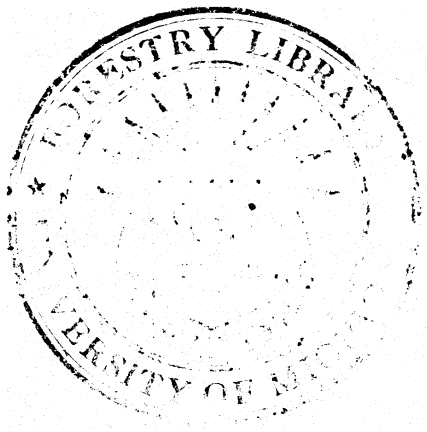
Gordon, Seth (Jr.)
A sampling technique for the determinati on of hunters' activities and the economics thereof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A SAMPLING TECHNIQUE

FOR THE DETERMINATION OF

HUNTERS' ACTIVITIES AND THE ECONOMICS THEREOF

BY

SETH GORDON JR.

Presented in partial fulfillment
of the degree of Master of
Forestry to the School of Forestry
and Conservation, University of
Michigan,
May, 1940

FOREWORD

In the course of this work many people have given helpful advice and encouragement. To them, I should like to express my appreciation and gratitude. Among these should be included my father and Richard Gerstell of the Pennsylvania Game Commission and H. D. Ruhl of the Michigan Department of Conservation. The financial help extended by the School of Forestry and Conservation and the Game Division of the Department of Conservation made it possible to pursue the field work pertaining to this study. To those members of the Faculty who have given freely of their time and lent direction to these efforts many thanks are due. Of these, Dean S. T. Dana and Professors H. M. Wight, S. A. Graham and E. C. O'Roke should be given special mention. Last but not least all of the people who so kindly cooperated in the interviews deserve credit for making the study possible.

Seth Gordon Jr.
Ann Arbor, Mich.
May, 1940

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A SAMPLING TECHNIQUE FOR THE DETERMINATION OF HUNTERS' ACTIVITIES AND THE ECONOMICS THEREOF

* * * * *

INTRODUCTION TO THE PROBLEM

How much is a deer worth? How far does a hunter travel? How much money is spent? How many phoasants are killed? What is the landowner's position as a hunter? The answers to these and other similar questions are annually becoming more important to an effective wildlife administration.

For satisfactory results the approach to these problems should be basically sound and adequately justified. This paper describes a sampling technique for collecting such factual material and applies it to Washtenaw County, Michigan. The method used is an original procedure which it is believed can be applied over larger areas.

OUTLINE OF THE METHOD USED

In developing the sampling method in Washtenaw County only those data were used that are also available for larger areas. The method is essentially this: basic characteristics of the hunter that can be classified in three general groups of information are chosen. These consist of ages, occupations and incomes.

The first is available from even such a small area as a township, a city or village. The other two are available only on a state-wide basis or for groups of states exhibiting broadly similar characteristics. Information concerning hunter age and occupation were obtained from the individual license stubs and kill reports. The question of hunter income and other pertinent data were obtained by personal interview with a representative sample of the hunting population.

The basis for the method used in sampling is in itself simple. The total hunting population is divided into various age groups and each group is sampled in the proportion that it bears to the total hunting population. For example, if the first age group contained 50 hunters and the second 100, twice as many samples are taken in the group having 100 as are taken in the one having only 50.

Justification for the use of a sampling method of this type is found in the widespread acceptance of such national polls as that of Dr. Gallup and in the similar method used by such Federal agencies as the National Resources Board for the determination of the characteristics of various population groups.

In Michigan, because of the method of issuing licenses and handling hunters' reports, age group sampling is insufficient. Ages appear only on the license stubs while occupational information is found only on the hunters' reports.

Because the information wanted in the survey is rather detailed and because it was experimental, no method except the personal interview was seriously considered. Field work was done during the summer of 1939, principally during the month of August. This was the time best available to the interviewer and it was considered desirable to discover if hunters could remember experiences from the previous season at this time. If they could remember accurately, the use of existing personnel in Conservation Departments would be facilitated because the summer period is ordinarily the slack time when organizations could detail men to this work.

The area chosen was Washtenaw County, Michigan principally because the University is located centrally in it and the opportunity for checking results during the winter was thereby facilitated. Additional considerations were that the county stands high comparatively in the number of pheasants

and rabbits killed and the relation between the farmer and hunter is fairly representative of rural areas adjacent to large cities. The 1935 Census of Agriculture shows that the county is about 89% farm land with approximately half the total population resident in urban areas and 25% of the population in a rural non-farming environment. The individuals questioned in this survey were all residents of the county and included not only license holders but also land owners who under Michigan law may hunt legally on the lands upon which they reside without the necessity of purchasing a license. This group referred to as "non-licensed" is kept separate in the summaries since so far as the author is able to determine from the literature, this is the first time that a comparison of licensed and non-licensed hunters has been made. The type of form used, shown on the following page was based on the general information gathered prior to the beginning of the survey.

EXPLANATION OF THE INTERVIEW FORM

Incomes

The division into income groups was based on the economic data which indicated that the average rural income was approximately $350.00 and the average urban income approximately $750.00. Income groups were classified arbitrarily for convenience as follows: $0-500, $501-1000, $1001-1500, $1501-2000, $2001-3000, $3000-. Incomes of above $3,000.00 annually were determined to be relatively few and consequently a differentiation beyond this point was deemed unnecessary. It is realized that in dealing with farmers the annual cash income (as the income groups here are defined to be) may not be a measure of the total income but it is considered satisfactory for comparative purposes.

Ages and Occupations

Ages were divided into groups exactly as they are recorded by the Bureau of Census. The classifications used for occupations follows that used

Economic Survey
Washtenaw County, Michigan

No. _____ Twnsp. _____ Sec. _____ Income Group (1) $0-500. _____
(2) $501-1000 _____
(3) $1001-1500 _____
(4) $1501-2000 _____
(5) $2001-3000 _____
(6) $3001- _____

Name _____ Occup. _____ Age _____

	Shotguns				Rifles				
Gauge	No.	Typ.	Mke.	Age	Calibre	No.	Typ.	Mke.	Age
12									
16									
20									
28									
410									

Hours hunted last season, total _____
For Farm game _____
" Migratory game _____
" Forest game (except large) _____
" Large game _____
" Non-game (crows, etc.) _____
Expended in Trapping _____

Distance traveled, total _____ miles
Driving own car _____
As passenger _____
Length longest trip _____
Number of trips _____
Number of meals _____
Number of nights' lodging _____
Other expenses $ _____

Game Killed

Kind	No.	Kind	No.	Kind	No.
Pheasants	____	Opossum	____	Squirrel, Fox	____
Ruffed Grouse	____	Skunk	____	Gray	____
Prairie Chickens	____	Badger	____	Bear	____
Sharp-tailed Grouse	____	Raccoon	____	Deer	____
Woodcock	____	Mink	____		
Geese	____	Coyote	____	**Muskrats**	-----
Ducks	____	Wolf	____		
Shore Birds	____	Fox	____		
Cottontail Rabbits	____	Bobcat	____		
Snowshoe Hares	____	Weasel	____		

Hunting Dogs, No. ____

Type - Birddog ____
Hound ____
Spaniel ____
Retriever ____
Other ____

Member Hunting Club _____
Sportsman's Organ. _____

Do you hunt every year? _____

Do you hunt mostly on private ____
or public _____ land? _____

by the Department of Conservation, professional, business, clerical, farm, skilled, unskilled and "other". The last group by definition contains students, unemployed and retired individuals and housewives. These divisions are more detailed than those generally used in economic studies but it was felt desirable that they be comparable to the information recorded by the Department of Conservation in order that correlation could be made with the official reports.

Tabulation

The entire form was so devised that International Business Machines could be used for punching and tabulating on code cards. One difficulty is that in its original form the blank provided space for 138 tabulations which would require two cards since the standard code card contains only 88 spaces in its design. In light of the material collected, it is now believed possible to arrange the pertinent information in such a manner that only one code card will be necessary and the revised form is shown on page 29 . The number of tabulation spaces wasn't considered to be a problem because it was originally determined that the Washtenaw County sample should be hand-tabulated in order that the writer might become more familiar with the data as they developed.

Firearms

The detailed information required concerning shotguns and rifles with principal reference to type and make was considered essential in order that the present value of each arm could be determined. Value determinations for this purpose were made on the basis of the original list price of the arm where it could be determined minus depreciation for the number of years use. In practice, the type, make and age of shotguns were recorded on the questionnaire. Reference was then made to catalogs issued by the arms companies involved to determine the original selling price of the arm. Since no standard method of depreciation is currently in use, a method was devised for this study, based on the price of used firearms set by dealers in the county. In

this study, each gun was considered to have depreciated 20% in the first year and to have a residual value in its 31st year of 10% of the original cost. The remaining 70% was depreciated evenly over the intervening 30 years at 2.33% per year. In some cases it was impossible to determine the manufacturer because the gun carried only a trade name. These guns are in no case the more valuable ones and it is felt that the original cost price could be estimated within a few dollars.

