

MICHIGAN DEPARTMENT OF CONSERVATION  
Game Division

Report No. 2016  
July 1, 1954

The 1953 Pheasant Post Card Poll

Summary

1. A post card poll of 3,000 small game licensees yielded a response of 97.7 percent after 6 mailings.
2. Pheasant kill averaged 2.06 birds per pheasant hunter in 1952 and 2.32 in 1953.
3. Estimates of statewide kill (with limits of error at the 95 percent level) are:

1952 --	897,940	(838,260 - 957,620)
1953 --	1,226,990	(1,146,620 - 1,307,360)
4. Hunter success rate decreased only slightly as non-response was repeatedly polled.
5. Sixty-six percent of licensees hunted pheasants in 1952 and seventy-five percent in 1953. Twenty percent of 1952 licensees did not buy 1953 licenses.
6. In 1953 pheasant hunters took .65 birds per hunter-day and averaged 5.78 gun-hours per bird bagged. Pheasant hunts averaged 3.72 gun-hours in length, and hunters spent 3.46 days afield during the 22-day season. It took 4.1 hours to bag a pheasant on opening day and 8.4 hours during the final week of the season.
7. Opening day kill amounted to 31 percent of the season total; 76 percent of the total kill was taken in the first week of the season, 15 percent in the second week, and 9 percent in the final week.

Introduction

A post card poll of pheasant hunters was conducted in 1953. The objectives of the survey were to obtain a more accurate estimate of pheasant kill than heretofore available and to determine the daily distribution of pheasant hunting effort and kill throughout the season. The latter information, prior to this survey, had never been obtained on a statewide scale, and a need for it had arisen in connection with a current study of hunting season age ratios. The survey was designed and conducted along lines similar to the 1952 post card poll of deer hunters, and as with that survey, the method of sampling and the questionnaire procedure were approved by the University of Michigan Survey Research Center.

## Procedure

### The Sample

A random sample of 3,000 names was drawn from the 1952 small game license records. This sample, which included 1 hunter in 220, or 0.45 percent, was estimated to be sufficient to yield 5 percent accuracy on a total kill estimate. By taking the sample from the 1952 licensees it was possible to complete the mailing list and mail the initial cards before the start of the 1953 season. This alerted the selectees as to the information sought and permitted them, if they so desired, to use the questionnaire forms for keeping records of their hunting as the season progressed. The alternative, waiting until 1953 license lists were reasonably complete, would have meant delaying the initial mailing until some time after the close of the 1953 season. It was felt that this would not be desirable since questions were to be asked regarding each day hunted during the 22-day season, and it might be unreasonable to expect people to remember such details with accuracy.

The principal objection to sampling the previous year's licensees was that the annual turnover was not known. It was estimated to be not more than 25 percent, however, and the sample size was adjusted accordingly. Results of the survey have shown that actually about 20 percent of the 1952 licensees did not purchase 1953 licenses. A source of error which could not be estimated or compensated, and which remains as the only objection to the method, is that new licensees in 1953 were not included in the sample. Whether or not the success of these hunters differed appreciably from that of the others is not known. It was assumed that this error would not be great and that it could be ignored in favor of the advantage of pre-season contact of the sample.

The files of licensees consisted of some 38,000 record cards, the license stubs returned by dealers, averaging about 18 names and addresses per card. The random sample of 3,000 names was obtained by taking one name from every 13th card in the files, the position on the card of the name selected being rotated consecutively from top to bottom. Names and addresses were typed on ditto master stencils, 33 to an 8 1/2 x 11 inch sheet. Each name was assigned a serial number which was typed below and to the right of the address. Five copies of each stencil were then printed on gummed address label sheets, divided by perforations into 33 1 x 2 3/4 inch labels. This yielded five address labels for each name in the sample. One label for each name was then affixed to 3 1/4 x 7 1/2 inch Keysort cards which served as the master file for the survey. The remaining four labels for each name were retained for addressing the series of mailings. As questionnaires were returned after each mailing, information was punched on the Keysort cards of the master file, and the remaining address labels of the individuals responding were voided.

