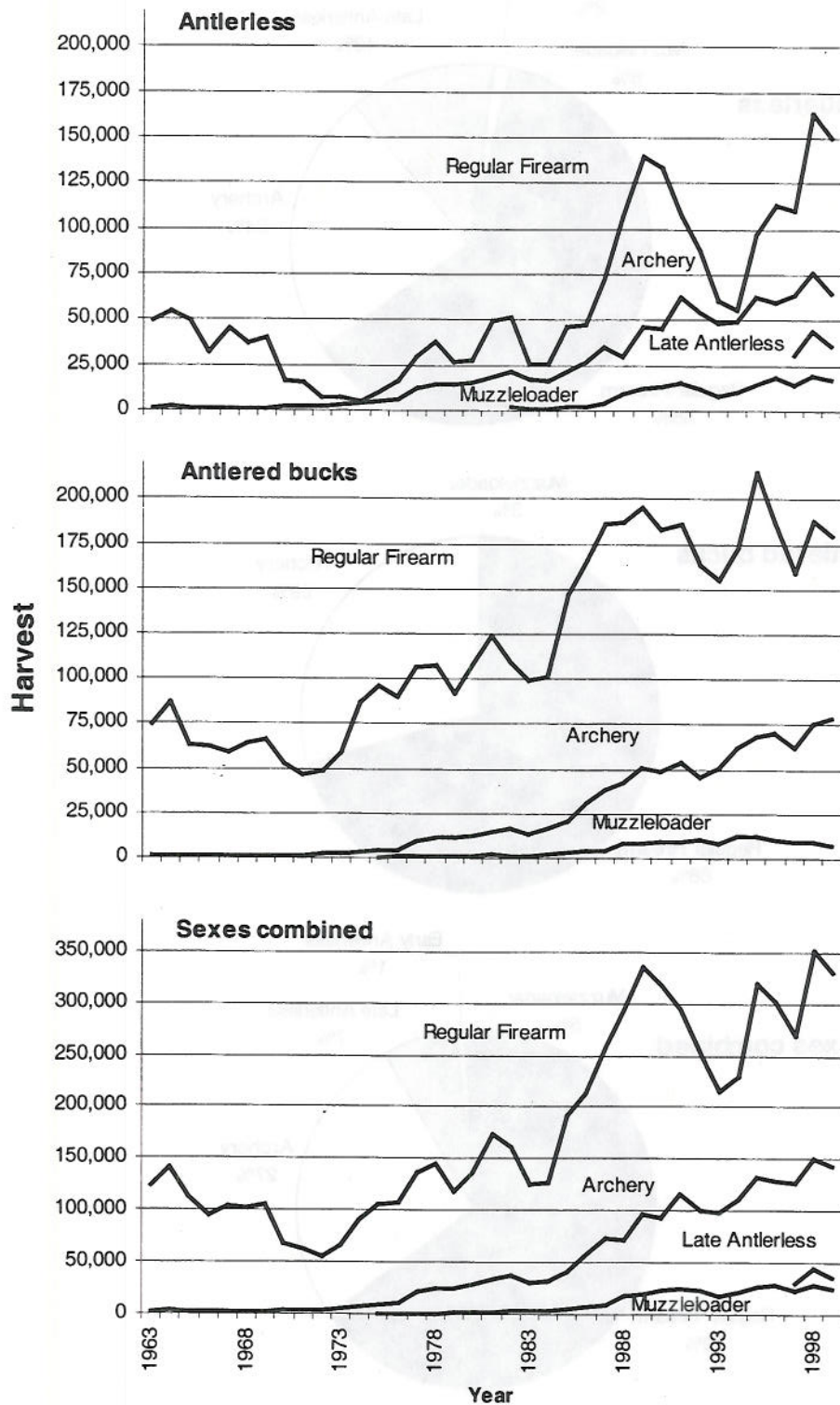


Figure 10. Number of deer harvested in Michigan's hunting seasons, 1963-1999. Harvest for early antlerless season not shown.

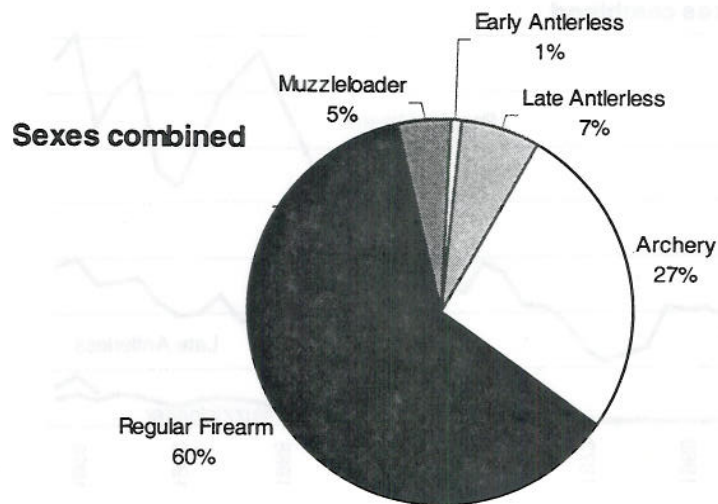
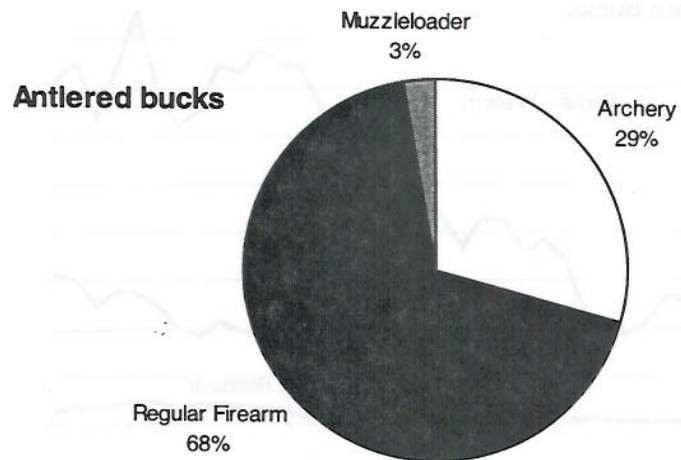
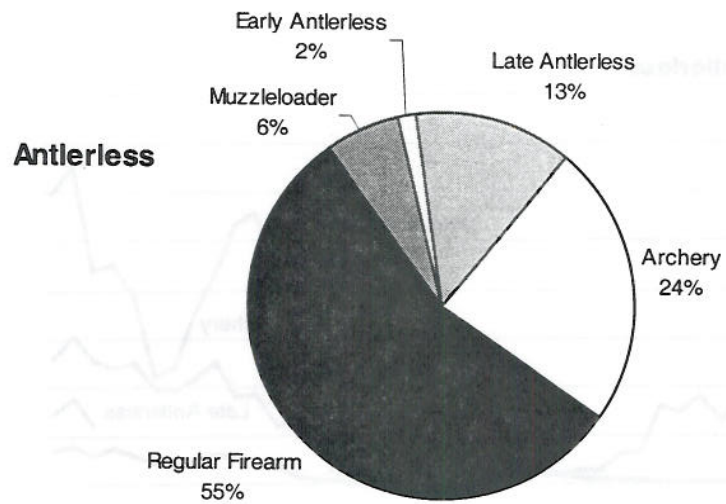