Investment Value

The summation or the average value of the arms in each income group makes up the total computed investment. This does not take into consideration the investment value of dogs nor of hunting clothes used solely for that purpose. In a majority of cases hunting clothes as separate entities do not exist. No standard was found which appeared to be satisfactory for computing the investment value of dogs and they are considered in the financial tabulation only as items of expense at the rate of $3.00 per month each to cover food and other upkeep costs.

Expense Items

In computing the number of hours expended in hunting, five classes of effort were recognized. Mileage was divided into two classes, that expended while driving one's own car and that expended while riding as a passenger. In order to arrive at the average cruising radius the length of the longest trip was required. The number of times the individual went hunting without reference to automobile mileage appears separately. Since it was felt that the actual expenditure for meals and night's lodging could not be accurately determined, a standard valuation was assigned at the rate of $.50 per meal and $1.00 per night's lodging. The general term "other expenses" was designed to mean all cash expenditures except the items noted above. This includes shells, guns and dogs purchased during the current year, clothing and all

expenses of hunting trips other than traveling, meals, lodging and dogs upkeep. This item was made inclusive because it was felt that a close estimate would be as accurate as any attempt at an itemization.

Game Kill

The next general consideration was the kind of game bagged. Two squirrel species were included that were not legal game during the 1938 season.

Dog Ownership

Hunting dogs were considered from two standpoints, as an expense item as cited above and also as an adjunct to hunting. Four major types are recognized and one miscellaneous group included.

Other Items

Three supplementary items were recorded as a matter of additional interest but it was felt that the relationships are not sufficiently important to be included in the summary of the tabulations. They are the two major types of affiliations with which sportsmen are concerned, namely hunting clubs (with buildings and properties) and sportsman's organizations or similar meeting groups. The question regarding the periodicity of hunting was invariably answered in the affirmative. The question as to the distribution of time expenditure on private versus public lands was found to follow the type of license, that is in general small game licensees on private lands and large game hunters on public lands.

Field Procedure

In order further to test the accuracy of the basic ideas, the field work was so designed that a random geographical sample would be obtained and this was accomplished by making use of the regular road spacing resulting from the rectangular survey system.

Stops were made at all places where men were seen in the vicinity of the road. If three or four houses were skipped without occupants being visible, stops were made at the next few whether the occupants were apparently there or not. No effort was made to obtain interviews except with licensed hunters but

all individuals who admitted to hunting were interviewed. In a number of instances, unlicensed hunters were reluctant to admit to hunting during the previous season. Approach to all individuals was made on the basis that this was a scientific survey without relation to law enforcement or without an attempt to pry into the private affairs of any one. After completing the survey on the most northernly road in the township, others were taken in order and the north or south roads were followed as appeared to be convenient. Ten of the twenty townships in the county were completely covered in this manner.

Supplementary information obtained was the type of posting in each township divided into three main classes: (1) where public hunting was not permitted, (2) where posted land was used for hunting by virtue of lease for that purpose, (3) where unposted lands were available for public hunting. The township plat map was used and each type of land posting was recorded in color. This served as an additional check upon the extent of a total coverage of the survey in each area. The township populations as reported in the 1930 census were used as a general control for the number of individuals sampled, the more populous areas receiving greater attention. A random sampling method was also used in the various villages and towns but stress was laid here upon individuals known to be hunters, since the question of land ownership wasn't considered to be pertinent in the urban areas.

It was felt that accuracy of the information gathered, was related definitely both to the attitude of the interviewer and to the order in which the questions were asked. The income questions were included as an experiment and were approached initially with some trepidation. In practice, it was always asked at the end of the interview and if the interview happened to be conducted in a place where other individuals could overhear, the man was taken

aside and merely asked to indicate into which group he fell. In this way, friends and neighbors were not subject to any embarrassment by being asked to give personal information audible to others present. It afforded some amusement to the interviewer to find that a number of people were curious about the answers to this question as it applied to their friends. They were always assured that answers were considered to be personal information and not ethically subject to dissemination. There were only two individuals who flatly refused to furnish answers to the income question and only one who refused to answer all questions. In several cases, questions were inadvertently omitted.

Order of Questions

As far as the order of questions is concerned, it was felt that the best results were obtained by recording first the name, age, and occupation, then the type of license. Information concerning arms was then completed. A jump was made from this point to the number of trips taken in pursuit of game. In practice, it was found best to separate this into the number of times the individual went pheasant hunting which was readily answered because of the relative shortness of the pheasant season, then the number of additional trips taken in the course of the rabbit season was entered. If big game hunting was indicated by the purchase of a license, the number of trips taken in pursuit of large game was set down. This was almost always identical with the number of days spent hunting large game. The length of the longest trip and then the approximate mileage was determined. At this point answers were relatively easy because the individual was associating the various trips he took with the distance traveled. It was surprising how readily these estimations were forthcoming. Similarly, the hours hunted in pursuit of various classes of game were relatively easy. Recording was done on a basis of 8 hours per day, except a few individuals who reported hunting large game for as long as 10 hours at one time. It is sufficiently accurate, however, to estimate

large game hunting on the basis of dividing 8 into the total number of hours or the average number of hours to determine the total number of days or average number of days individuals spent in the pursuit of this type of game. Very few pheasant hunters, rabbit hunters or migratory game hunters reported hunting a full 8-hour day. The vast majority spent perhaps 6 hours as a maximum with a number of short trips of 1 to 2 hours duration. Forest game during the 1938 season included ruffed grouse, snowshoe hares, and some fur-bearing species. The non-game time expenditure is important no so much from the standpoint of the number of hours reported but from that of the number of individuals reporting such time expenditure. The trapping time seldom exceeded two hours per day and a few trappers reported having lines out during the full trapping season. Generally an hour or two hours in the morning was sufficient to cover the lines in operation by each individual.

The game kill was the next subject of question and at this point the trend of association was sufficiently established to make the results accurate. The pheasant season limit of 6 birds operated to establish definitely a hunting goal and fix the number killed rather firmly in a hunters' mind. The few individuals who hunted grouse and migratory birds exhibited sufficient interest to establish the fact that their memory was also accurate within reasonable limits. There may be some question about the precise number of rabbits killed because of the high season limit of 50 and because a number of individuals killed rabbits in the course of pheasant hunting merely as an incidental matter. The number of fur-bearing animals reported with the exception of opossums is subject to accurate memory because the hides were sold. Record was made on each form of the average price received per pelt, by the various individuals. Violations were considered to be of sufficient importance to record. In some cases those were openly admitted, in others where violations were suspected, such questions related to the pheasant kill as "All cocks?" or "Did you kill only six?" established the fact of law

violation. No claim is made that the percentage of violation recorded is any measure of the total as it might have occurred but it is interesting from the comparative standpoint.

Accuracy of Answers

On the whole, it is felt that answers were very satisfactory and that the trend of association set up compared favorably to reports made promptly at the end of the hunting season. There is, it would seem, a limit to the period in which hunters are sufficiently interested in the previous season to want to discuss it. As the new season approaches attention is focussed on it and the attendant anticipation. No difficulty of this nature was apparent until the month preceding the new season.

This work was considered to be experimental and in addition to be a public relations job. Consequently when a man had time and the desire to continue a conversation, no effort was made to leave immediately after the questionnaire was completed. As a result several of the interviews lasted for an hour or more, however it is believed that the good-will and interest thus engendered were worth the time expended.

ANALYSIS OF RESULTS

Because of the extensiveness of the material gathered it is impossible to discuss in detail without increasing the paper to an undesirable length. To avoid this, summaries are included for the various age, occupational and income groups in the appendix. It will be the aim here to discuss only the broad aspects and to indicate the method of computation used.

Value determinations have been made only for income groups since this seems to be the most pertinent place for that information. Reports received by the Conservation Department are divided by occupational groups and in those groups mileage and the number of trips are tabulated separately for small and large game.

Incomes and Expenditures

The basis for computing the expenditures as a whole for the survey depends to a large extent upon the results which are not included in the tabulation, that is, the average number of passengers per car, the place of lodging and the place where meals were purchased acted to stabilize costs in the following manner. In checking the number of passengers generally carried on a hunting trip including the driver, a total of 5 was found to be rare, 4 fairly numerous, 2 numerous and 1 rare with the majority reporting 3 per car. Present costs of automobile operation have been generally stabilized at $.05 per mile but in order to simplify the computation and avoid fractional values, summaries were made on the basis of $.02 per passenger mile or a total of $.06 as the average car mile operating cost.

Sample Expense Computation

One-half of all the individuals interviewed were in the $0-500 income group. 50% of these individuals reported a mileage expenditure that averaged 360 miles each. Based on the hunting population as a whole this would mean approximately 300 individuals fall into this group. If the travel habits of this section of the hunting population are similar to the sampled group, 50% or 150 of them would average about 360 miles each, computed on the basis of $.02 per mile for each individual as follows:

360 X 150 X $.02 = $1,080.00 = Total expenses for travel for the group

The average expenditure in the "other expenses" item for the sampled group was $5.00. The total allowance for the entire 300 was computed on this basis:

300 X $5.00 = $1,500.00 = Total other expenses

13% of the individuals sampled reported buying an average of 26 meals each which are arbitrarily valued at $.50 per meal. 13% of the 300 hunters

computed to be in this group is 39 individuals and the total expenditure would be figured as follows:

39 X 26 X $.50 = $507.00 = Total Meal cost.

In the same manner, lodging cost reported by 4% or 12 individuals for an average of 9 nights' lodging each, valued again arbitrarily at $1.00 per night.

