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Gathering of the Hunting Season Data 1956

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Nebraska Game and Parks Commission

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Hamilton, Max & Phil Agee
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Objectives: To obtain information relative to
the harvest of pheasants on the three
study areas at Harvard, Clay Center
and Fairmont.

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JOB COMPLETION REPORT (FINAL)

INVESTIGATION PROJECTS

State of Nebraska

Project No. 28-R

Job No. 1-55

Title of Job Gathering of Hunting Season Data

Objectives: To obtain information relative to the harvest of pheasants on the three study areas at Harvard, Clay Center and Fairmont.

Techniques used: Private ownership of land on the study areas and the many routes of access onto the areas made it impossible for Game Commission personnel to control the hunt directly; hence, this control was placed primarily in the hands of the land operators. Hunters were directed to the land operator for permission to hunt and were requested to report on their success at the end of their hunt.

Signs (see appendix, page 1) were placed at one-fourth mile intervals along all roads in and around the study areas. These signs explained the purpose of the study areas and instructed the hunter to contact the farmer to ask permission to hunt. Mimeographed sheets affixed to these signs informed the hunter of the name of the farmer in charge of each parcel of land and where he should be contacted.

Immediately preceding the hunting season, ^{1/}each cooperating farmer was mailed a supply of envelopes accompanied by a letter explaining their use (appendix, page 2). The farmer was asked to give an envelope to each hunter whom he permitted to hunt on his land. The front of the envelope was printed as a permit and bore the farmer's name and the date. The back served as a questionnaire on which the hunter reported his success at the end of the hunt.

The hunter was asked to deposit in the envelope one wing and one foot from each bird killed and the band and the tag (if present) from each marked bird killed.

The envelopes were left in marked boxes placed on each section corner as convenient receptacles.

The Biologists cruised the study areas regularly to assist hunters and farmers with any questions they might have, to deliver additional envelopes to farmers needing them, and to pick up envelopes deposited in the collection boxes by hunters.

^{1/}Pheasant hunting in 1955 was permitted between noon and sunset from October 22 through November 13. Bag and possession limits were 3 cocks.

Within the week following the season, each farmer was visited to pick up envelopes which he did not issue to hunters and to obtain his reaction concerning hunter cooperation during the season.

Findings:

Effectiveness of envelope system:

The use of the envelope system for collecting hunting season data on the study areas would have been completely effective only if all hunters using the areas had obtained envelopes and cooperated by returning them properly completed. A few hunters trespassed and, of course, had no envelopes. There was also some illegal hunting done along roads which transect the areas both north and south and east and west. Chances of obtaining a 100% return of envelopes were remote for while hunters were required to obtain envelopes from land operators in order to hunt, it was impossible to see that every hunter returned his envelope at the completion of hunting. There was no limited access to the areas, and obtaining sufficient manpower to check all exit roads was impracticable; therefore return of envelopes was voluntary.

Of 709 envelopes issued to hunters during the 1955 season, 332 or 47% were returned; however, data were gathered from a substantially higher portion of hunters than this figure indicates. Landowners were instructed to give each hunter an envelope and in many cases a party of hunters recorded all their data on a single envelope and discarded the rest.

Further information concerning numbers of envelopes is recorded in Table I (appendix, page 5).

Harvest Data:

Birds shot: Information regarding the harvests on the three study areas is recorded in Table II. Data on 199 game farm cocks released on the Harvard Area just prior to the hunting season are included in this table for completeness. Further treatment of these birds will be reserved for a later report.

Table II. Pheasants shot on the Study Areas

Area	Number Pheasants Bagged			No. Pheas. shot but not Retrieved	Total Pheas. Shot
	yg.	old	Total Bagged		
Harvard (Wild)	57	24	81	*16	97
Harvard (Game Farm)	75	--	75	*15	89
Fairmont	27	17	44	27	71
Clay Center	94	42	136	20	156
Totals	253	83	336	78	413

*Known loss of 31 birds on the Harvard Area has been apportioned to the Game Farm and wild categories proportionate to birds bagged in each category.

The kill of hens on the study areas as reported by the hunters was light. One was reported killed on the Harvard Area, 2 on the Fairmont Area and 4 on the Clay Center Area. These were almost certainly incomplete figures, however, since hunters showed a reluctance to record hens killed.

Rate of hunting success: The number of cocks bagged, the total number of gun hours of effort and the number of gun hours required to bag one bird are recorded for each area in Table III.

Table III. Number of cocks bagged, total gun hours and gun hours per cock bagged on the three study areas.