Figure 11. The distribution of harvest among deer hunting seasons in Michigan, 1999.



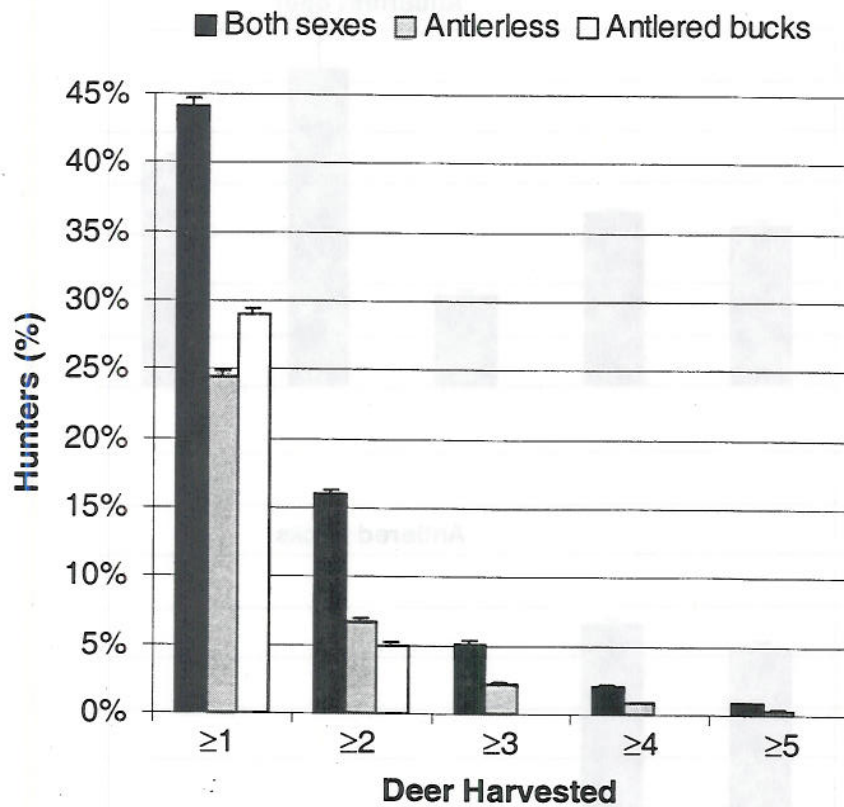


Figure 12. The percentage of hunters harvesting a deer in Michigan, 1999. Error bars represent the 95% confidence limits.