### The Questionnaire Form

Double post cards were used for the questionnaire in all but the last two mailings. The questionnaire form (Fig. 1) was printed on the reply half which bore the Game Division address. On the message half of the double card were printed instructions appropriate to the various mailings. The name and address labels of the licensees were pasted on the address side of this card.

The first mailing, which was sent to the entire sample on October 16, 1953 shortly before the pheasant season, consisted of the questionnaire form with a brief message of explanation and instructions. This message is shown at the bottom of Fig. 1. On November 12, immediately following the season, a second mailing of forms and instructions was sent out to the entire sample, except for those names which had been returned as undeliverable. The message for this mailing is shown at the top of Fig. 2. Subsequent mailings were sent to non-respondents on December 17, February 3, March 24, and April 21. These have been designated respectively as, mailings 3, 4, 5, and 6. Mailings 3 and 4 were double post cards with the questionnaire form and reminder messages (Fig. 2, bottom, and 3, top). Mailings 5 and 6 consisted of a much simplified questionnaire printed on a single post card (Fig. 3, bottom) and enclosed with letters reminding the non-respondents and reemphasizing the need for complete response.

### Returns from the Mailings

The total returns from the six mailings are summarized in Table 1. Non-deliverables amounted to 259, or 8.6 percent of the total sample of 3,000. This fairly high proportion of improper addresses was apparently due largely to illegible handwriting on the license records. Some attempts were made to correct them by going back to the records to try for a better interpretation, but they were mostly unsuccessful. Of the 2,741 licensees contacted, returns were eventually received from 2,678, or 97.7 percent.

Table 2 presents a summary of the returns from each mailing, and the cumulative percent returns are plotted on rectangular coordinates in Fig. 4.

It will be noted that mailings 1 and 2 have been grouped together here and in the following presentation of data. The reason for not distinguishing between the two is that the second card served only as a follow-up or replacement to the first and was sent to the entire sample. The two are considered together as the initial contact.

### Information Obtained

The results from the total returns are summarized in Table 3. Included also are computed standard errors for the sample values used in deriving kill estimates. Tables 5 and 6 present the kill and hunter success data for each of the mailings, and Table 4 lists the cumulative results as an increasing portion of the sample was heard from. This data is also plotted on a graph in Fig. 5. Fig. 6 is a graph of the kill frequency distribution for both years; and in Fig. 7, 1953 hunting effort and kill are plotted for each day of the season. The county distribution of kill and hunting effort requires further analysis and is not included in this report. Data on the 1952 and 1953 seasons is discussed briefly below.

#### 1952 Season

About two-thirds (65.7 percent) of the 1952 small game licensees reported hunting pheasants. The success rate was 2.06 pheasants killed per pheasant hunter, or 1.35 per licensee.

1953 Season

Hunter Success. Three-quarters (75.2 percent) of the 1953 licensees hunted pheasants and they bagged an average of 2.32 birds each. The kill per licensee was 1.74. Hunters averaged .65 pheasants per day and 5.78 gun-hours per pheasant killed.

Hunter success decreased with each of the mailings, as shown in Table 5. The change was not great, however, and the gradual decline in cumulative success (Table 4 and Fig. 5) indicates that non-response may not be so great a problem as supposed. Apparently, neither failure to hunt nor poor success was a primary reason for neglecting to reply to this survey.

Length and Number of Hunts. The average pheasant hunter went afield 3.46 days during the season and hunted 3.72 hours on each trip. Opening day and weekend hunts averaged about four hours, weekdays three.

Kill Frequency Distribution. The plotted frequency distributions in Fig. 6 show a tendency both years for hunters to report their season kill in even numbers. This is definitely more pronounced in the 1952 reports, probably because the questionnaire called for only a season total, whereas the 1953 kill was reported by day of hunt. About one-third of total pheasant hunters were unsuccessful both years, though the proportion in 1952 was somewhat higher than in 1953.

