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1999 DEER HARVEST FOR EARLY ARCHERY, EARLY FIREARM, AND REGULAR FIREARM DEER SEASONS IN THE NORTHEAST LOWER PENINSULA

Brian J. Frawley

ABSTRACT

A telephone survey of Michigan deer hunters was conducted to estimate hunting effort and harvest in Deer Management Unit (DMU) 452 during early archery, early firearm, and regular firearm seasons. The number of people that hunted deer in DMU 452 was greater in 1999 than 1998, although fewer antlerless licenses were sold for DMU 452. Of archery and firearm hunters, about 26% harvested a deer in 1999, while 38% of these hunters were successful in 1998. Hunters harvested 25,969 deer in the archery and regular firearm seasons, a 16% decline from 1998. Although hunters took fewer deer in 1999, the projected pre-hunt deer population in 1999 was 21-28% lower than during 1998. So far in 1999, 56% of the deer taken have been antlerless deer, compared to 53% for the same period in 1998. Thus, the relative size and composition of the harvest in 1999 was comparable to 1998 levels, although final harvest estimates for all seasons will not be available until the 1999 Michigan Deer Harvest Survey is completed.

INTRODUCTION

In an effort to eradicate Bovine Tuberculosis (TB), the Wildlife Bureau created a special DMU (DMU 452) consisting of Alpena, Alcona, Montmorency, Oscoda, Otsego, and Presque Isle counties. Hunting will be the primary tool used to reduce deer numbers. Deer can be harvested during early archery (Oct. 1–Nov. 14), early firearm (Oct. 16-25), regular firearm (Nov. 15-30), muzzleloader (Dec. 10-19), and late firearm (Dec. 18-Jan. 2) seasons.

Our objectives were to estimate hunter participation and success in DMU 452 during early archery, early firearm, and regular firearm seasons. This information was used to provide a preliminary comparison of the 1998 and 1999 deer hunting seasons in

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DMU 452. Final harvest estimates for all seasons will be obtained through the 1999 Michigan Deer Harvest Survey.

METHODS

Number of hunters, harvest, and hunting effort were estimated using a stratified random sampling design (Cochran 1977). Hunters were grouped into two strata, based on the region where they resided and type of license they purchased. Deer license buyers that resided in DMU 452 or people that had purchased an antlerless license valid for DMU 452 formed one stratum. The remaining deer license buyers were included in the second stratum. The stratification process categorized hunters into groups with similar hunting success (strata), and then estimates were derived for each group. The final estimates were obtained by combining group estimates so that the influence of each group matched the frequency that its members occurred statewide.

The population of deer license buyers (population size [N] = 827,534) was divided into two strata (63,791 hunters in the DMU 452 stratum and 763,743 in the second stratum) and a random sample was selected from each stratum. The names of 4,647 people were randomly selected from the list of 1999 deer hunting license buyers. The list contained mailing addresses for our sample, but telephone numbers were available for only 281 people (6%). We attempted to locate missing telephone numbers by searching telephone directories available on the Internet (www.peoplesearch.net). Telephone numbers were located for 2,137 of 4,366 people (49%). Thus, from our initial sample of 4,647 people, we obtained telephone numbers for 2,418 people (52%).

Fourteen callers attempted to contact deer hunters by telephone on December 4, 1999, from 10:00 AM –2:00 PM, and 11 people contacted hunters on December 5 from 3:00 - 7:00 PM. The people contacted were asked to report hunting effort and success in DMU 452. Information was obtained from 867 people.

Estimates of hunter effort and harvest were presented ± 95% confidence limit (CL). This CL can be added and subtracted from each estimate to calculate the 95% confidence interval. The confidence interval was a measure of the precision associated with each estimate derived from the telephone survey and implies that the true value calculated for all hunters in DMU 452 would be within this interval 95 times out of 100.

RESULTS

As of December 2, 1999, 59,645 people purchased 81,595 antlerless licenses valid for DMU 452 (Table 1). The number of people buying these antlerless licenses declined 29% from 1998, and the number of licenses sold declined 28%. Moreover, the number of residents of DMU 452 that purchased deer licenses (all license types) declined by 15% since last year. The number of people that hunted deer in DMU 452 was greater in 1999 than 1998 (Table 1).