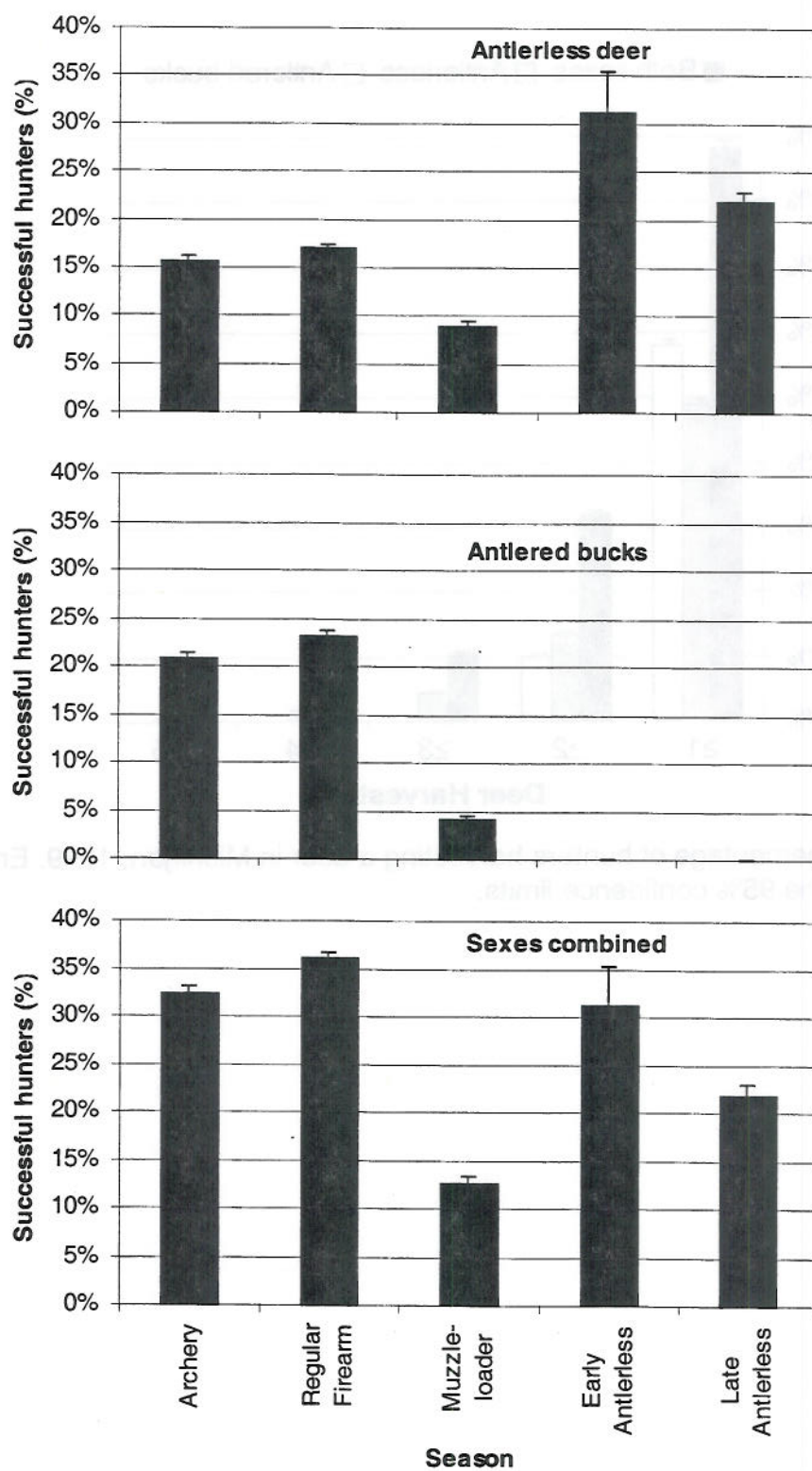


Figure 13. The percentage of hunters harvesting a deer in Michigan's deer hunting seasons, 1999. Error bars represent the 95% confidence limits.



Table 1. Number of Michigan deer licenses and harvest tags purchased, 1997-1999.

Licenses or Harvest Tags	Number purchased			Change (%) Between 1998 and 1999
	1997	1998	1999	
<b>Firearm Licenses</b>				
Resident	724,403	458,676	388,158	-15.4%
Non-resident	16,957	15,574	15,118	-2.9%
Senior	61,592	47,648	38,331	-19.6%
Military	48	92	19	-79.3%
<b>Archery Licenses</b>				
Resident	360,694	170,693	118,688	-30.5%
Non-resident	5,541	4,242	4,162	-1.9%
Junior	31,028	18,989	16,129	-15.1%
Senior	22,019	13,214	6,232	-52.8%
Military	17	78	26	-66.7%
<b>Combination Licenses<sup>a</sup></b>				
Resident	N/A	196,519	245,051	24.7%
Non-resident	N/A	741	1,069	44.3%
Junior	N/A	13,152	18,548	41.0%
Senior	N/A	11,926	20,042	68.1%
Military	N/A	N/A	115	
<b>Antlerless Licenses</b>				
Resident	400,866	644,829	674,617	4.6%
Non-resident	3,706	6,417	8,473	32.0%
Junior	20,001	16,786	8,839	-47.3%
Block Permits	36,228	19,743	9,250	-53.1%
Deer Management Assistance	1,619	747	723	-3.2%
Harsens Island	128	76	125	64.5%
Early Antlerless	4,606	N/A	N/A	
<b>Harvest Tags<sup>b</sup></b>				
Firearm	803,000	521,990	441,626	-15.4%
Archery	419,299	207,216	145,237	-29.9%
Combination	N/A	444,674	569,650	28.1%
Antlerless	467,154	688,598	702,027	2.0%
<b>Total Harvest Tags</b>	<b>1,689,453</b>	<b>1,834,041</b>	<b>1,858,540</b>	<b>1.3%</b>

<sup>a</sup>Combination licenses included two harvest tags. All other license types had one harvest tag.

<sup>b</sup>The number of harvest tags purchased in 1998 was incorrectly reported in the 1998 harvest report.

<sup>NA</sup>License type did not exist.

Table 2. Number of deer hunters and hunting efforts in Michigan by hunting season, 1998-1999.

Season and Area	Number of hunters <sup>a</sup>			Hunting efforts (days)			Change from 1998 to 1999
	1998	1999	95% CL <sup>b</sup>	1998	1999	95% CL <sup>b</sup>	
Archery							
West UP	28,882	27,236	1,517	363,923	291,377	21,407	-19.9%
East UP	9,729	10,733	962	113,611	97,531	11,948	-14.2%
NELP	68,492	60,337	2,211	732,020	571,632	29,542	-21.9%
NWLP	78,947	76,722	2,467	979,705	887,707	38,617	-9.4%
Sag. Bay	71,249	66,369	2,310	971,408	824,711	38,536	-15.1%
SWLP	65,067	61,548	2,232	1,072,210	886,207	41,431	-17.3%
SCLP	76,190	71,545	2,390	1,175,707	1,034,134	45,411	-12.0%
SELP	43,035	43,597	1,900	640,266	552,269	32,767	-13.7%
UP	38,094	37,399	2,969	477,534	388,908	24,516	-18.6%
NLP	168,987	157,456	4,150	2,038,582	1,725,327	52,913	-15.4%
SLP	218,052	205,541	4,198	3,532,733	3,031,332	76,821	-14.2%
Statewide <sup>c</sup>	381,129	351,077	4,211	6,048,850	5,145,567	96,588	-14.9%
Regular Firearm							
West UP	91,676	89,093	2,637	679,124	659,662	22,807	-2.9%
East UP	28,518	29,753	1,583	193,260	198,434	12,320	2.7%
NELP	152,136	137,866	3,170	914,099	809,881	23,524	-11.4%
NWLP	157,470	151,306	3,289	934,162	896,841	24,893	-4.0%
Sag. Bay	120,861	111,081	2,900	732,596	667,315	21,976	-8.9%
SWLP	119,497	110,606	2,895	823,378	739,280	23,877	-10.2%
SCLP	138,135	126,136	3,058	904,887	819,639	25,003	-9.4%
SELP	51,551	48,464	1,997	308,182	278,435	14,046	-9.7%
UP	119,042	117,493	1,767	872,384	858,096	25,922	-1.6%
NLP	341,609	320,754	3,340	2,079,080	1,922,567	36,301	-7.5%
SLP	376,825	343,502	3,677	2,538,224	2,288,823	41,603	-9.8%
Statewide <sup>c</sup>	785,228	721,980	2,889	5,489,688	5,069,487	61,238	-7.7%