Daily Hunting Pressure and Kill. The graph in Fig. 7 illustrates the data on seasonal distribution of hunting effort and kill. The percentages of total hunter-hours and total pheasant kill are plotted for each day of the season. Opening day accounted for 22 percent of the total season hunter-hours and 31 percent of the total kill. The first week of the season included 66 percent of the hunting effort and 76 percent of the kill; 21 percent of the effort and 15 percent of the kill occurred in the second week; and the last 8 days of the season drew 13 percent of the hunting pressure and 9 percent of the kill. Sixty-five percent of both hunting pressure and kill came on the opening day and weekends. It took 4.1 gun-hours to bag a pheasant on opening day; during the first week of the season the success rate was 5.1 hours per bird, during the second week 7.7, and the final week 8.4. A further analysis of daily distribution will be incorporated in a study of age ratios obtained from the wing-and-foot collection.

Statewide Kill Estimates. Estimates of total state kill have been made for both 1952 and 1953 by applying the values for hunter success and proportion of pheasant hunters, with their computed standard errors, to small game license sales totals. Resulting estimates with their limits of error at the 95 percent level (19 chances in 20 of including true values) are as follows:

	<u>Pheasant Kill</u>	<u>Limits of Error</u>
1952	897,940	838,260 - 957,620
1953	1,226,990	1,146,620 - 1,307,360

The range of error (two standard errors expressed as percent of mean estimate) in 1952 is ± 6.64 percent and in 1953, ± 6.55 percent.

Ralph I. Blouch

Table 1. Final Returns

Total cards sent:	3,000
Non-deliverable:	- 259
Deliverable (total sample):	2,741
Usable returns:	- 2,678
Non-response:	63
Percent response of deliverable sample:	97.7%

Table 2. Mailings and Returns

No.	Date Sent	No. Cards Sent	Returned		Usable Returns	Percent of Total Deliverable	Return Cumulative Percent
			Non-Deliverable	Deliverable			
1	October 16	3,000	160	2,840			
2	November 12	2,840	30	2,810	1,342	47.8	47.8
3	December 17	1,468	23	1,445	517	35.9	67.7
4	February 3	928	26	902	377	41.8	82.7
5	March 24	525	14	511	272	53.3	91.3
6	April 21	239	6	233	170	72.9	97.7
Total		3,000	259	2,741	2,678	97.7	97.7

Table 3. Summary of Results

	1952 Season		1953 Season	
	Number	Percent	Number	Percent
Total sample	3,000		3,000	
Total deliverable	2,741	.9137	2,741	.9137
Did not reply	63	.0210	63	.0210
Usable returns	2,147	.7833	2,678	.9770
Did not buy license			535	.1998
Number of licensees	2,147		2,143	.8002
Did not hunt pheasants	737	.3433	532	.2483
Pheasant hunters	1,410	.6567	1,611	.7517
Hunted but did not report results	89			
Killed no pheasants	509	.3610	483	.2998
Killed pheasants	901	.6390	1,127	.7001
Number pheasants killed	2,901		3,730	
Pheasants killed per licensee	1.35		1.74	
Pheasants killed per pheasant hunter	2.06		2.32	
Pheasants killed per hunter-day			.65	
Hunter-hours per pheasant killed			5.78	
Hunter-hours per hunter-day			3.72	
Hunter days per pheasant-hunter			3.46	

Standard errors computed for purpose of kill estimation:

	Value	S.E.	Value	S.E.
Proportion hunting pheasants	.6567	.01025	.7517	.00933
Kill per pheasant hunter	2.0574	.0603	2.3153	.0446
Kill per licensee	1.3508	.04489	1.7404	.05720

Table 4. Cumulative Results

Mailing	Returns		% Hunting Pheasants in 1952	Pheas. Kill per 1952 Licensee	% Buying 1953 Licenses	% 1953 Hunting Pheas. Licensees	Pheas. Kill per 1953 Licensee	Pheas. Kill per 1953 Hunter
	No.	% of Total Deliverable						
1 & 2	1,342	48.9	66.3	1.37	82.3	76.2	1.817	2.386
3	1,859	67.7	65.7	1.36	81.9	74.9	1.770	2.362
4	2,236	82.7	65.7	1.35	81.6	74.9	1.745	2.329
5	2,508	91.3			80.3	75.3	1.740	2.322
6	2,678	97.7			80.1	75.2	1.740	2.315