12 X 9 X $1.00 = $108.00 = Total lodging expenses

30% of the individuals sampled reported owning a dog or a computed 117 dogs in this income group. Expenses are charged at the rate of $36.00 per year per dog.

117 X $36.00 = $4,212.00 = Total dog cost.

License fees were computed as follows: Small game licenses, 300 at $1.00 each.

300 X $1.00 = $300.00 = Small game license fees.

Large game licenses, 16% of the individuals at $2.25 each.

48 (15% of 300) X $2.25 = $108.00 = Large game license fees.

Trapping licenses 15% of the individuals at $1.00 each.

48 X $1.00 = $48.00 = Trapping license fees.

$1,080.00	Total travel expenses
1,500.00	" other "
507.00	" meal "
108.00	" lodging "
4,212.00	" dog "
300.00	" small game license fees
108.00	" large " " "
48.00	" trapping " "
$7,863.00	Expenses $0-500 income group

Investment in shotguns was found to average $8.00 per individual computed for the 300 hunters as follows:

300 X $8.00 = $2,400.00 = Current investment in shotguns.

If we can assume that depreciation on this investment is at the rate of 3% per year, the annual depreciation charge equals $72.00 which must be added to the annual expenses making a total of $7,935.00

$7,863.00	Expenses as figured above
72.00	Annual depreciation on shotguns
$7,935.00	TOTAL ANNUAL EXPENSE FOR GROUP ON ALL ITEMS

From these determinations it is evident that the average annual expense of each hunter in the lowest income group for all items is $26.45.

Similar computations are included in the appendix for the remaining income groups. All of them are computed in the same manner.

The summary of the current investment and the annual expenses of all groups is as follows:

SUMMARY ANNUAL EXPENSE AND INVESTMENT

	Hunters	Expense	Investment
$0-500 Class	300	$ 7,935	$ 2,400
$501-1000 Class	500	14,875	4,750
$1001-1500 Class	300	12,219	3,700
$1501-2000 Class	200	16,363	3,960
$2001-3000 Class	150	10,605	2,600
$3001- Class	45	4,346	2,990
TOTAL	1495	$66,343	$20,410

This summary is based upon the assumption that the resident licensed hunters in the county spent at a rate equal to that of the sampled individuals. This annual expenditure of approximately $66,000 for 1500 individuals would average more than $40.00 for each licensed hunter in the county. The investment total of approximately $20,000 is for the capital investment in guns per year and unless hunting habits change considerably, this figure should remain relatively static from year to year. These figures should be approached from a standpoint that they are approximations substantiated by a reasonably fair sampling but they should be used only tentatively until larger geographical samples bear out the trends that they show.

Summarization of Results of Hunting

The results of hunting using this method of computation are summarized as follows:

Hours spent in hunting recreation annually
by resident licensed hunters.....94000 hours

Pheasants killed annually by resident
licensed hunters.....3900 pheasants

Rabbits killed annually by resident
licensed hunters.....14000 rabbits

Deer killed annually by resident
licensed hunters.....490 deer

Value of furs trapped by resident
licensed trappers.....$15,400.00

Other items may be subject to summarization but it is felt that they did not appear in sufficiently large numbers in the samples to merit such action. To arrive at the value of the furs trapped a record was made of the amount ordinarily received by typical trappers for various types of pelts. Throughout the county as a whole this averaged about $.90 per muskrat, $8.00 per mink with other species running close to the general market value for pelts in 1938.

Characteristics of Various Age Groups

The number of males of hunting age of Washtenaw County and the proportion of each age class which purchase hunting licenses is shown graphically on the following page.

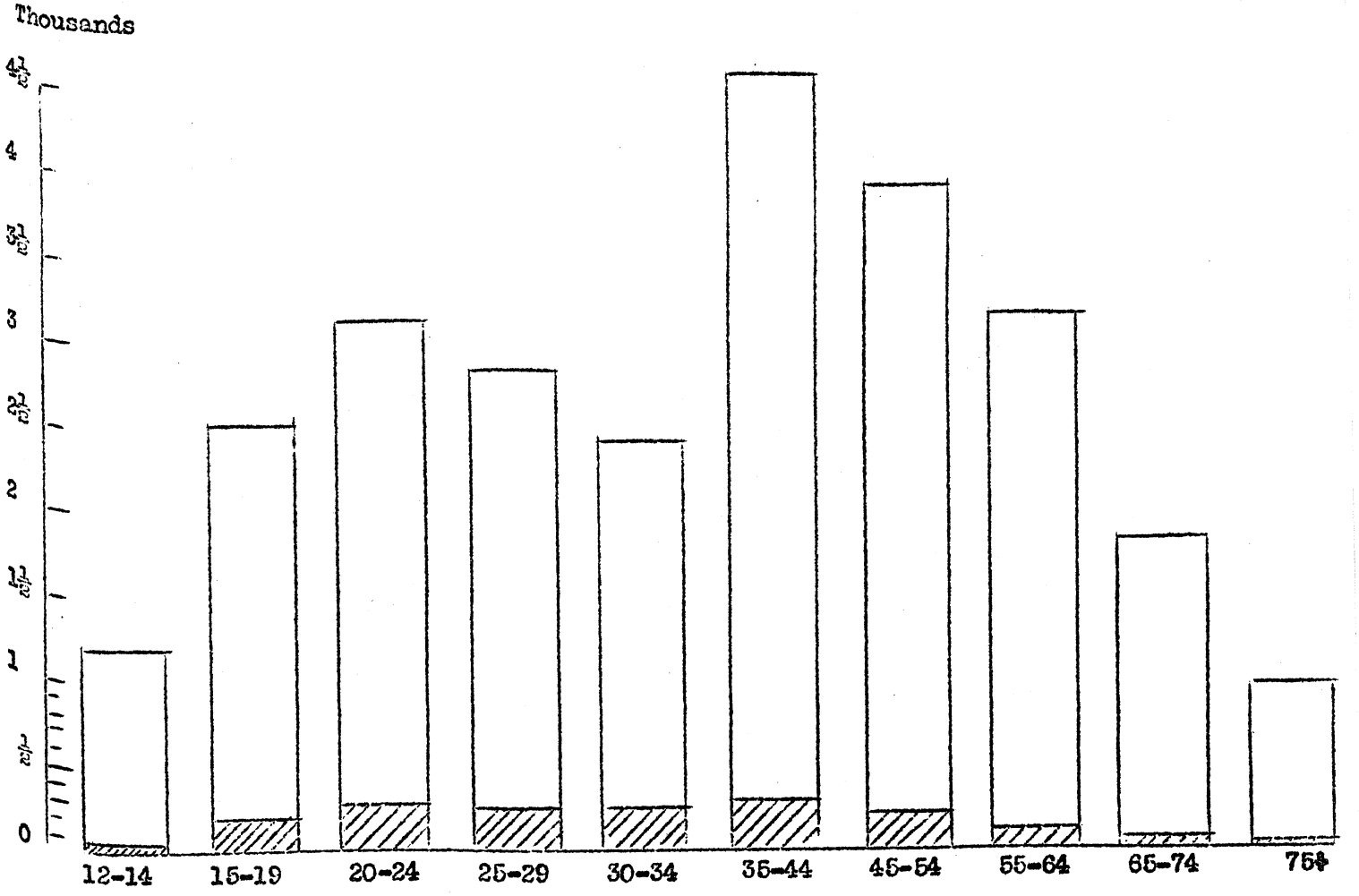
It is interesting that the largest class in the population, that is the ages 35-44, buy the largest number of licenses. This was found to be true in 10 representative counties in Pennsylvania. The remaining age classes however, do not purchase licenses in proportion to the total number of individuals in the class but a preponderance of licensees fall in the younger groups. The actual license issuance is shown on the chart which appears at the top of page 17.