Area	Cocks bagged	Total Gun hours of effort	Av. Gun hours per cock bagged.
Harvard	81	399.6	5.2
Fairmont	44	261.8	6.1
Clay Center	136	347.2	2.8
All areas	261	1008.6	3.8

The numbers of cocks bagged and the gun hours required to bag one cock reflected to some degree the shootable population of each of the three areas. This is based on the assumption that the fall cock populations on the three areas were approximately proportional to the numbers of hens present prior to the past nesting season. These numbers were: Fairmont 148, Harvard 160, Clay Center 571 (reported in completion report for Job No. 5-54).

A comparison of the number of pheasants killed each day with the gun hours expended to harvest them showed very little change (not significant statistically, see appendix, page 4) in the rate of hunter success throughout the season (see figure 2).

Figure 2 also illustrates the drastic decline in hunting pressure following the opening week end. The hunting pressure remained very low except for temporary increases during the week ends.

Age-ratios: The ratios of young cocks to adult cocks killed on the study areas were as follows: 2.4 on the Harvard Area, 2.2 on the Clay Center area and 1.6 on the Fairmont Area.

More detailed data on age-ratios are presented in Table V.

A progressive decrease in young per adult during the season was suspected, but the data were not conclusive because of the small size of the sample.

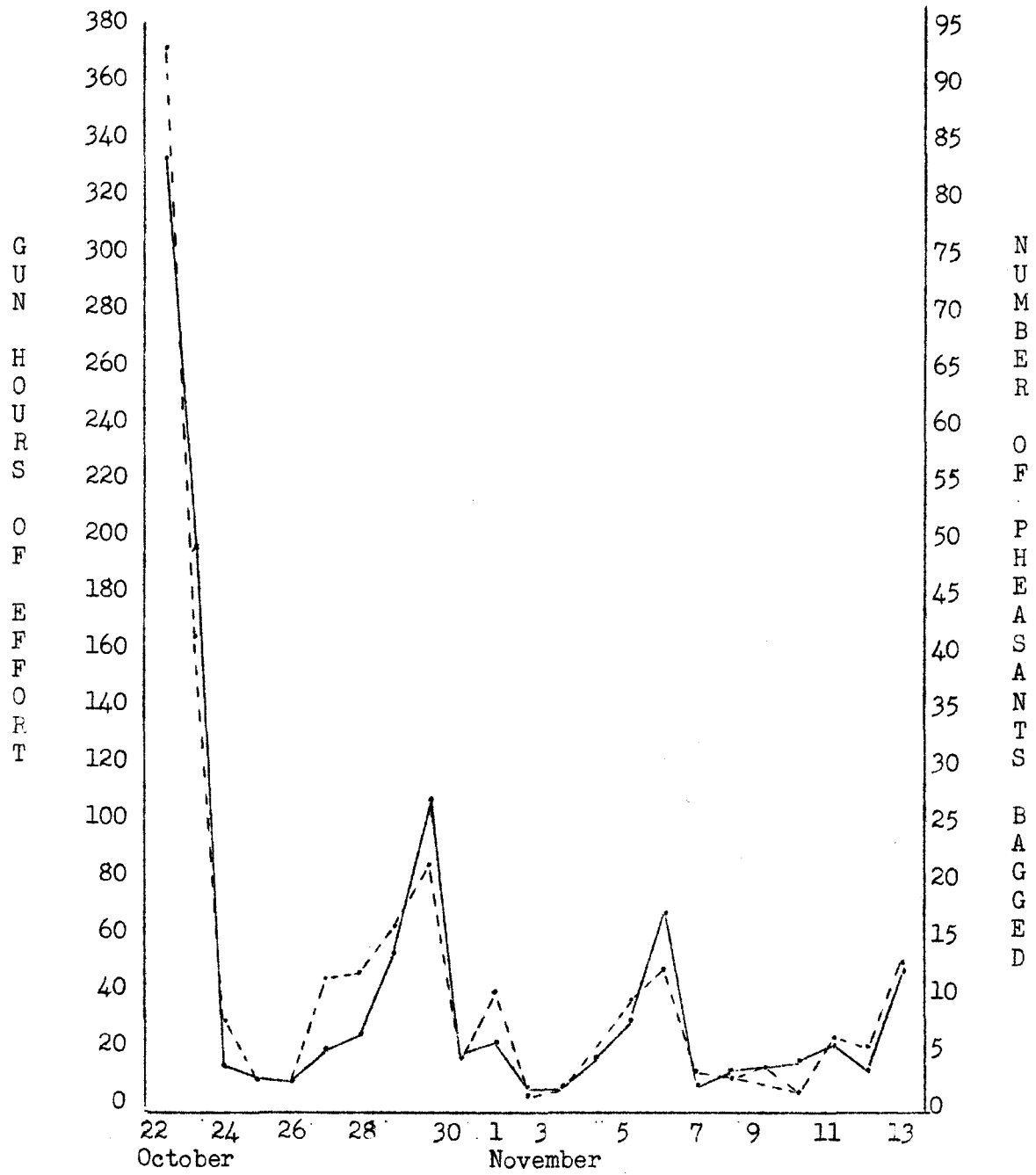


Figure 2. Pheasant kill and gun hours per day on the study areas for the 1955 hunting season.