About 26% of hunters harvested a deer in 1999 during either the early archery or regular firearm seasons, compared to a 38% success rate in 1998 (Figure 1, Table 1). These hunters harvested 25,969 deer (±10,350), a 16% decline from 1998 (Table 2).

Harvest declined for both the archery and firearm seasons, but the greatest decline (34%) was noted for the archery season (Table 2). The ratio of bucks to antlerless deer harvested during the combined archery and firearm seasons was nearly the same in both 1998 and 1999.

Hunters spent 523,564 ± 93,626 days afield ($\bar{x}$ = 5.6 days/hunter) during the archery and regular firearm seasons (Table 2). Hunting effort was similar between years for the regular firearm season. During the early archery season, however, hunting effort declined by 31%.

DISCUSSION

Some public perceived that hunter effort and success has been lower in 1999 than 1998 in DMU 452. The most frequently suggested reasons for this decline included fewer deer, new baiting restrictions, and fewer hunters.

Harvest generally tracks changes in game populations. Deer numbers on October 1, 1999, in DMU 452, were projected at 100,000-110,000 animals, down from the 139,000 deer present on October 1, 1998 (W. Moritz, Mich. Wildl. Bur., unpubl. data). Although hunters took fewer deer in 1999, the projected pre-hunt deer population in 1999 was 21-28% lower than during 1998. Thus, the smaller 1999 harvest was expected based on the reduced size of the pre-hunt deer population.

Beginning in 1999, deer hunters were prohibited from using bait to hunt deer in DMU 452. If baiting restrictions affected hunter participation and harvest, it probably would be most pronounced among archery hunters because they most often use bait (Minnis and Peyton 1994). Indeed, this survey indicated that harvest declined for both the archery and firearm seasons, and the greatest decline (34%) was noted for the archery season.

Although hunter numbers did appear to increase between 1998 and 1999, this may be an artifact of small sample sizes. More likely, hunter numbers were about the same or lower than last year. Other indicators such as license sales suggest fewer hunters. Final license sales figures and hunter participation will be obtained after all deer hunting seasons.

Although fewer antlerless licenses were sold in 1999 than 1998, 56% of the deer taken so far in 1999 have been antlerless deer, compared to 53% for the same period in 1998. Thus, the relative size and composition of the early archery and regular firearm season harvest appears to be similar to 1998 levels. Additional information will be collected as hunting seasons progress to confirm these preliminary findings.