Table 5. Results from Each Mailing

1952 Season

Mailing	Usable Returns	Number Pheasant Hunters	Number Pheasants Killed	Pheasants Killed per Licensee	Pheasants Killed per Pheasant Hunter
1 & 2	1,342	891	1,841	1.37	2.07
3	467	297	621	1.33	2.08
4	338	222	439	1.30	1.98
Total	2,147	1,410	2,901	1.35	2.06

Table 6. Results from Each Mailing

1953 Season

Mailing	Returns	No. of 1953 Licensees	No. of 1953 Pheasant Hunters	No. of Pheasants Killed	Pheasants Killed per Licensee	Pheasants Killed per Pheasant Hunter
1 & 2	1,342	1,103	840	2,004	1.82	2.39
3	517	420	301	691	1.64	2.30
4	377	300	225	486	1.62	2.16
5	272	193	145	328	1.70	2.26
6	170	127	100	221	1.74	2.21
Total	2,678	2,143	1,611	3,730	1.74	2.32



Fig. 1  
1953 Pheasant Post Card Poll

1953 PHEASANT SURVEY

Did you hunt pheasants in 1952? Yes  No   
If Yes, how many did you kill? \_\_\_\_\_

Did you buy a small game license in 1953?..... Yes  No

Did you hunt pheasants in 1953? Yes  No   
If Yes, please record for each day you hunted the county, the number of hours, and the number killed.

	DATE	COUNTY OR COUNTIES HUNTED	HOURS HUNTED	COCKS KILLED
OCTOBER	20	T		
	21	W		
	22	T		
	23	F		
	24	S		
	25	S		
	26	M		
	27	T		
	28	W		
	29	T		
	30	F		
31	S			
NOVEMBER	1	S		
	2	M		
	3	T		
	4	W		
	5	T		
	6	F		
	7	S		
	8	S		
	9	M		
	10	T		
	NO.	TOTAL:		

Reply card. Sent in first four mailings.

Lansing, Michigan

Dear Sir:

You have been selected as one of a group of 1952 small game license buyers whom we are contacting this season in regard to pheasant hunting success both this year and last.

In order to obtain accurate information on the distribution of pheasant kill and hunting pressure we must ask for a rather detailed record of your hunting experiences. So, this card is being placed in your hands ahead of the season in the hope that you will use it as a score card for your 1953 ringneck hunting. Please fill it out and return it *IMMEDIATELY* after November 10. If you should lose or mislay this card before the end of the pheasant season, please continue to keep a record of your hunting. We will send you a reminder and another card on November 10.

Even if you do not hunt pheasants or if you did not buy a small game license this year, please fill in the proper spaces and return the card. That information is equally important.

Your cooperation will be greatly appreciated.

Very truly yours,

GAME DIVISION  
Michigan Department of Conservation



Fig. 2  
1953 Pheasant Post Card Poll

Lansing, Michigan

Dear Sir:

This is a reminder to you that we are anxious to have your report on pheasant hunting. If you have already filled out and returned the card we sent you in October, please disregard this one. If you have mislaid it and can remember your pheasant hunting trips, just fill in the attached card and send it to us right away.

If you can't recall when and where you hunted, at least write in your total kill for the season. And remember, if you hunted pheasants and didn't kill any, or if you bought a license but didn't hunt pheasants, or if you didn't even buy a small game license this year, WE STILL NEED TO HEAR FROM YOU. So please answer the questions on the card and send it to us today, before you forget about it.

Many thanks for your assistance.

GAME DIVISION  
Michigan Department of Conservation

Reminder card, second mailing

Lansing 26, Michigan

Dear Sir:

We haven't yet received your pheasant hunting report card. It's probably slipped your mind, so we're sending you this reminder and another card for you to fill in if you have mislaid the others.