<sup>a</sup>Excludes people that did not hunt during the season.

<sup>b</sup>95% confidence limit for the 1999 estimate.

<sup>c</sup>Number of hunters does not add up to statewide total because hunters can hunt in more than one area.



Table 2 (continued). Number of deer hunters and hunting efforts in Michigan by hunting season, 1998-1999.

Season and Area	Number of hunters <sup>a</sup>			Change from 1998 to 1999			Hunting efforts (days)			Change from 1998 to 1999	
	1998	1999	95% CL <sup>b</sup>				1998	1999	95% CL <sup>b</sup>		
<b>Muzzeloader</b>											
West UP	15,638	14,366	1,111	-8.1%			77,196	69,859	6,028	-9.5%	
East UP	5,849	5,177	670	-11.5%			26,763	22,655	3,324	-15.3%	
NE LP	27,215	22,653	1,388	-16.8%			113,086	89,325	6,223	-21.0%	
NW LP	30,276	25,550	1,471	-15.6%			115,356	99,682	6,521	-13.6%	
Sag. Bay	34,791	28,115	1,541	-19.2%			138,197	117,926	7,428	-14.7%	
SW LP	43,216	36,117	1,738	-16.4%			192,560	157,817	8,697	-18.0%	
SC LP	43,914	36,568	1,748	-16.7%			184,693	154,461	8,531	-16.4%	
SE LP	18,274	16,171	1,177	-11.5%			75,841	64,656	5,429	-14.7%	
UP	21,214	19,424	1,288	-8.4%			103,959	92,514	6,884	-11.0%	
NLP	65,855	55,042	2,119	-16.4%			263,301	217,392	9,668	-17.4%	
SLP	127,073	105,976	2,843	-16.6%			556,430	466,476	14,861	-16.2%	
Statewide <sup>c</sup>	206,414	174,505	3,471	-15.5%			923,691	776,381	19,126	-15.9%	
<b>Early Antlerless</b>											
West UP	0	0	0				0	0	0		
East UP	0	0	0				0	0	0		
NE LP	21,705	10,875	968	-49.9%			92,956	38,373	4,057	-58.7%	
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	21,705	10,875	968	-49.9%			92,956	38,373	4,057	-58.7%	
SLP	0	0	0				0	0	0		
Statewide <sup>c</sup>	21,705	10,875	968	-49.9%			92,956	38,373	4,057	-58.7%	

<sup>a</sup>Excludes people that did not hunt during the season.

<sup>b</sup>95% confidence limit for the 1999 estimate.

<sup>c</sup>Number of hunters does not add up to statewide total because hunters can hunt in more than one area.

Table 2 (continued). Number of deer hunters and hunting efforts in Michigan by hunting season, 1998-1999.

Season and Area	Number of hunters <sup>a</sup>			Change from 1998 to 1999	Hunting efforts (days)			Change from 1998 to 1999
	1998	1999	95% CL <sup>b</sup>		1998	1999	95% CL <sup>b</sup>	
Late Antlerless								
West UP	0	0	0		0	0	0	
East UP	0	0	0		0	0	0	
NE LP	16,517	19,329	1,284	17.0%	69,086	73,409	6,146	6.3%
NW LP	27,185	19,163	1,279	-29.5%	109,219	72,567	6,136	-33.6%
Sag. Bay	26,033	21,727	1,360	-16.5%	113,174	93,775	7,343	-17.1%
SW LP	41,944	31,320	1,623	-25.3%	200,754	147,418	9,515	-26.6%
SC LP	44,550	31,154	1,619	-30.1%	211,820	138,931	9,041	-34.4%
SE LP	17,486	13,440	1,075	-23.1%	85,298	57,587	5,698	-32.5%
UP	0	0	0		0	0	0	
NLP	45,216	43,787	1,904	-3.2%	185,640	166,558	9,260	-10.3%
SLP	125,710	90,613	2,656	-27.9%	603,710	417,129	15,758	-30.9%
Statewide <sup>c</sup>	170,532	134,399	3,138	-21.2%	789,351	583,687	18,408	-26.1%
All Seasons								
West UP	99,646	98,781	2,758	-0.9%	1,120,243	1,020,473	39,231	-8.9%
East UP	31,882	34,478	1,699	8.1%	333,634	318,513	21,698	-4.5%
NE LP	172,411	160,448	3,364	-6.9%	1,921,247	1,582,389	51,085	-17.6%
NW LP	177,472	174,007	3,468	-2.0%	2,138,442	1,957,048	60,135	-8.5%
Sag. Bay	140,893	132,476	3,120	-6.0%	1,955,375	1,703,924	60,456	-12.9%
SW LP	135,044	128,036	3,077	-5.2%	2,288,902	1,930,468	67,205	-15.7%
SC LP	156,621	146,961	3,252	-6.2%	2,477,107	2,147,267	70,923	-13.3%
SE LP	68,795	68,173	2,339	-0.9%	1,109,587	953,412	47,734	-14.1%
UP	129,801	130,861	3,104	0.8%	1,453,877	1,338,985	44,831	-7.9%
NLP	383,795	367,960	4,235	-4.1%	4,659,559	4,070,404	85,054	-12.6%
SLP	430,073	401,369	4,261	-6.7%	7,231,097	6,204,106	120,298	-14.2%
Statewide <sup>c</sup>	837,780	780,560	2,055	-6.8%	13,344,537	11,613,495	154,346	-13.0%