————— Gun hours of effort
- - - - - Number of pheasants bagged

Table V. Age-ratios of Pheasants bagged on each study area presented by weeks.

	Harvard Area	Fairmont Area	Clay Center Area
1st week	2.33 yg/adult	2.33 yg/adult	2.68 yg./adult
2nd week	(15.00 yg.)*	1.00 yg/adult	1.77 yg./adult
last nine days	.77 yg/adult	1.40 yg/adult	1.37 yg./adult

(*) No adult birds were killed, making calculation of a sex ratio impossible.

Recommendations: The method used in gathering hunting season data was considered highly successful in most respects. It met with the approval of all land operators on the study areas and with most of the hunters contacted in the field. However, some changes are needed regarding the distribution of envelopes to hunters and the recording of information by hunters.

The following recommendations are made: (1) Farmers should be instructed to distribute only one envelope to each party of hunters. If this is done, failure to return an envelope will mean conclusively that data were lost, thereby facilitating evaluation of the data obtained. (2) It was obvious from examination of data on the envelopes that some hunters were confused when recording information; e.g., several seemed to think that when no birds were killed, the envelope should not be filled out; others thought that if no marked birds (banded and/or tagged) were shot, the envelope should be discarded or returned devoid of information. For these reasons, the envelope should be redesigned.

Summary: Of 709 envelopes issued to hunters on the study areas, 47 per cent were returned. However, data were gathered from a larger portion of hunters than this figure indicates.

The numbers of cocks bagged on the study areas were as follows: Harvard Area, 81; Fairmont Area, 44; Clay Center Area, 136. In addition, 75 of 199 game farm cocks released on the Harvard Area just prior to the hunting season, were killed. There were also 31 cocks shot but not retrieved on the Harvard Area, 27 on the Fairmont Area and 20 on the Clay Center Area.

It was thought that the kill of hens reported by hunters, one on the Harvard Area, 2 on the Fairmont Area and 4 on the Clay Center Area, was incomplete since hunters showed a reluctance to record this information.

Gun hours per wild cock bagged on the study areas were as follows: 5.2 on the Harvard Area, 6.1 on the Fairmont Area and 2.8 on the Clay Center Area. These figures reflected to some degree the shootable populations on the areas.

A comparison of the number of pheasants killed each day with the gun hours expended to harvest them showed no statistically significant change throughout the season.

There was a drastic decline in hunting pressure following the opening weekend.

Ratios of young cocks to adult cocks in the bag were as follows: 2.4 on the Harvard Area, 2.2 on the Clay Center Area and 1.6 on the Fairmont Area.

A progressive decrease in young per adult killed during the season was suspected, but data were not conclusive due to the small size of the sample.

Prepared by Max Hamilton, Biologist Approved by Phil Agee
Phil Agee, Biologist Project Leader
Date January 23, 1956

A P P E N D I X

WILDLIFE RESEARCH AREA

HUNTING BY PERMISSION

This land is being used as a site for experimentation and study to provide better pheasant hunting for Nebraskans in the future.

Permission from the farmer must be obtained before hunting on this land. To get this permission follow the instructions attached below.

(Map of study area affixed here showing farm boundaries and the location of each farmers house)	(Instruction sheet affixed here giving the farmers name and directions for locating his house)
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NEBRASKA GAME, FORESTATION & PARKS COMMISSION

Sign used to post study areas

Sign specifications:

Measurements - 16 x 30 inches

Material - Fiber glass

Colors - Black lettering on White background

Map of Study Area and instruction sheet were pasted to the face of the sign.

Appendix Page 2

Pheasant Investigations
Office
Fairmont Air Field
Fairmont, Nebraska

Dear Sir:

As you know we have posted your farm with signs reading "WILDLIFE RESEARCH AREA, Hunting by permission". You probably have noticed the boxes placed on the section corners which are marked, Deposit Pheasant Envelopes. Under separate cover we are sending you a bundle of these envelopes for distribution to hunters.

Since the hunter can obtain an envelope only from you, we will know, if he has an envelope, that he has permission from you to hunt on your farm. If you give a party of hunters permission to hunt, each hunter in the party should receive an envelope. This will entitle them to hunt only for that day, not the entire season. This should do much to eliminate hunting without permission.

