

MICHIGAN DEPARTMENT OF CONSERVATION
Game Division

Report No. 2225
May 26, 1959

Estimates of 1958 Archery and Camp Deer Kill
from Mail Surveys

This report covers results of the post-card surveys for Archery and Camp Deer kill in the 1958 season. It is intended to supplement Game Division Report No. 2221 which gives estimates of the 1958 gun deer kill and Report No. 2222 which covers the 1958 special seasons.

The estimates given below may be changed slightly when final 1958 license sale figures are available (in July, 1959).

Results of the 1952 to 1957 archery and camp deer kill surveys are included for comparison.

<u>Archery license sales and hunters</u>	<u>1952</u>	<u>1953</u>	<u>1954</u>	<u>1955</u>	<u>1956</u>	<u>1957</u>	<u>1958</u>
Resident and non- resident archery license sales	29,322	31,266	33,462	37,965	42,368	37,440	39,650
Estimated archery hunters	28,530	30,320	32,920	37,200	41,890	36,630	38,920
<u>Archery kill estimates</u>							
Region I	160	260	510	550	500	405	610
Region II	1,630	1,520	1,280	1,660	1,850	1,335	1,910
Region III	50	40	20	100	80	40	80
	<u>1,840</u>	<u>1,820</u>	<u>1,810</u>	<u>2,310</u>	<u>2,430</u>	<u>1,780</u>	<u>2,600</u>
<u>Archery hunter success (state-wide)</u>	6.4%	6.0%	5.5%	6.2%	5.8%	4.8%	6.7%
<u>Archery survey size and returns</u>							
Cards sent	3,100	1,788	1,877	2,038	2,216	1,961	2,042
Cards returned	2,881	1,651	1,751	1,941	2,043	1,852	1,950
Non-deliverable	106	77	56	50	57	48	38
Non-response	113	60	70	47	116	61	54
Percent return of delivered cards	96.2%	96.5%	96.2%	97.6%	94.6%	97.5%	97.3%
<u>Camp kill data</u>							
Camp kill estimates (state-wide)	470	550	480	400	440	170	170
Camp permit sales	1,399	1,042	1,045	864	908	370	330

Average losses (26 per section) for the highest stratum in the northern Lower Peninsula were nearly the same as those found on two large hunting clubs, Turtle Lake and Mid-Forest Lodge, by crews of club members, University of Michigan wildlife students, and biologists from the American Box Board Company. Here searchers found dead deer at the rate of 25 and 21 per square mile, respectively.

Causes of death

Estimated losses are listed in six classes below. Obviously deer in the two unknown categories really belong in one of the other four. A discussion of the most likely causes of death follows the tabular summary. Comparisons with earlier surveys are also shown.

<u>Upper Peninsula</u>		<u>1956</u>	<u>1959</u>
Starved		19,400	3,000
Shot		7,300	6,600
Dog or predator kills		300	1,200
Accidents and disease		600	1,200
Unknown, not starved		22,000	6,500
Cause entirely unknown		<u>24,400</u>	<u>16,700</u>
		74,000	35,200
 <u>Lower Peninsula</u>	 <u>1955</u>	 <u>1956</u>	 <u>1959</u>
Starved	5,400	16,600	13,100
Shot	14,300	5,700	6,500
Dog or predator kills	1,800	3,400	650
Accidents and disease	720	1,000	4,050
Unknown, not starved	10,300	14,900	8,000
Cause entirely unknown	<u>0</u>	<u>0</u>	<u>1,600</u>
	32,520	41,600	33,900

Starvation Losses

We are quite certain that deer classed as "starved" died from malnutrition. Those classed as "unknown, not starved", did not show evidence of starvation. The amount of fat in the body cavity and bone marrow provides conclusive evidence of the level of nutrition and permits accurate separation of the two classes. About 90 per cent of the starved deer were fawns.

Cause Unknown

Many of the "cause entirely unknown" deer also probably starved, particularly in the Upper Peninsula where the bulk of these occurred. In most cases the carcasses had been torn apart and scattered by scavengers and the leg bones chewed and broken to the point where fat determination tests could not be made. Fawns made up a sizeable portion of the deer that could be aged. The lack of body fat and small amount of flesh on starved fawns allows them to be readily torn apart.

Shot

The figures for "shot" deer include only those deer where there was direct evidence of a bullet wound. Some of these could have resulted from crippling loss during the deer seasons. Only about 12 percent of the deer in the shot category were adult bucks. It seems likely a large part of the group of shot deer are the result of the "shoot first, look afterward" hunter.

There was good circumstantial evidence that many of the deer in the "unknown, not starved," class were also shot in the fall. About half of both these and the "shot" deer were adults.

Dog and Predator Kills

The estimated totals for dog and predator kills are no doubt lower than actual losses. Many of the dead deer placed in both unknown classes had been fed upon and torn apart by predators and scavengers so that the actual cause of death was obliterated. Fawns weakened by malnutrition or hampered by deep snow are easy prey for deer-running dogs.

Accidents and Disease

These include deer killed by cars, fences, and falls, and those judged to have died from various maladies. There was no known outbreak of the hemorrhagic disease which killed sizeable numbers of deer in the summer and fall of 1955.

Except for those due to disease, which evidently causes only a few deaths most years, losses in this category are easily recognized by the presence of broken bones and bloody areas beneath the skin. There is little evidence that many of the unknown deer belong here.

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