NUMBER OF MALES OF HUNTING AGE

IN

WASHTENAW COUNTY

(Shaded areas represent number in each group purchasing small game licenses)



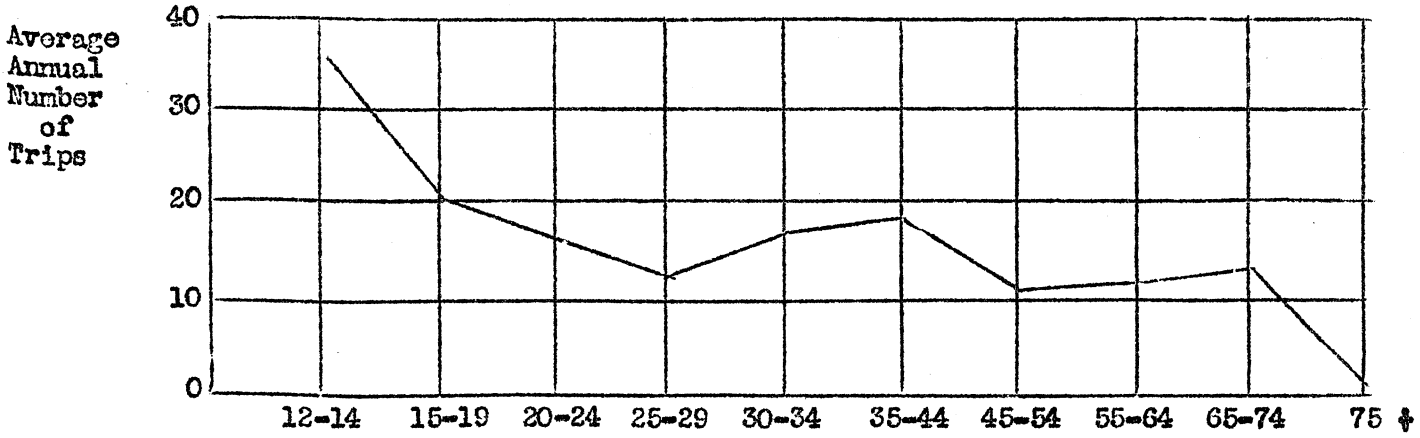
SMALL GAME LICENSES

	12-14	15-19	20-24	25-29	30-34	35-44	45-54	55-64	65-74	75+
No. in Co.	32	192	249	225	226	251	189	125	50	9
% in Sample	1	10	10	17	17	10	22	6	6	.005
% in Class	2	12.5	16	15	15	16	12	8	3	.006

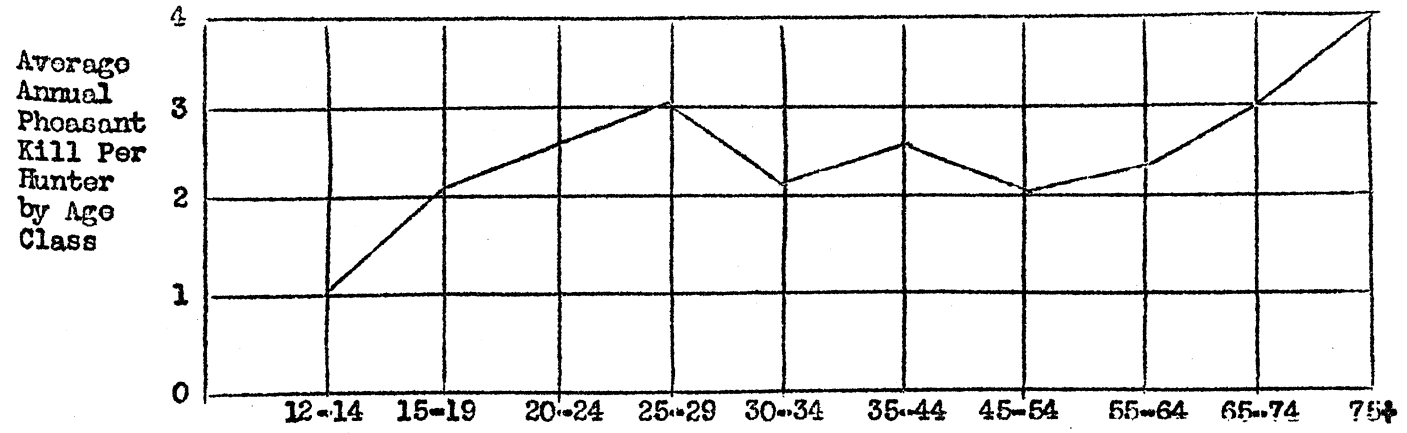
The bottom line shows the percentage of each class which was taken in the survey. This may be compared with the percentage of all hunters in that age class to indicate the completeness of the survey.

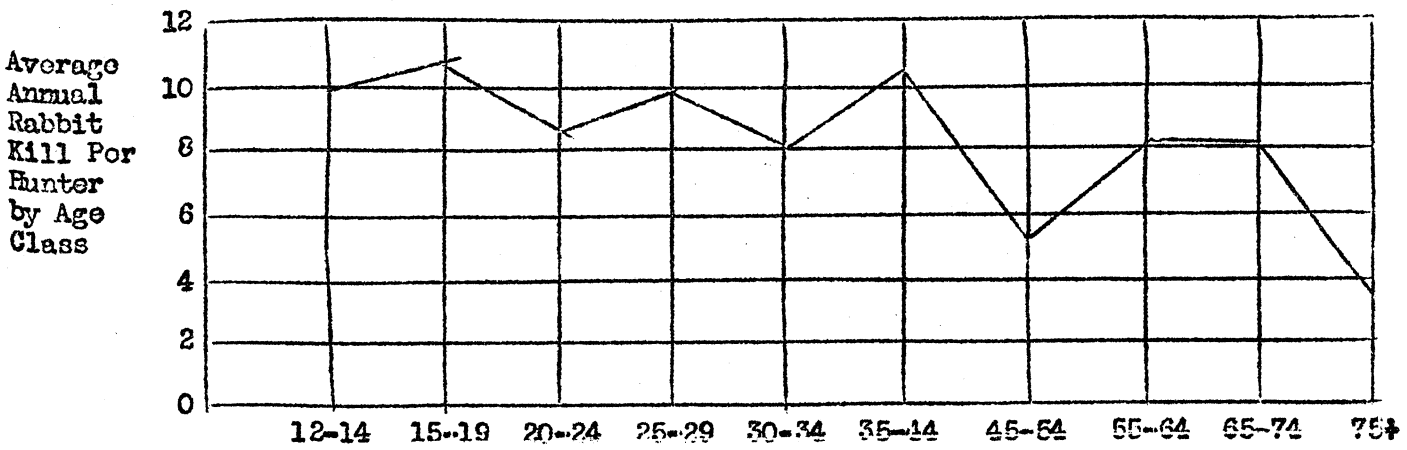
A complete tabulation of information regarding age groups is shown in the appendix on pages C-1 to C-10. Graphic comparison of certain selected figures which are believed to be characteristic of the groups as a whole are as follows:

AVERAGE NUMBER OF TRIPS TAKEN DURING THE 1938 HUNTING SEASON BY AGE CLASSES



It will be noted that with the exception of the first and last group where the number of individuals in the sample was low because of the relatively few individuals in the population, the number of trips taken annually averages around 15. From the tables in the appendix average time expenditure per trip was in the neighborhood of 2 hours. Hunting success measured by the number of pheasants and rabbits bagged annually as an average appear in the following two graphs.





Here again the uniformity is remarkable. On the basis of the computed kill of pheasants, for example, an average for all age classes of 2.6 pheasants per hunter for the 1938 season is demonstrated. The Conservation Department in a 20% sample of all license sales computed that approximately 1600 hunters both county and non-county residents averaged 2.8 pheasants per hunter during this season. The graph showing the average number of rabbits bagged annually per hunter again exhibits the uniformity which seems to characterize the results as a whole. The average kill for all age groups of 9.3 rabbits per individual may be compared with the Conservation Department's estimate that 8.1 were bagged per hunter based on the reports of 1700 hunters without regard to residents in the county. The number of hunters reporting kills of pheasants and rabbits in the sample is about equal despite the fact that almost four times as many rabbits were actually killed as pheasants. Computation of total kills using the method previously described for representative items results as follows:

SUMMARY OF REPRESENTATIVE ITEMS BY AGE GROUPS

	Pheasants	Rabbits	Muskrats
12-14	32	320	670
15-19	303	2035	684
20-24	650	2125	4200
25-29	675	2250	3564
30-34	497	1831	5760
35-44	653	2635	3484
45-54	416	1021	2068
55-64	300	1125	1200
65-74	150	425	880
75 +	36	36	0
	3712	13803	22410

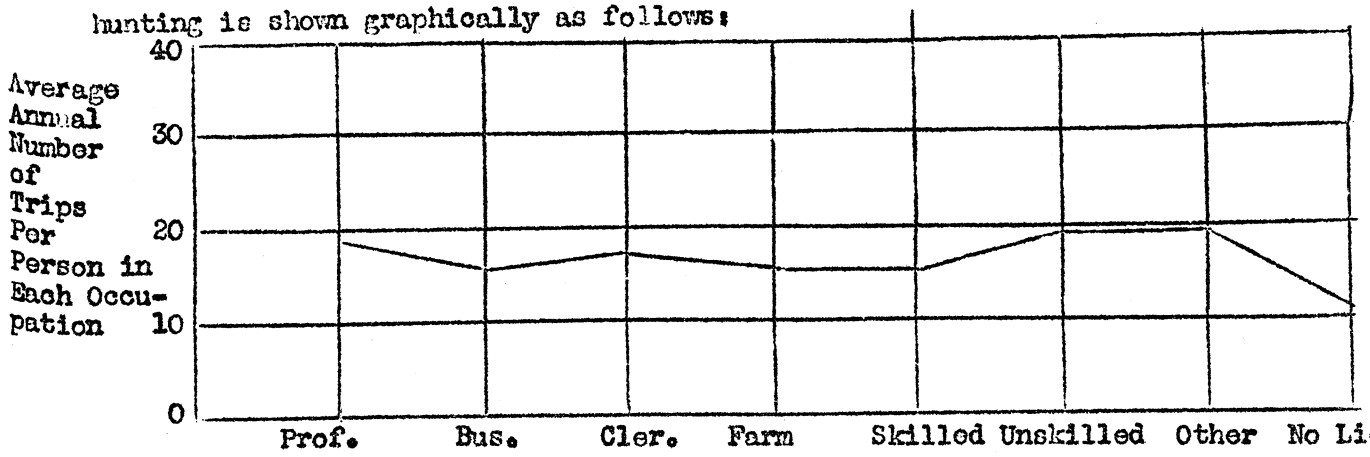
These totals compared to those computed for income groups yield almost the same total of rabbits killed but show a bag of 200 less pheasants which is identical with the computation of the kill by occupational groups. The small differences are not thought to be significant since the approximations that between 3700 and 3900 birds were killed by resident licensed hunters in the county in 1938 is sufficiently accurate for all practical purposes.