<sup>a</sup>Excludes people that did not hunt during the season.<sup>b</sup>95% confidence limit for the 1999 estimate.<sup>c</sup>Number of hunters does not add up to statewide total because hunters can hunt in more than one area.





Table 4. Number of deer harvested in Michigan, 1997-1999.

Season or permit	Type of deer <sup>b</sup>	1997	1998	1999	Change from 1998 to 1999
<b>Season</b>					
Archery	Antlerless	64,202	76,064	64,374	-15.4%
	Antlered bucks	62,311	74,949	78,241	4.4%
	Sexes combined	126,513	151,013	142,615	-5.6%
Regular firearm	Antlerless	110,025	163,843	149,858	-8.5%
	Antlered bucks	159,148	187,632	180,157	-4.0%
	Sexes combined	269,173	351,475	330,014	-6.1%
Muzzleloader	Antlerless	14,579	19,765	17,120	-13.4%
	Antlered bucks	8,973	9,319	7,480	-19.7%
	Sexes combined	23,552	29,084	24,600	-15.4%
Early antlerless	Antlerless	2,305	6,655	4,298	-35.4%
Late antlerless	Antlerless	31,184	44,084	36,046	-18.2%
Special permits <sup>a</sup>	Antlerless	25,998	15,679	7,322	-53.3%
Grand Total	Antlerless	248,293	326,090	279,017	-14.4%
	Antlered bucks	230,432	271,900	265,878	-2.2%
	Sexes combined	478,725	597,990	544,895	-8.9%

<sup>a</sup>Includes deer harvested with Block Permits and Deer Management Assistance Permits. These permits could be used during any deer hunting season.

<sup>b</sup>Refer to Hill (2000) for breakdown of harvest by age and sex of animal.



Table 5. Number of deer harvested in Michigan by hunting season, 1998-1999.<sup>a</sup>

Season and Area	Antlerless				Antlered Bucks				Sexes Combined			
	1998 Harvest	1999 Harvest	95% CL <sup>b</sup>	Change from 1998 to 1999	1998 Harvest	1999 Harvest	95% CL <sup>b</sup>	Change from 1998 to 1999	1998 Harvest	1999 Harvest	95% CL <sup>b</sup>	Change from 1998 to 1999
<b>Archery</b>												
West UP	5,037	6,301	832	25.1%	4,660	6,616	795	42.0%	9,697	12,917	1,246	33.2%
East UP	1,385	1,933	430	39.6%	1,113	1,743	405	56.6%	2,498	3,677	618	47.2%
NE LP	12,945	6,779	850	-47.6%	8,686	7,069	815	-18.6%	21,631	13,848	1,253	-36.0%
NW LP	13,777	11,672	1,129	-15.3%	14,567	15,142	1,206	3.9%	28,344	26,813	1,792	-5.4%
Sag. Bay	13,606	11,194	1,112	-17.7%	12,626	13,566	1,124	7.4%	26,232	24,760	1,713	-5.6%
SW LP	10,145	8,831	1,018	-12.9%	12,170	11,918	1,078	-2.1%	22,315	20,749	1,630	-7.0%
SC LP	13,895	12,316	1,283	-11.4%	15,929	16,097	1,263	1.1%	29,824	28,413	2,009	-4.7%
SE LP	5,275	5,347	890	1.4%	5,197	6,090	779	17.2%	10,472	11,437	1,275	9.2%
<b>UP</b>												
UP	6,422	8,235	936	28.2%	5,773	8,359	892	44.8%	12,195	16,594	1,390	36.1%
NLP	31,846	22,723	1,563	-28.6%	27,618	26,773	1,592	-3.1%	59,464	49,496	2,412	-16.8%
SLP	37,795	33,416	2,066	-11.6%	41,559	43,109	2,052	3.7%	79,354	76,525	3,196	-3.6%
Statewide	76,064	64,374	2,759	-15.4%	74,949	78,241	2,754	4.4%	151,013	142,615	4,249	-5.6%
<b>Regular Firearm</b>												
West UP	5,390	12,837	1,331	138.2%	29,107	32,542	1,768	11.8%	34,497	45,403	2,384	31.6%
East UP	0	2,284	517		4,319	7,021	823	62.6%	4,319	9,311	1,031	115.6%
NE LP	25,585	21,467	1,589	-16.1%	29,716	27,630	1,634	-7.0%	55,301	49,099	2,450	-11.2%
NW LP	29,004	25,601	1,717	-11.7%	34,126	33,046	1,770	-3.2%	63,130	58,650	2,666	-7.1%
Sag. Bay	24,917	22,693	1,737	-8.9%	27,234	24,011	1,537	-11.8%	52,151	46,699	2,539	-10.5%
SW LP	31,431	24,327	1,728	-22.6%	25,673	23,077	1,485	-10.1%	57,104	47,395	2,495	-17.0%
SC LP	39,389	33,847	2,116	-14.1%	30,627	27,055	1,627	-11.7%	70,016	60,882	2,906	-13.0%
SE LP	8,127	6,803	891	-16.3%	6,830	5,775	730	-15.4%	14,957	12,575	1,231	-15.9%
<b>UP</b>												
UP	5,390	15,120	1,428	180.5%	33,426	39,564	1,950	18.4%	38,816	54,714	2,598	41.0%
NLP	59,679	53,895	2,524	-9.7%	72,868	68,991	2,569	-5.3%	132,547	122,891	3,894	-7.3%
SLP	98,774	80,842	3,221	-18.2%	81,338	71,603	2,636	-12.0%	180,112	152,408	4,536	-15.4%
Statewide	163,843	149,858	4,365	-8.5%	187,632	180,157	4,183	-4.0%	351,475	330,014	6,556	-6.1%

<sup>a</sup>Harvest estimates do not include deer taken with Block Permits or Deer Management Assistance Permits. An additional 7,322 deer were taken with these permits.