LITERATURE CITED

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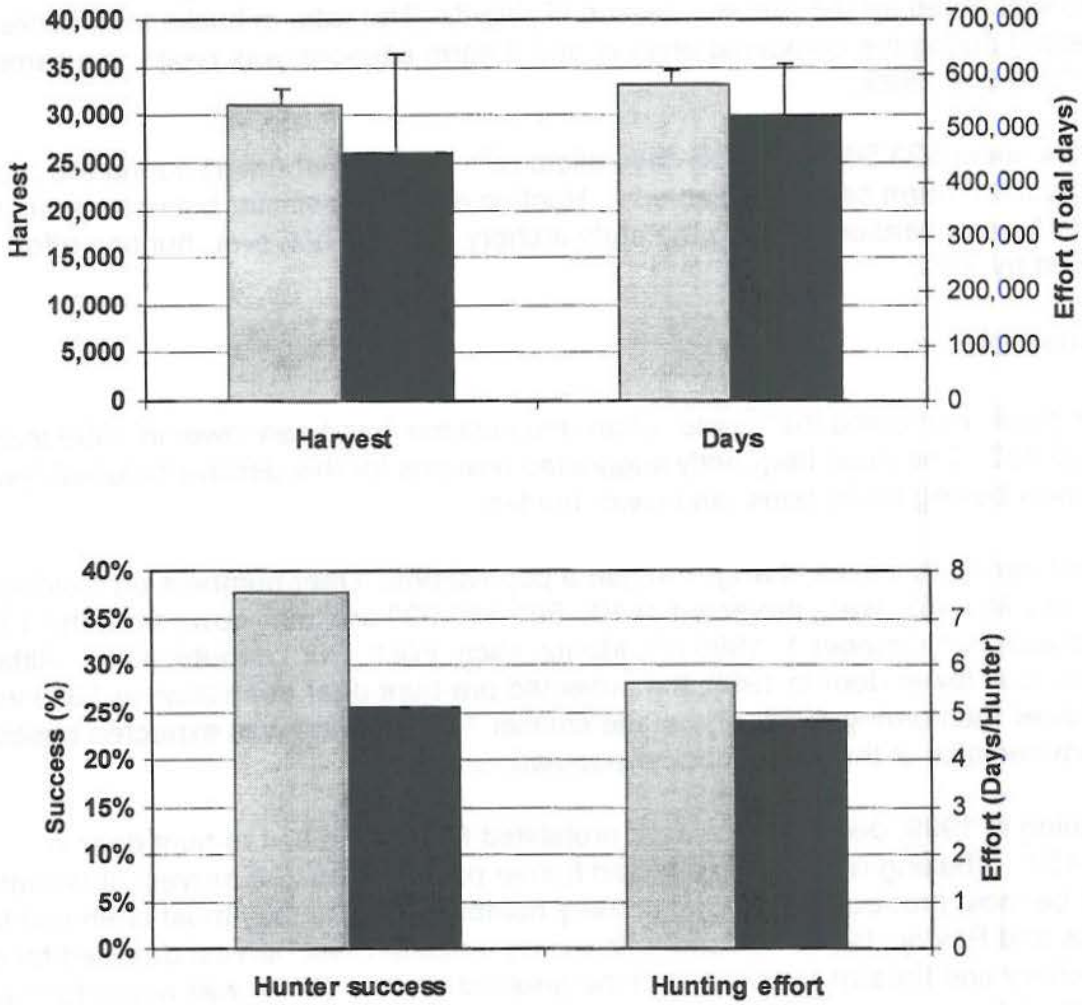

Figure 1. Harvest, days afield, hunting effort, and hunter success during the 1998 (gray bars) and 1999 (black bars) deer hunting seasons (early archery and early firearm combined) in DMU 452. Vertical error bars represent the 95% confidence limit.

Table 1. Number of people purchasing deer hunting licenses and number of licenses sold by December 2 in 1998 and 1999.

	Year		
Category	1998	1999	Change
People purchasing antlerless license for DMU 452	83,574	59,645	-29%
Antlerless licenses sold for DMU 452	113,817	81,595	-28%
Deer hunting license buyers residing in DMU 452	17,831	15,247	-15%
People purchasing deer hunting licenses (statewide)	869,486	827,534	-5%

Table 2. Number of hunters, harvest, hunting success, and hunting efforts during the 1998 and 1999 deer hunting seasons (early archery, early firearm, and regular firearm seasons) in DMU 452.[a]

										Harvest			
Season	Year	Hunters	Annual change (%)	Success-ful hunters (%)	Success-ful hunters (No.)	Annual change (%)	Effort per hunter (days)	Total effort (days)	Annual change (%)	Bucks	Antlerless	Total	Annual change (%)
Early archery	1998	27,451		27%	7,502		7.7	210,328		2,602	4,931	7,533	
	1999	29,343	7%	17%	4,871	-35%	4.9	144,094	-31%	743	4,234	4,977	-34%
Regular firearm	1998	67,062		35%	23,435		5.6	372,296		12,094	11,463	23,557	
	1999	79,076	18%	25%	19,825	-15%	4.8	379,470	2%	13,138	7,854	20,992	-11%
Early archery and regular firearm	1998	74,880		38%	28,240		7.8	582,624		14,696	16,394	31,090	
	1999	93,358	25%	26%	23,847	-16%	5.6	523,564	-10%	13,881	12,088	25,969	-16%
Early firearm	1998	na		na	na		na	na		na		na	
	1999	15,473	na	36%	5,508	na	3.2	50,241	na	0	5,508	5,508	na
Early archery, regular firearm, and early firearm	1998	na		na	na		na	na		na	na	na	
	1999	98,972	na	29%	28,717	na	5.8	573,805	na	13,881	17,596	31,477	na

na Not available.

[a]All 1999 estimates were preliminary. Additional licenses will be purchased before all deer hunting seasons end.