SUMMARY OF REPRESENTATIVE ITEMS BY OCCUPATION GROUPS

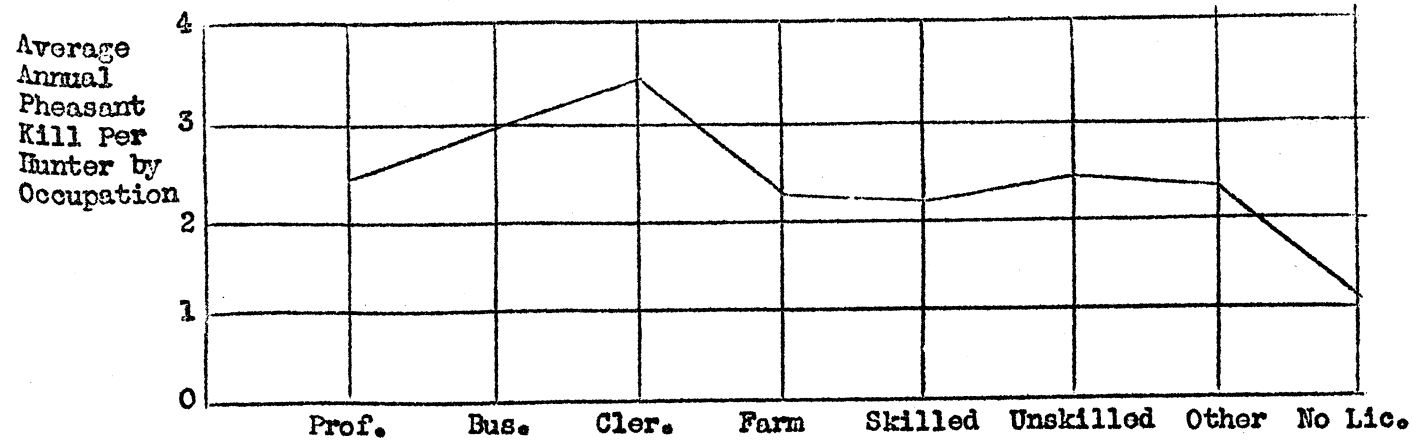
	Pheasants	Rabbits	Deer
Professional	150	600	20
Business	315	640	40
Clerk	315	810	45
Farm	1150	4650	150
Skilled	700	1950	75
Unskilled	790	3150	150
Other	324	1080	40
	3734	12880	520

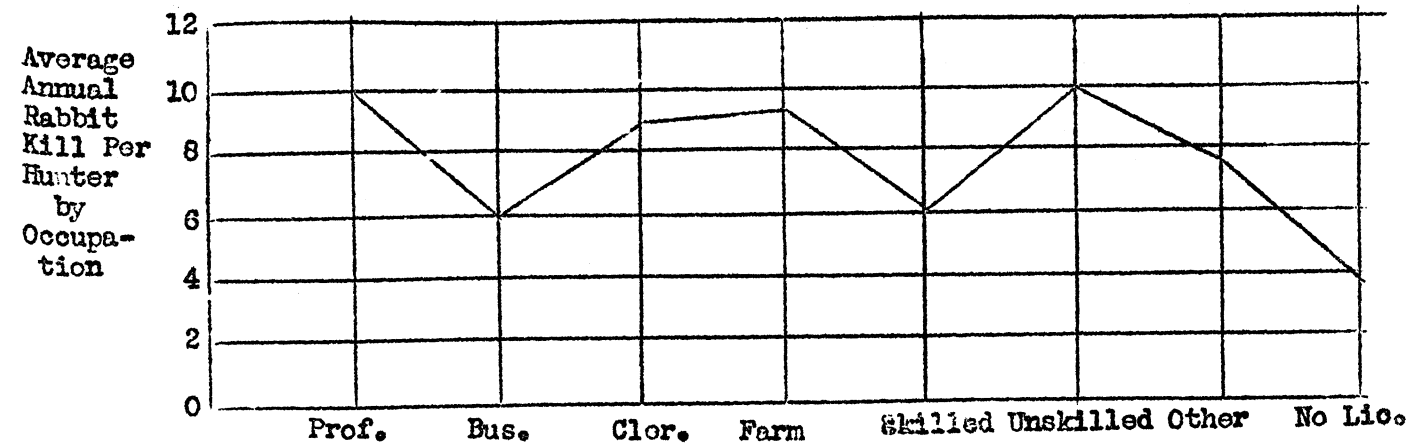
Characteristics of Various Occupational Groups

The number of times individuals in the various occupational classes went hunting is shown graphically as follows:



Here again the uniformity is noteworthy with all classes averaging between 15 and 20 trips during the season. The results based upon the average number of pheasants and rabbits bagged annually are shown in the following two graphs. The no license group included in this and the following two graphs is shown not because it belongs to the occupational classes but for comparison with other material presented.





It should be noted that although success is highest in the clerical group in so far as the number of pheasants is concerned there are only 15 individuals reporting in this class. Similarly although the professional group accounted for a high average number of rabbits per individual, this class was reported by only 10 individuals. The interesting relationship appears in the two laboring groups and in the farm class which account for the highest number of individuals and in which success is relatively high. This means, of course, that the farmer and the wage earner are responsible for a large proportion of the game bagged. It can be seen from the chart on page 20 that the laboring groups, that is the skilled and unskilled classes, killed approximately 5,000 of the 13,000 rabbits which is almost equalled by those killed by farmers. Together this is almost 70% of the total rabbit kill. The same thing is true of the number of pheasants bagged.

Non-licensed Group

In order to determine the proportion of this group in the population a record was made of all farmers questioned in the course of the survey, on the basis of whether they did or did not hunt. In this running count, 236 farmers reported. Of these, 144 did hunt while 92 did not, or a relative percentage distribution of 60% do, 40% do not. of the 144 who hunted approximately 50% hunt legally on their own lands without purchasing a license. In order to determine the total number of such individuals in the county, reference was made to population figures for rural farm populations reported by the 1930 Census. The average bag of the sampled hunters was then applied to that portion of the population computed to be hunters on the basis of the count kept in the course of the survey. Divided into age groups, the numbers in the population and in the sample appear as follows:

RURAL FARM POPULATION (1930)

Age	No.	% in Sample	% in Population
12-14	480	5	8
15-19	700	28	13
20-24	450	12	8
25-29	350	5	6
30-34	400	1	7
35-44	1000	5	19
45-54	900	22	16
55-64	700	15	13
65-74	400	5	7
75 +	150	1	3
	5530		

It will be noted that the actual percentage included in the sample is not uniform for the various groups. However, the hunting experiences as reported on the survey by the 81 hunters in the sample were so uniform that it is believed that the computation is fairly accurate. In order to avoid a too high computation, it was based upon 50% of these individuals although the results of the survey indicated that about 60% did actually hunt. If half of them actually hunted, 2765 would be the total number hunting but of these only about 1900 would be unlicensed.

If these unlicensed individuals exhibted charactoristics similar to those in the sampled group they are computed to bag the following numbers of selected items.

SUMMARY OF HUNTING RESULTS OF FARM GROUP BASED ON SAMPLE

Pheasants	1660	
Rabbits	1550	
Muskrats	5500	(16%)

As stated before, this is the first time that the author has been able to find any reference to this group in comparison with licensed hunters and the fact that they bag approximately 40% as many pheasants, for instance, as all the licensed hunters is considered to be of no little significance to game management.

USES OF THE SURVEY MATERIAL

The results of the survey have been so uniform as to indicate to the author that they are accurate. It is intended, however, to subject them to statistical analysis in a future paper when a larger series of returns of a wider geographical area are available.

On the basis of the data presented the following possibilities are evident. These ideas are not intended to be either complete in themselves or to exhaust the possibilities.