<sup>b</sup>95% confidence limit for the 1999 estimate.

Table 5 (continued). Number of deer harvested in Michigan by hunting season, 1998-1999.<sup>a</sup>

Season and Area	Antlerless			Antlered Bucks			Sexes Combined		
	1998 Harvest	1999 Harvest	Change from 1998 to 1999 CL <sup>a</sup>	1998 Harvest	1999 Harvest	Change from 1998 to 1999 CL <sup>a</sup>	1998 Harvest	1999 Harvest	Change from 1998 to 1999 CL <sup>a</sup>
<b>Muzzleloader</b>									
West UP	749	1,596	402	1,049	1,034	299	1,798	2,631	509
East UP	0	339	193	147	409	188	147	748	299
NE LP	2,977	1,644	407	1,202	601	228	4,179	2,245	484
NW LP	2,589	2,104	444	1,228	1,058	302	3,817	3,163	545
Sag. Bay	3,498	2,491	488	1,507	1,082	319	5,005	3,573	597
SW LP	3,963	3,555	578	1,786	1,419	350	5,749	4,973	697
SCLP	4,638	4,159	666	1,836	1,515	373	6,474	5,673	795
SE LP	1,352	1,233	350	564	361	176	1,916	1,593	397
UP	749	1,935	446	1,196	1,443	353	1,945	3,380	590
NLP	6,560	4,643	672	2,696	1,924	407	9,256	6,567	802
SLP	12,457	10,543	1,024	5,426	4,113	609	17,883	14,654	1,233
Statewide	19,765	17,120	1,319	9,319	7,480	819	29,084	24,600	1,601
			-13.4%			-19.7%			-15.4%
<b>Early antlerless</b>									
West UP	0	0	0	0	0	0	0	0	0
East UP	0	0	0	0	0	0	0	0	0
NE LP	6,655	4,298	777	0	0	0	6,655	4,298	777
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
SCLP	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	6,655	4,298	777	0	0	0	6,655	4,298	777
SLP	0	0	0	0	0	0	0	0	0
Statewide	6,655	4,298	777	0	0	0	6,655	4,298	777
			-35.4%			-35.4%			-35.4%

<sup>a</sup>Harvest estimates do not include deer taken with Block Permits or Deer Management Assistance Permits. An additional 7,322 deer were taken with these permits.

<sup>b</sup>95% confidence limit for the 1999 estimate.



Table 5 (continued). Number of deer harvested in Michigan by hunting season, 1998-1999.<sup>a</sup>

Season and Area	Antlerless			Antlered Bucks			Sexes Combined		
	1998 Harvest	1999 Harvest	Change from 1998 to 1999	1998 Harvest	1999 Harvest	Change from 1998 to 1999	1998 Harvest	1999 Harvest	Change from 1998 to 1999
<b>Late Antlerless</b>									
West UP	0	0	0	0	0	0	0	0	0
East UP	0	0	0	0	0	0	0	0	0
NE LP	5,559	4,581	-17.6%	0	0	0	5,559	4,581	-17.6%
NW LP	8,643	6,896	-20.2%	0	0	0	8,643	6,896	-20.2%
Sag. Bay	6,283	6,799	8.2%	0	0	0	6,283	6,799	8.2%
SW LP	8,714	7,016	-19.5%	0	0	0	8,714	7,016	-19.5%
SC LP	11,396	8,125	-28.7%	0	0	0	11,396	8,125	-28.7%
SE LP	3,490	2,628	-24.7%	0	0	0	3,490	2,628	-24.7%
UP	0	0	0	0	0	0	0	0	0
NLP	14,618	13,695	-6.3%	0	0	0	14,618	13,695	-6.3%
SLP	29,467	22,351	-24.2%	0	0	0	29,467	22,351	-24.2%
Statewide	44,086	36,046	-18.2%	0	0	0	44,086	36,046	-18.2%
<b>All Seasons</b>									
West UP	11,176	20,746	1,744	34,816	40,175	2,037	45,992	60,951	2,978
East UP	1,385	4,562	734	5,579	9,170	981	6,964	13,739	1,344
NE LP	53,721	38,803	2,360	39,604	35,291	1,895	93,325	74,090	3,352
NW LP	54,013	46,271	2,526	49,921	49,249	2,285	103,934	95,526	3,855
Sag. Bay	48,304	43,174	2,711	41,367	38,667	2,076	89,671	81,835	3,886
SW LP	54,253	43,702	2,629	39,629	36,416	2,001	93,882	80,108	3,781
SC LP	69,318	58,421	3,253	48,392	44,676	2,229	117,710	103,079	4,506
SE LP	18,244	16,016	1,672	12,591	12,234	1,125	30,835	28,245	2,227
UP	12,561	25,309	1,892	40,395	49,345	2,261	52,956	74,690	3,267
NLP	119,358	99,289	3,811	103,182	97,684	3,197	222,540	196,974	5,587
SLP	178,493	147,097	5,007	128,323	118,849	3,625	306,816	265,909	7,038
Statewide	310,413	271,695	6,611	271,900	265,878	5,357	582,313	537,573	9,610

<sup>a</sup>Harvest estimates do not include deer taken with Block Permits or Deer Management Assistance Permits. An additional 7,322 deer were taken with these permits.