As we told you last October, you are one of a sample group of hunters selected to give us a rather detailed account of your pheasant hunting. To get accurate figures on the pheasant season we will have to hear from as near to 100 per cent of the group as possible. So, we will have to keep reminding you until you give us a reply.

Please fill in the attached card and return it to us immediately. If you cannot remember when and where you hunted at least tell us what your total season's kill was. That in itself will be worth while to us.

Many thanks.

GAME DIVISION  
Michigan Department of Conservation

Reminder card, third mailing



Fig. 3  
1953 Pheasant Post Card Poll

1953 PHEASANT SURVEY  
4TH CARD

Lansing 26, Michigan

Dear Sir:

Here's another reminder to you that we must have a reply on this pheasant questionnaire. It is important that we hear from everyone chosen for this survey. We don't like to keep bothering you with these cards, so please answer this one and send it in right away.

If you can't remember your daily score just tell us how many birds you got during the season--write it in the lower right-hand corner of the card. If you didn't hunt pheasants, or if you didn't even buy a license in 1953, remember we need to know that too.

It's easy to let these things slip the mind, so please mail this card now, before it's forgotten again.

Thanks. We appreciate your help.

GAME DIVISION  
Michigan Department of Conservation

Reminder card, fourth mailing

Survey No. \_\_\_\_\_

1953 PHEASANT SURVEY

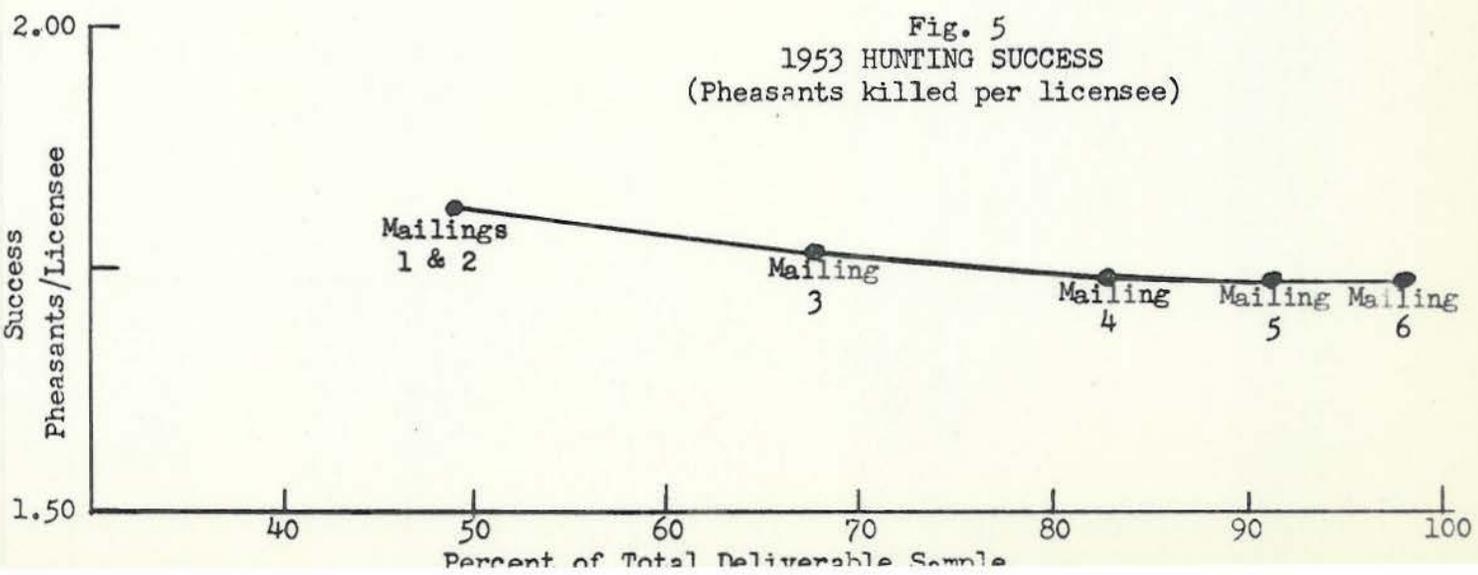
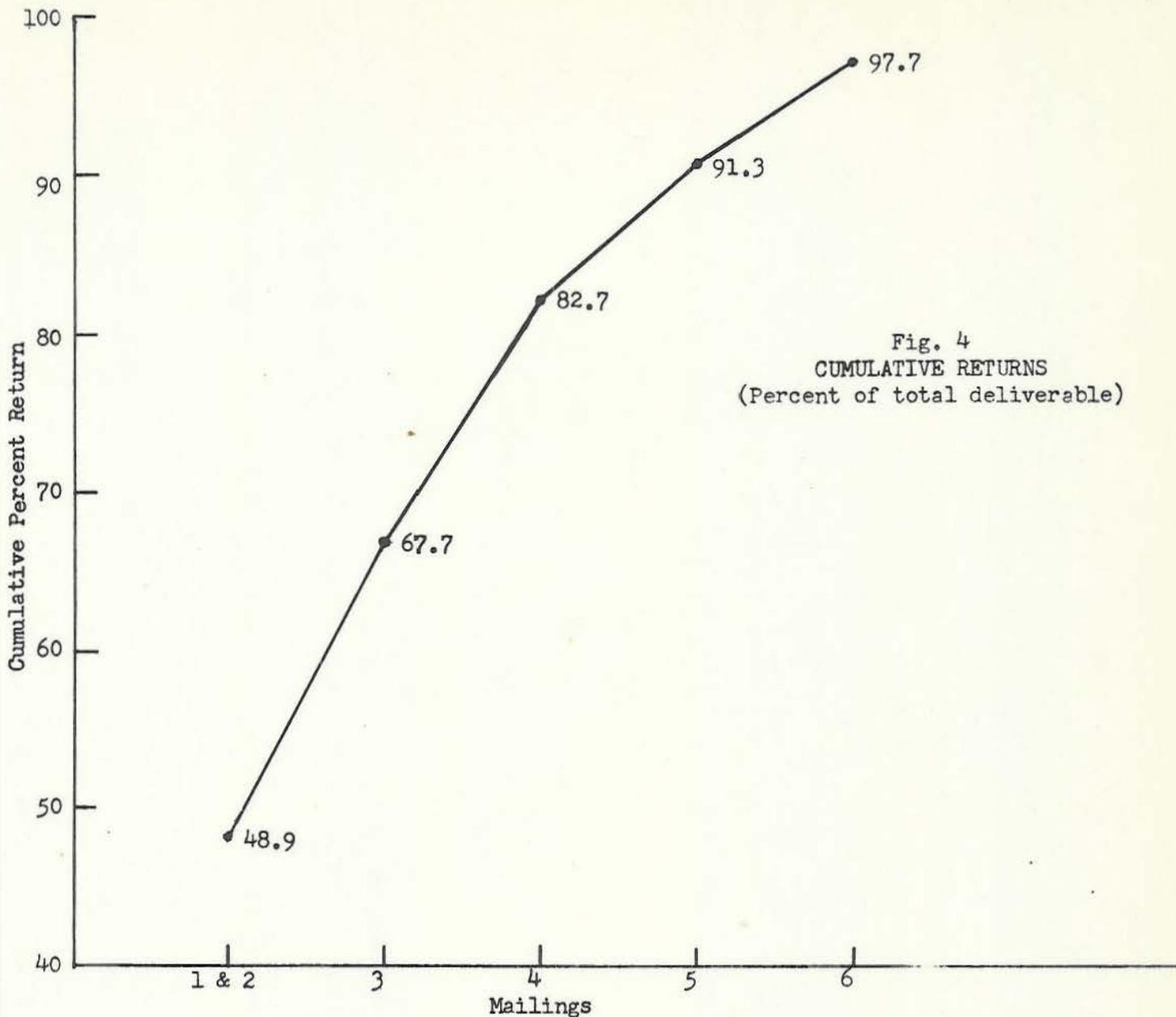
Did you buy a small game license in 1953?...Yes  No

Did you hunt pheasants in 1953?.....Yes  No

If yes, how many pheasants did you kill during the 1953 season?.....