The envelopes also provide us with a chance to obtain valuable information by making it convenient for the hunter to give us recovered bands, tags, etc.

We will be in the area during the hunting season. If you need more envelopes or if there is any other way in which we can be of service, please feel free to call on us.

Sincerely,

Max Hamilton and Phil Agee
Biologists

TABLE I. Envelope return on the Study Areas

	HARVARD AREA	FAIRMONT AREA	CLAY CENTER AREA	ALL AREAS COMBINED
Number envelopes Issued to hunters	267	140	302	709
Number envelopes Turned in by hunters	129	74	129	332
Percent returned by hunters	48.3	52.9	42.7	47.0

Table IV. Table of values for linear regression of gun hours per bird throughout the 1955 hunting season.

X	Y	d_{yx}	d_{yx}^2
1	4.0	-.67	.45
2	2.0	-1.53	2.34
3	4.4	-.67	.45
4	3.5	-.43	.18
5	4.9	-.77	.59
6	5.0	-.67	.45
7	3.7	-.83	.69

$\bar{x} = 4$ $b = .2$ $s_{yx} = 1.015$ $s_b = .19$
 $\bar{y} = 3.93$ $a = 3.13$ $s^2_{yx} = 1.03$ $t (5 \text{ d.f.}) = 1.05$

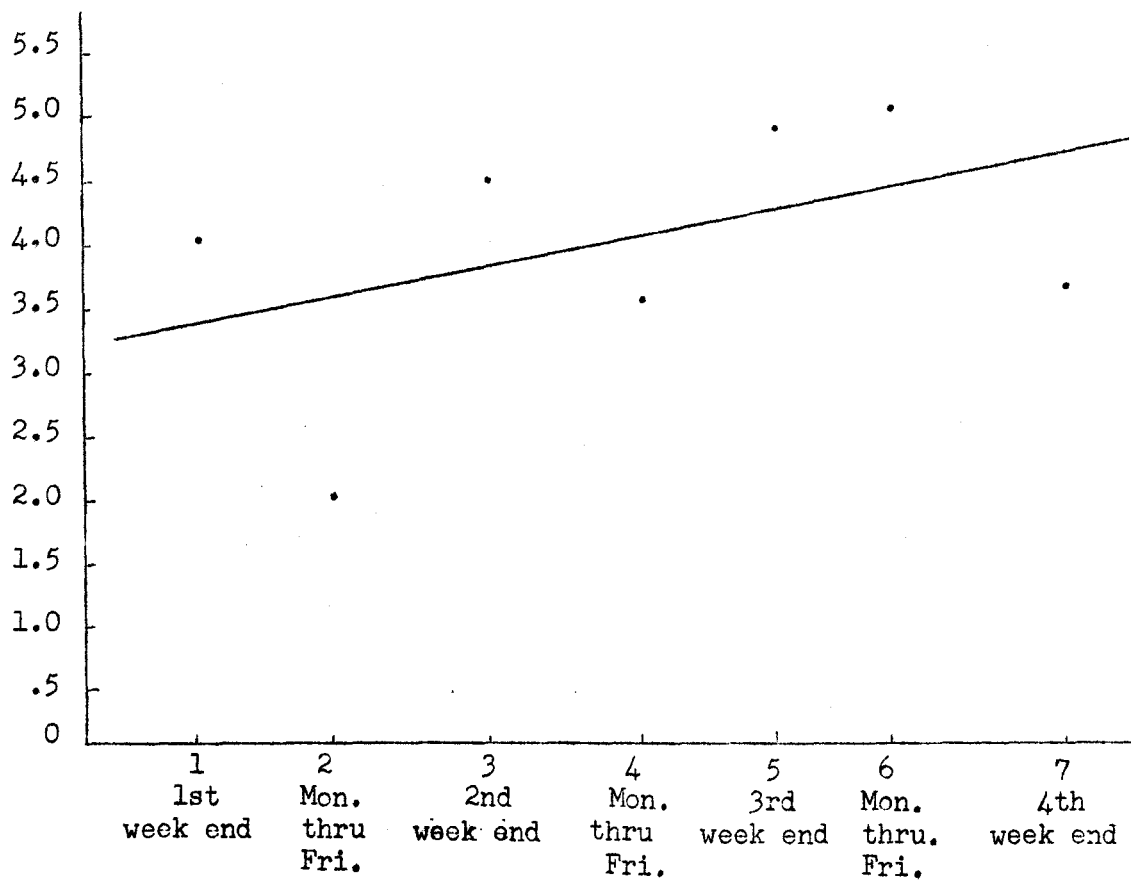


Figure 1. Linear regression of gun hours per bird bagged throughout the 1955 hunting season.