Land Management Programs

First of all, there is a definite feeling engendered in the mind of the author that we are closely approaching the period when master planning for wildlife will attain increasing importance. This means that we will gradually remove such things as artificial restocking or law enforcement as objects of prime consideration in wildlife management and substitute an increasing use of biological, economic, sociological and political techniques that may be applicable to the science of wildlife management. We should, therefore, become cognizant of the desires and attributes of our present stockholders in the wildlife resource. Administration of wildlife in the past decade has evidenced an increasing awareness of the importance of farm game and farm game hunting. To what degree this aspect should be emphasized is a proper subject for determination by survey such as the one described. The reader will note that information is presented in considerable detail for each group in the three main groups previously described, that is by ages, occupations and

incomes. This detail, by no means, represents all of the facts or attributes inherent in the tables. For instance, reference to the occupational class tables shows a division between the average number of trips taken for small game and the average number of trips or days spent in the pursuit of large game. Computation of the average hour expenditure between large game and all other classes is thereby facilitated. For example, the farm occupational group averaged 16 trips computed on the basis of the hour expended for farm game alone and would indicate that slightly less than 2 hours is the average duration of each trip for farm game hunting. Similar computations are possible based on mileage or yield of game per hour per mile, etc. Administratively, information derived in this manner can be used as a basis for the selection of management areas, land purchase and other similar programs.

Gun Pressure Computations

The number of hours necessary to bag a pheasant has achieved popularity as an index of abundance and relative gun pressure on various areas. Without entering into the merits of this particular computation, it should be noted that it is available from the figures gathered in the survey. For example, in the farm occupational group the average farm-game time expenditure is 30 hours per hunter annually while the average pheasant kill for the same period is 2.5 birds or 1 pheasant for every 12 hours of time expended in farm-game hunting. Considering only those who actually bagged pheasants which represents a 70% success in relation to the total number of hunters, the average pheasant kill represents a time expenditure of 9 hours. Similar computations can be carried through the entire series of figures presented.

Budget Justifications

The question of budget justification is becoming increasingly acute, particularly in the states with large hunting populations. The question of the relative importance of many expenditures and justification on a reasonable basis is becoming more necessary. Present information is restricted in most cases to the amount of game killed and may not be a sufficient basis for the adequate determination of relative expenditures. In Washtenaw County, if the

number of individuals reporting kills in the various classes of game is any criterion, about as many hunters kill pheasants as kill rabbits. In the occupational classes, 164 individuals report pheasants bagged while 179 report having killed rabbits.

Valuation

If valuation is desired, the fundamental figures which would form the basis for such computation are inherent in the figures provided. No effort has been made in the course of this report to fix a value for recreational hours. It would be possible to do this arbitrarily determining it at a certain per hour rate. It would also be possible to attain a per hour valuation by dividing the average expenditures by the average number of hours on the theory that recreation is worth what the individual is willing to spend for it. There is considerable apparent merit in using this latter method but the computations should be based upon the respective incomes of the individuals. It is obvious that the total expenditures of all individuals or average expenditures for any group may be computed from the facts gathered by the survey.

Game Kill

There is some question as to the accuracy of the game kill reports submitted by mail to the various conservation departments. Reports may be modified in two directions, first, to minimize the actual number killed in an endeavor to convince conservation officials that there was a dearth of game in that hunter's area, secondly to magnify kills to convince the officials that game on the area was shot out and should be replenished. In very few cases reports submitted to the conservation departments show kills in excess of bag limits. It has also been found that there is reluctance to submit game kill reports when the hunter has actually bagged no game during the hunting season. Some estimation of this number is possible using the method outlines. Probably of foremost importance in the matter of game kill is the question of the distribution of unlicensed hunters who are not required to submit reports of

their activities. That these individuals may be responsible for a large amount of game killed is indicated by the sampling included in the tabulations. Without a computation of these figures, the best laid management plan may obviously fail. It seems that tabulation of game kill reports could be related to age class sampling after the fundamental characteristics of each age class are known. This would eliminate the inherent inaccuracy of assuming that submitted reports are necessarily representative of the hunters as a whole. It also seems possible that a system such as this would eliminate the necessity of attempting to enforce the return of all kill reports with a consequent saving in handling and tabulation costs.

It also appears on the basis of findings in the survey that the game kill estimates of the Department of Conservation in Michigan may be high, although the average kills per hunter may be correct. For example, the Department received reports after the 1938 season from approximately 1600 hunters who reported bagging approximately 8200 pheasants in Washtenaw County. This number includes county and non-county residents. These reports were received in the first 100,000 cards tabulated by the Department for the 1938 season. Since 100,000 reports represented 19.4% of the total licenses sold, there were computed to be 8200 pheasant hunters who hunted in Washtenaw County. The 1600 who actually reported, killed 4,500 birds. From this it was computed that 23,300 birds were killed in the county during the 1938 season. Since the fall sex ratio is reported by reliable sources to be apparently 1 to 1, this would assume a total population of 46,600 birds if all the cocks were killed. In the 20 townships of Washtenaw County there are 720 sections one square mile in area. We can reduce this by at least 20 by eliminating water areas, roads and urban holdings where no hunting is possible and posted areas where no hunting is permitted. On the basis of 47,000 birds without taking into consideration crippling losses or those remaining after the hunting season, this would represent a fall population in 700 sections of at least 67 birds per section. In the county

as a whole, this is believed to be too high an average population. From the reports of reliable observers, it is actually believed to average nearer 40 birds in the fall. Of these, 20 should on the average be cocks. If 18 of these cock birds were killed as an average on each of the 700 sections available for hunting, the total possible kill would be in the neighborhood of 11,600. According to the computations as a result of the survey, approximately 6,000 birds were killed by resident licensed and non-licensed hunters which makes available 5,600 birds for hunters not residing in the county. It may be that this method of handling such computations is subject to correction but it illustrates the correlations of a survey of this type with other essential game management information.

Law Violation and Enforcement

As an aid to law enforcement, this survey can be useful from two standpoints. First, it gives an opportunity to discuss with landowners the difficulties that they may have with uncooperative hunters, and it also gives an opportunity by talking with the hunters to evaluate attitudes and to focus attention upon possible points of importance. Secondly, the measure of the inherent violations can be made against records of previous enforcement work.

SUGGESTIONS REGARDING FUTURE SURVEYS

Application to State-wide Areas

In the author's opinion, only through the application of similar work to a wider geographical area can we achieve full appreciation of the inherent possibilities of such detailed information based on a sampling method. Standing alone, the Washtenaw County survey is interesting but naturally limited in its application. It is believed to be possible, based upon the knowledge of experienced administrators and the basic information available relative to hunters, to select a few typical counties within a state and be able to apply

the information gathered on a state-wide basis. It would seem on the basis of experience in one county that existing field forces could be very quickly trained to gather accurate data without too much time diversion from regular duties.

Public Relation Value

Interviewing hunters on a friendly basis is valuable from a public relations standpoint and gives the interviewer not only an opportunity to gather the information listed on the form but also to become informed about such apparently unrelated things as type and extent of land posted, pheasant nesting losses and many other similar points which will occur to the reader's mind. Such a survey conducted periodically would serve very well to establish hunting trends soon after they appear and indicate any necessities for revision in a state game policy.

Periods Suggested

It is suggested that since the ultimate computations will be somewhat closely related to federal statistical information that an appropriate time would be either soon after the decennial federal census or related to the agricultural census occuring every five years.

Cost of Survey

In the interest of economy in tabulation, some revision of the form used is indicated and a suggested revised one is presented on page 29. In so far as survey costs are concerned, the present one was undertaken through the cooperation of the Department of Conservation and the School of Forestry and Conservation, each one made available $150.00. This contribution from the Game Division of the Department of Conservation was to be utilized for the expenses of meals and travel and a balance of approximately $50.00 remains unexpended, in this account. At this rate, each report collected represents an expenditure of approximately $.60 for field work. It is realized that this is too expensive but is justified in some measure because the work was experimental in nature and time expenditure was considered to be a minor item. On

SUGGESTED REVISED FORM

Co. _____ Twnsp. _____ Occup. _____ Monthly Income _____ Age _____

No license _____ Small Game _____ Large Game _____ Trapping _____

Shotguns				Rifles			
Gauge	No.	Type	Make	Calibre	No.	Type	Make

Age _____ Age _____

	Hours	Trips
Hunted last season, total		
For Farm game		
" Migratory game		
" Forest game (except large)		
" Large game		
" Non-game (crows, etc.)		
Expended in Trapping		

Distance traveled, total _____ miles
Length longest trip _____ miles
Number of meals _____
Number of nights' lodging _____
Expenses other than items above _____

Game Killed

Kind	No.	Kind	No.	Kind	No.
Pheasants		Snowshoe Hares		Wolf	
Ruffed Grouse		Squirrel, Fox		Fox	
Prairie Chickens		Squirrel, Gray		Bobcat	
Sharp-tailed Grouse		Opossum		Weasel	
Woodcock		Skunk		Muskrats	
Geese		Badger		Bear	
Ducks		Raccoon		Deer	
Shore Birds		Mink			
Cottontail Rabbits		Coyote			

Hound _____ Retriever _____ Member Hunting Club? _____

Birddog _____ Other Types _____ Member Sportsman's Organization? _____

Spaniel _____

the basis of experience acquired by the experimental work it appears possible that these costs will all on the average be based upon the following facts. Coverage for a rural area after the interviewer has gained experience should proceed at the rate of about one township per day and should result on the average in about 20 completed interviews. For geographical coverage, this will represent about 100 miles traveled per day, depending to a large extent upon the distance the interviewer must go from his base of operation. In urban areas, it should be possible to obtain 50 interviews a day with a negligable travel expenditure. These urban interviews can profitably be conducted during evening hours wherever a concentration of likely hunters may be expected.