<sup>b</sup>95% confidence limit for the 1999 estimate.

Table 6. Percentage of deer hunters harvesting deer in Michigan during all seasons, 1999.<sup>a</sup>

Sex and Area	Number of deer harvested									
	≥1 deer		≥2 deer		≥3 deer		≥4 deer		≥5 deer	
	Success	95% CL <sup>b</sup>	Success	95% CL <sup>b</sup>	Success	95% CL <sup>b</sup>	Success	95% CL <sup>b</sup>	Success	95% CL <sup>b</sup>
<b>Antlerless</b>										
West UP	16.0%	1.1%	3.3%	0.5%	0.7%	0.2%	0.4%	0.2%	0.2%	0.1%
East UP	11.2%	1.6%	1.4%	0.6%	0.4%	0.3%	0.1%	0.1%	0.0%	0.0%
NE LP	18.4%	0.9%	3.5%	0.4%	1.1%	0.2%	0.4%	0.1%	0.2%	0.1%
NW LP	20.3%	0.9%	4.1%	0.4%	1.1%	0.2%	0.4%	0.1%	0.1%	0.1%
Sag. Bay	22.6%	1.1%	6.0%	0.6%	2.0%	0.4%	0.6%	0.2%	0.3%	0.1%
SW LP	23.6%	1.1%	6.9%	0.7%	2.1%	0.4%	0.6%	0.2%	0.3%	0.1%
SCLP	26.1%	1.1%	7.9%	0.7%	2.9%	0.4%	1.2%	0.3%	0.4%	0.2%
SE LP	17.0%	1.3%	4.1%	0.7%	1.1%	0.4%	0.3%	0.2%	0.1%	0.1%
UP	15.0%	0.9%	2.9%	0.4%	0.6%	0.2%	0.3%	0.1%	0.1%	0.1%
NLP	20.3%	0.6%	4.2%	0.3%	1.3%	0.2%	0.4%	0.1%	0.1%	0.1%
SLP	24.6%	0.6%	7.3%	0.4%	2.4%	0.2%	0.9%	0.1%	0.3%	0.1%
Statewide	24.4%	0.5%	6.7%	0.3%	2.2%	0.2%	0.8%	0.1%	0.3%	0.1%
<b>Antlered Bucks<sup>c</sup></b>										
West UP	35.8%	1.4%	4.4%	0.6%						
East UP	23.3%	2.1%	3.0%	0.9%						
NE LP	19.6%	0.9%	2.0%	0.3%						
NW LP	24.6%	1.0%	3.3%	0.4%						
Sag. Bay	24.4%	1.1%	4.3%	0.5%						
SW LP	24.0%	1.1%	4.1%	0.5%						
SCLP	25.5%	1.1%	4.6%	0.5%						
SE LP	15.9%	1.3%	1.8%	0.5%						
UP	33.2%	1.2%	4.2%	0.5%						
NLP	23.2%	0.7%	3.0%	0.3%						
SLP	24.8%	0.6%	4.4%	0.3%						
Statewide	29.0%	0.5%	4.9%	0.2%						

<sup>a</sup>Excludes people that did not hunt during the season and deer taken with Block Permits or Deer Management Assistance Permits.<sup>b</sup>95% confidence limit.<sup>c</sup>The season bag limit for antlered deer was two.



Table 6 (continued). Percentage of deer hunters harvesting deer in Michigan during all seasons, 1999.<sup>a</sup>

Sex and Area	Number of deer harvested									
	≥1 deer		≥2 deer		≥3 deer		≥4 deer		≥5 deer	
	Success	95% CL <sup>b</sup>	Success	95% CL <sup>b</sup>	Success	95% CL <sup>b</sup>	Success	95% CL <sup>b</sup>	Success	95% CL <sup>b</sup>
<b>Sexes Combined</b>										
West UP	45.4%	1.5%	11.7%	1.0%	2.2%	0.4%	0.8%	0.3%	0.0%	0.0%
East UP	30.4%	2.3%	7.6%	1.3%	1.1%	0.5%	0.3%	0.3%	0.1%	0.1%
NE LP	32.9%	1.1%	8.9%	0.7%	2.2%	0.3%	0.8%	0.2%	0.1%	0.1%
NW LP	37.8%	1.1%	11.8%	0.7%	3.1%	0.4%	1.0%	0.2%	0.2%	0.2%
Sag. Bay	40.0%	1.3%	13.3%	0.9%	4.3%	0.5%	1.7%	0.3%	0.2%	0.2%
SW LP	39.4%	1.3%	14.3%	0.9%	5.2%	0.6%	1.9%	0.4%	0.3%	0.3%
SC LP	42.2%	1.2%	16.4%	0.9%	5.8%	0.6%	2.6%	0.4%	0.2%	0.2%
SE LP	28.0%	1.6%	8.6%	1.0%	2.5%	0.6%	0.7%	0.3%	0.6%	0.6%
UP	42.2%	1.3%	10.9%	0.8%	2.0%	0.4%	0.7%	0.2%	0.1%	0.1%
NLP	36.8%	0.7%	11.2%	0.5%	3.0%	0.3%	1.0%	0.2%	0.1%	0.1%
SLP	40.8%	0.7%	15.3%	0.5%	5.4%	0.3%	2.2%	0.2%	0.6%	0.6%
Statewide	44.2%	0.5%	16.0%	0.4%	5.1%	0.2%	2.0%	0.1%	0.8%	0.1%

<sup>a</sup>Excludes people that did not hunt during the season and deer taken with Block Permits or Deer Management Assistance Permits.