Reply card, enclosed with letter, fifth and sixth mailings.







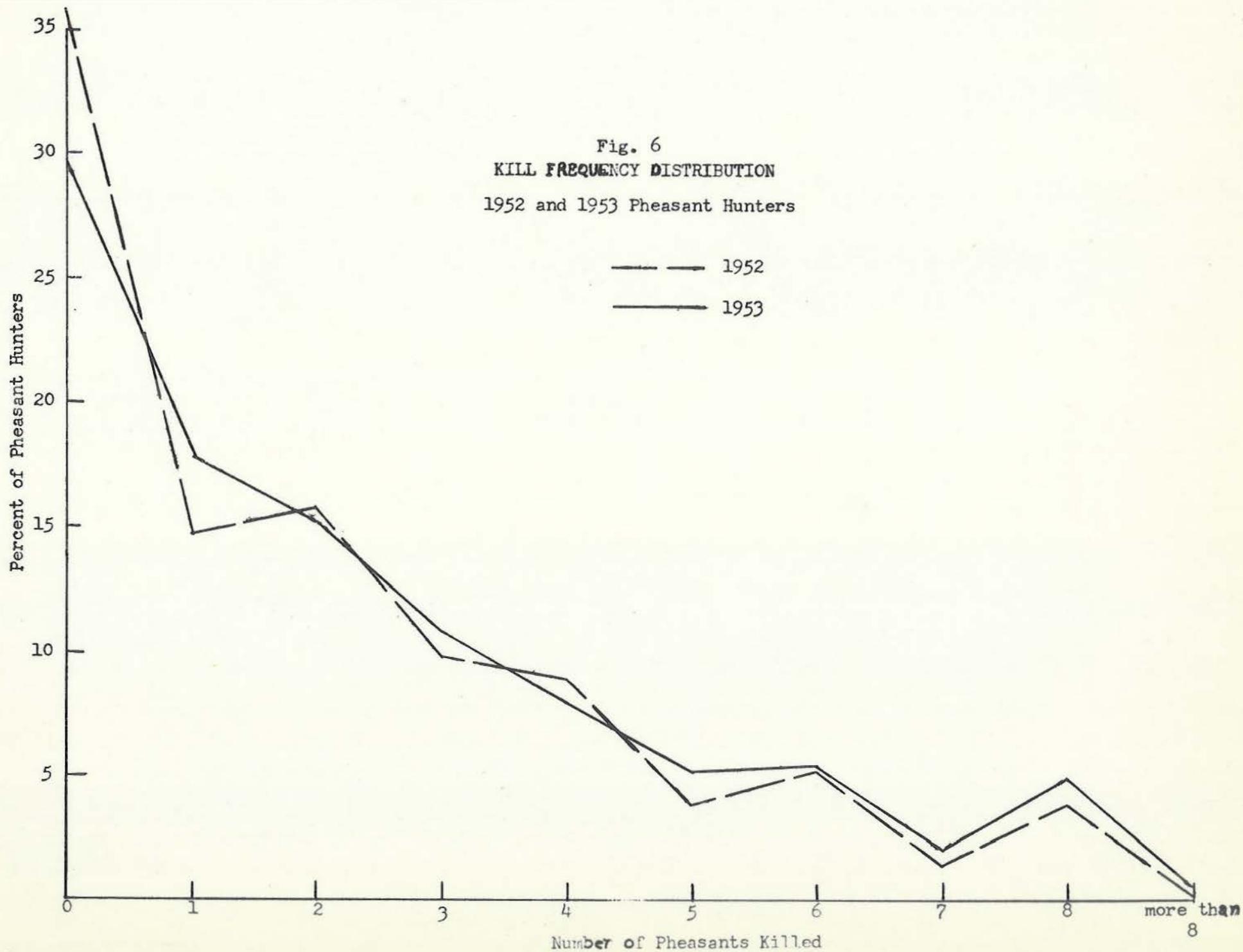




Fig. 7  
1953 DAILY HUNTING PRESSURE AND KILL