Tabulation Cost

The cost of summarizing the results will depend to a great extent upon the method of tabulation. The form as it has been revised is amenable to tabulation upon the International Business Machine code. On this basis punching card cost and complete summarization should cost in the neighborhood of $50.00 per thousand cards.

SUMMARY

1. This paper reports the development of a sampling method based on certain characteristics of hunters, such as age, income and occupation and applies it to Washtenaw County, Michigan.

2. Field work was carried on during the summer of 1939 partly to measure the ability of hunters to determine experiences from the previous season.

3. The survey covered 10 of the 20 townships in the county and contains statistics on some 300 licensed and non-licensed hunters resident in the county who hunted during the 1938 season.

4. Each individual was interviewed personally and replies entered on a questionnaire form.

5. The order in which the questions were asked was found to be an important factor in receiving correct responses.

6. Cooperation in supplying answers was uniformly excellent.

7. It is believed that the accuracy of the replies is equal to any hitherto received for this type of information.

8. The results of the survey were computed on the basis of the proportion that the particular group involved bore to the total number of individuals in the sample and consequently in the population of the hunters as a whole.

9. The entire series of replies exhibited a surprisingly uniformity which is believed to be beyond the realm of chance.

10. It is computed that the resident licensed hunters in Washtenaw County expended approximately $66,000 during the 1938 season, had an annual investment in guns of approximately $20,000 and trapped furs valued in the neighborhood of $15,000 with a time e penditure of 94,000 hours. It is computed that 3900 pheasants and 14,000 rabbits were bagged.

11. The survey material is believed to be of use for administrative and game management purposes in a number of ways, a few of which are described.

12. Work of this type has certain advantages which it is believed make it worthwhile to continue on different and larger areas.

13. It is believed that by sampling a few representative counties, accurate information applicable to state-wide areas may be obtained.

14. The cost of the experimental survey for field work was approximately $.60 for each completed interview. On the basis of the experience acquired it is believed that future costs can be considerably reduced.

15. A suggested revision is made in certain minor aspects of the interview form for economy without reduction in accuracy.

A P P E N D I X

Occupational Classes Represented

	Professional	Business	Clerical	Farm	Skilled	Unskilled	Other
No.	-	-	-	13	4	10	22
%	-	-	-	27	7	20	45

Shotguns

Gauge	No.	Type	Age	Tot. Val.
12	31			
16	8			
20	4	DB-17	806	$395.00
28	-	SS-24	Ave.	Ave.
410	5		Age	Val.
Total	48		16	$8.00

Rifles

Calibre	No.	Age	Tot. Val.
Large	14	475	$380.00
.22 lr	18		
		Ave.	Ave.
		Age	Val.
		15	$12.00

	Hours	No. Rep.	Aver.
Hours hunted, total	3212	49	65
For Farm game	1534	45	34
" Migratory game	85	6	14
" Forest game (except Large)	130	4	33
" Large game (16%)	581	8	73
" Non-game (crows,etc.)	152	5	31
Expended in Trapping	710	8	89

		No. Rep.	Aver.
Distance traveled			
Tot. Miles	8832	24	360
Driving own car "	3208	11	-
As passenger "	6574	16	-
Longest trip "	2771	19	146
Trips-number	994	49	20
Meals-number	183	7	26
Nights' lodging-no.	19	2	9
Other expenses $	243	45	5.

Game Killed

Kind	No. Killed	No. Rep. Kills	Aver. Per Hunter*
Pheasants	100	32	2.2
Ruffed Grouse	4	1	-
Prairie Chickens			
Woodcock			
Geese			
Ducks	59	4	15
Shore Birds			
Cottontail Rabbits	397	36	8.8
Hares	20	1	

Kind	No. Killed	No. Rep. Kills	Aver. Per Hunter*
Opossums	47	6	8
Skunks	7	3	2
Badgers			
Raccoons	5	3	2
Mink	14	3	5
Coyotes			
Foxes	1	1	
Weasels	17	3	6
Muskrats	438	8	55
Deer	2		25%

*This represents average of all who reported hunting for game of this class.

Hunting Dogs

Kind	No.	Type Percent
Birddog	5	28
Hound	7	39
Spaniel	1	-
Retriever	-	-
Other	6	33

Licenses

Small game	45
Large game	8
Trapping	8
No license	1

Occupational Classes Represented

	Professional	Business	Clerical	Farm	Skilled	Unskilled	Other
No.	2	2	2	43	12	18	-
%	2	2	2	55	15	24	-

Shotguns

Gauge	No.	Type	Age	Tot. Val.
12	60			
16		DB-37		
20		SS-39	Ave. Age	Ave. Val.
28				
410				
Total	60		16	$9.50

Rifles

Calibre	No.	Age	Tot. Val.
Large	22		
		Ave. Age	Ave. Val.
		12	$23.00

	Hours	No. Rep.	Aver.
Hours hunted, total	5048	79	64
For Farm game	2367	74	32
" Migratory game	123	9	14
" Forest game (except Large)	435	6	73
" Large game (15%)	931	12	77
" Non-game (crows,etc.)	16	2	-
Expended in Trapping	1173	14	83

		No. Rep.	Aver.
Distance traveled			
	Total Miles 13945	34	410
Driving own car	" 7783	27	-
As passenger	" 4270	13	-
Longest trip	" 4444	33	135
Trips-number	1271	79	16
Meals-number	140	12	12
Nights' lodging-no.	28	5	6
Other expenses $	355	74	$4.8

Game Killed

Kind	No. Killed	No. Rep. Kills	Aver. Per Hunter*
Pheasants	182	58	2.5
Ruffed Grouse	3	1	-
Prairie Chickens			
Woodcock			
Geese			
Ducks	58	9	6
Shore Birds			
Cottontail Rabbits	747	65	10
Hares			

Kind	No. Killed	No. Rep. Kills	Aver. Per Hunter*
Opossums	219	14	16
Skunks	57	9	6
Badgers	1	1	-
Raccoons	39	7	6
Mink	26	10	
Coyotes			
Foxes			
Weasels	36	12	3
Muskrats	1037	16	64
Deer	4		33%

* This represents average of all who reported hunting for game of this class.

Hunting Dogs

Kind	No.	Type Percent.
Birddog	1	
Hound	47	
Spaniel	1	
Retriever	1	
Other	6	
Total	56	

Licenses

Small game	71
Large game	12
Trapping	13
No license	2

Occupational Classes Represented

	Professional	Business	Clerical	Farm	Skilled	Unskilled	Other
No.	2	8	2	13	11	11	-
%	4	18	4	28	23	23	-

Shotguns

Gauge	No.	Type	Age	Tot. Val.
12	30			
16	12	DB-21	776	$599.00
20	7	SS-14		
28	-		Ave. Age	Ave. Val.
410	2			
Total	51		15	$12.00

Rifles

Calibre	No.	Age	Tot. Val.
Large	10	322	$361.00
.22 lr	13		
		Ave. Age	Ave. Val.
Total	23	13	$14.00

	Hours	No. Rep.	Aver.
Hours hunted, total	2444	47	52
For Farm game	1269	44	29
" Migratory game	104	9	12
" Forest game(except Large)	250	2	-
" Large game (30%)	754	14	53
" Non-game (crows,etc)	75	1	-
Expended in Trapping (6%)	114	3	38

		No. Rep.	Aver.
Distance traveled			
	Total Miles	18367	34	540
Driving own car	"	10225	25	-
As passenger	"	7862	14	-
Longest trip	"	6025	33	182
Trips-number		661	47	14
Meals-number		259	19	14
Nights' lodging-no.		28	7	4
Other expenses $		386	45	$8.50

Game Killed

Kind	No. Killed	No. Rep. Kills	Aver. Per Hunter*
Pheasants	109	36	2.5
Ruffed Grouse	4	1	-
Prairie Chickens			
Woodcock	9	2	-
Geese			
Ducks	21	7	3
Shore Birds	6	3	2
Cottontail Rabbits	378	35	8.5
Hares			

Kind	No. Killed	No. Rep. Kills	Aver. Per Hunter*
Opossums	22	2	11
Skunks	7	2	-
Badgers			
Raccoons	3	1	-
Mink	5	1	
Coyotes			
Foxes			
Weasels			
Muskrats	170	3	56
Deer	4		29%

* This represents average of all who reported hunting for game of this class.