<sup>b</sup>95% confidence limit.

<sup>c</sup>The season bag limit for antlered deer was two.

Table 7. Percentage of deer hunters harvesting at least one deer in Michigan by hunting season, 1999.<sup>a</sup>

Sex and Area	Season									
	Archery		Regular Firearm		Muzzleloader		Early Antlerless		Late Antlerless	
	Success	95% CL <sup>b</sup>	Success	95% CL <sup>b</sup>	Success	95% CL <sup>b</sup>	Success	95% CL <sup>b</sup>	Success	95% CL <sup>b</sup>
<b>Antlerless</b>										
West UP	20.7%	2.3%	11.2%	1.0%	9.9%	2.3%			16.0%	1.1%
East UP	16.6%	3.4%	6.5%	1.3%	5.5%	3.0%			11.2%	1.6%
NE LP	10.2%	1.2%	13.5%	0.9%	6.2%	1.5%	31.2%	4.2%	2.7%	0.9%
NW LP	13.5%	1.2%	14.2%	0.8%	7.6%	1.6%			3.1%	0.9%
Sag. Bay	14.6%	1.3%	16.4%	1.0%	7.9%	1.5%			2.7%	1.1%
SW LP	12.2%	1.2%	17.8%	1.1%	9.0%	1.4%			2.0%	1.1%
SC LP	13.8%	1.2%	20.9%	1.1%	9.7%	1.4%			2.1%	1.1%
SE LP	10.1%	1.3%	11.9%	1.4%	7.0%	1.9%			3.0%	1.3%
UP	19.7%	1.9%	10.1%	0.8%	8.8%	1.9%			15.0%	0.9%
NLP	12.9%	0.8%	14.2%	0.6%	7.5%	1.0%	31.2%	4.2%	1.9%	0.6%
SLP	13.4%	0.7%	18.6%	0.6%	8.9%	0.8%			1.2%	0.6%
Statewide	15.6%	0.6%	17.0%	0.4%	8.9%	0.6%	31.2%	4.2%	1.1%	0.5%
<b>Antlered Bucks</b>										
West UP	22.6%	2.4%	33.9%	1.5%	6.8%	2.0%			35.8%	1.4%
East UP	15.3%	3.2%	21.9%	2.2%	7.8%	3.5%			23.3%	2.1%
NE LP	11.1%	1.2%	18.5%	1.0%	2.5%	1.0%	0.0%	0.0%	0.0%	0.9%
NW LP	18.3%	1.3%	20.4%	1.0%	4.0%	1.1%			0.0%	1.0%
Sag. Bay	19.4%	1.4%	19.7%	1.1%	3.5%	1.0%			0.0%	1.1%
SW LP	17.9%	1.4%	19.3%	1.1%	3.9%	1.0%			0.0%	1.1%
SC LP	20.6%	1.4%	19.7%	1.0%	3.8%	0.9%			0.0%	1.1%
SE LP	12.9%	1.5%	11.2%	1.3%	2.2%	1.1%			0.0%	1.3%
UP	20.8%	2.0%	31.2%	1.3%	7.1%	1.7%			33.2%	1.2%
NLP	16.0%	0.9%	20.0%	0.7%	3.4%	0.7%	0.0%	0.0%	0.0%	0.7%
SLP	19.3%	0.8%	19.1%	0.6%	3.7%	0.5%			0.0%	0.6%
Statewide	20.7%	0.6%	23.2%	0.5%	4.2%	0.4%	0.0%	0.0%	0.0%	0.5%

<sup>a</sup>Excludes people that did not hunt during the season and deer taken with Block Permits or Deer Management Assistance Permits.  
<sup>b</sup>95% confidence limit.



Table 7 (continued). Percentage of deer hunters harvesting at least one deer in Michigan by hunting season, 1999.<sup>a</sup>

Sex and Area	Season									
	Archery		Regular Firearm		Muzzleloader		Early Antlerless		Late Antlerless	
	Success	95% CL <sup>b</sup>	Success	95% CL <sup>b</sup>	Success	95% CL <sup>b</sup>	Success	95% CL <sup>b</sup>	Success	95% CL <sup>b</sup>
<b>Sexes combined</b>										
West UP	39.4%	2.8%	41.5%	1.5%	16.4%	2.9%			45.4%	1.5%
East UP	30.3%	4.2%	26.5%	2.4%	11.9%	4.2%			30.4%	2.3%
NE LP	19.9%	1.5%	29.0%	1.1%	8.3%	1.7%	31.2%	4.2%	2.7%	1.1%
NW LP	28.8%	1.5%	31.6%	1.1%	11.4%	1.9%			3.1%	1.1%
Sag. Bay	31.1%	1.7%	32.6%	1.3%	11.3%	1.8%			2.7%	1.3%
SW LP	26.6%	1.7%	33.0%	1.3%	12.5%	1.6%			2.0%	1.3%
SC LP	30.0%	1.6%	36.0%	1.3%	12.9%	1.6%			2.1%	1.2%
SE LP	20.4%	1.8%	21.1%	1.7%	9.1%	2.1%			3.0%	1.6%
UP	37.3%	2.3%	38.1%	1.3%	15.3%	2.4%			42.2%	1.3%
NLP	26.4%	1.0%	31.0%	0.8%	10.6%	1.2%	31.2%	4.2%	1.9%	0.7%
SLP	28.9%	0.9%	33.7%	0.8%	12.1%	0.9%			1.2%	0.7%
Statewide	32.4%	0.7%	36.1%	0.5%	12.6%	0.7%	31.2%	4.2%	1.1%	0.5%

<sup>a</sup>Excludes people that did not hunt during the season and deer taken with Block Permits or Deer Management Assistance Permits.

<sup>b</sup>95% confidence limit.