Hunting Dogs

Kind	No.	Type Percent.
Birddog	5	22
Hound	18	78
Spaniel		
Retriever		
Other		
Total	23	Percent ownership 49%

Licenses

Small game	43
Large game	13
Trapping	3
No license	1

Occupational Classes Represented

	Professional	Business	Clerical	Farm	Skilled	Unskilled	Other
No.	1	8	2	3	14	5	-
%	3	24	7	9	42	15	-

Shotguns					Rifles			
Gauge	No.	Type	Age	Tot. Val.	Calibre	No.	Age	Tot. Val.
12	20				Large	16		
16	13	DB-13	335	$887.	.22 lr	9		
20	9	SS-15					199	$527
28	1		Ave.	Ave.			Ave.	Ave.
410	3		Age	Val.			Age	Val.
Total	52		7	$18.		25	8	$21.00

	Hours	No. Rep.	Aver.			No. Rep.	Aver.
Hours hunted, total	2436	33	74	Distance traveled, Total Miles	15316	25	620
For Farm game	1143	30	38	" Driving own car "	10401	23	-
" Migratory game	106	9	12	As passenger "	4915	7	
" Forest game(except Large)	13	2	-	Longest trip "	4646	25	185
" Large game (39%)	805	13	61	Trips-number	495	32	16
" Non-game (crows,etc)	46	2		Meals-number	238	11	23
Expended in Trapping	310	2	155	Nights' lodging-no.	41	6	7
				Other expenses $	332	27	$12.

Game Killed

Kind	No. Killed	No. Rep. Kills	Aver. Per Hunter*	Kind	No. Killed	No. Rep. Kills	Aver. Per Hunter*
Pheasants	81	27	2.7	Opossums	2	1	
Ruffed Grouse	12	3		Skunks	2	1	
Prairie Chickens	2	1		Badgers			
Woodcock	5	2		Raccoons			
Geese	1	1		Mink	6	2	
Ducks	37	9	4	Coyotes			
Shore Birds	5	2		Foxes	1	1	
Cottontail Rabbits	315	23	10.5	Weasels			
				Muskrats	205	2	
Hares	7	2		Deer	5		

* This represents average of all who reported hunting for game of this class.

Hunting Dogs			Licenses	
Kind	No.	Type Percent.	Small game	33
Birddogs	3	21	Large game	14
Hound	7	50	Trapping	2
Spaniel	4	29		
Retriever				
Other				
Total	14	Ownership % 42%		

Occupation Classes Represented

	Professional	Business	Clerical	Farm	Skilled	Unskilled	Other
No.	2	7	2	2	10	2	-
%	8	28	8	8	40	8	-

Shotguns

Gauge	No.	Type	Age	Tot. Val.
12	21			
16	9	DB-15	15	$612.
20	3	SS-5		Ave. Val.
28	-			$17.
410	2			
Total	35			

Rifles

Calibre	No.	Age	Tot. Val.
Large	16	373	$514.
22 lr	10		
		Ave. Age	Ave. Val.
		14	$19

Kind	Hours	No. Rep.	Aver.
Hours hunted, total	1611	25	60
For Farm game	681	24	28
" Migratory game	99	7	14
" Large game (44%)	489	11	45
" Forest game (except Large)	24	3	8
" Non-game (crows, etc.)	292	5	58
Expended in Trapping	20	1	-

		No. Rep.	Aver.
Distance traveled			
Total miles	13072	22	590
Driving own car "	14230	21	-
As passenger "	624	3	-
Longest trip "	6703	22	320
Trips-number	451	25	18
Meals-number	300	14	21
Nights' lodging-number	55	5	11
Others expenses $	352	24	$14.

Game Killed

Kind	No. Killed	No. Rep. Kills	Aver. Per Hunter*
Pheasants	78	20	3.2
Ruffed Grouse	32	4	8
Prairie Chickens			
Woodcock	8	3	2.6
Geese			
Ducks	224	7	32
Shore Birds			
Cottontail Rabbits	124	16	5(8 for 16)
Hares			

Kind	No. Killed	No. Rep. Kills	Aver. Per Hunter*
Opossums	5	1	-
Skunks	1	1	-
Badgers			
Raccoons	1	-	-
Mink	3	1	-
Coyotes	1	1	-
Foxes			
Weasels	3	1	-
Muskrats	7	1	-
Deer	5	-	45%

* This represents average of all who reported hunting for game of this class.

Hunting Dogs

Kind	No.	Type percent
Birddog	14	61%
Hound	5	22%
Spaniel	3	
Retriever	1	
Other	-	
Total	23	
Ownership %	92%	

Licenses

Small game	23
Large game	11
Trapping	1
No license	8%

Occupational Classes Represented

	Professional	Business	Clerical	Farm	Skilled	Unskilled	Other
No.	3	3	-	-	-	-	-
%	50	50	-	-	-	-	-

Shotguns

Gauge	No.	Type	Age	Tot. Val.
12	6		6.2	$185.
16	5		3.7	
20	1		2	Ave. Val.
28				$65.
410				
Total	12			

Rifles

Calibre	No.	Age	Tot. Val.
Largo	3		
.22 lr	4	Ave. Age	$160.
		3.5	Aver. Val.
			$27.

	Hours	No. Rep.	Aver.
Hours hunted, total	279	6	46.5
For Farm game	179	6	29.8
" Migratory game	6	1	-
" Forest game (except Large)	-	-	-
" Largo game (33%)	94	2	47
" Non-game (crows, etc.)			
Expended in Trapping			

			No. Rep.	Aver.
Distance traveled				
	Total Miles	1979	6	329
Driving own car	"	1979	6	329
As passenger	"	-	-	-
Longest trip	"	702	6	117
Trips-number		53	6	9
Meals-number		-	-	-
Nights' lodging-no.		2	1	-
Other expenses $		413	6	$68.

Game Killed

Kind	No. Killed	No. Rep. Kills	Ave. Per Hunter	Kind	No. Killed	No. Rep. Kills	Ave. Per Hunter
Phoasants	15	4	3.7	Opossums			
Ruffed Grouse				Skunks			
Prairie Chickens				Badgers			
Woodcock				Raccoons			
Geese				Mink			
Ducks	12	1	-	Coyotes			
Shore Birds				Foxes			
Cottontail Rabbits	43	3	5.3	Weasels			
				Muskrats			
Hares				Deer			

*This represents average of all who reported hunting for game of this class.

Hunting Dogs

Kind	No.	Type Percent.
Birddog	1	
Hound	2	
Spaniel	-	
Retriever	-	
Other	-	
Total	3	Ownership % 50%

Licenses

Small game	6
Large game	2
Trapping	0

Income classes represented

	$0-500	$501-1000	$1001-1500	$1501-2000	$2001-3000	$3001-	Unknown
No.	-	1	2	1	3	3	
%	-	10	20	10	30	30	

Age Classes represented

	12-14	15-19	20-24	25-29	30-34	35-44	45-54	55-64	65-74	75 &
No.	-	-	1	-	2	3	1	3	-	-
%	-	-	10	-	20	30	10	30	-	-

	Hours	No. Rep.	Aver.
Hours hunted, total	638	10	64
For Farm game	481	10	48
" Migratory game	52	3	14
" Forest game (except large)	5	1	-
" Large game	58	3	16
" Non-game (crows, etc.)	24	1	-
Expended in trapping	-	-	-

		No. Rep.	Ave.	Big Game	No.	Ave.
Distance traveled						
Total Miles	4640	8	580	1580	3	516
Driving own car "	3750	8	469	1580	3	516
As passenger "	890	1	-	-	-	-
Longest trip "	819	8	120	572	3	191
Trips-no.	185	10	18.5	7*	3	2.3*
Meals-no.	21	3	7	-	-	-
Nights' lodging-no.	6	2	3	-	-	-
Other expenses $	275	10	27.50	-	-	-

*Days

Game Killed

Kind	No. Killed	No. Rep. Kills	Aver. Per Hunter*	Kind	No. Killed	No. Rep. Kills	Aver. Per Hunter*
Pheasants	25	3	2.5	Opossums			
Ruffed Grouse				Skunk			
Woodcock	7	2	3.5	Badgers			
Prairie Chickens				Raccoons			
Geese				Mink			
Ducks				Coyotes			
Cottontail Rabbits	103	7	10	Foxes			
				Weasels			
Shore Birds				Muskrats			
Hares				Deer	1		33%

* This represents average of all who reported hunting for game of this class.

Hunting Dogs

Kind	No.	Type Percent.
Birddog		
Hound	1	10
Spaniel		
Retriever		
Other		
Total	1	

Ownership percent 10%

Licenses

Small game	10
Large game	3

Percent violations 1-10%
Percent reporting no kills 0%

Income classes represented

	$0-500	$501-1000	$1001-1500	$1501-2000	$2001-3000	$3001-	Unknown
No.	-	1	2	8	4	3	-
%	-	5.5	11	44	22	16.5	-

Age classes represented

	12-14	15-19	20-24	25-29	30-34	35-44	45-54	55-64	65-74	75 &
No.	-	-	-	1	4	4	7	-	2	-
%	-	-	-	5.5	22	22	39.5	-	11	-

	Hours	No. Rep.	Aver.
Hours hunted, total	1024	18	57
For Farm game	255	16	16
" Migratory game	69	7	10
" Forest game (except large)	4	1	-
" Large game	543	10	54
" Non-game (crows, etc.)	120	2	60
Expended in trapping	-	-	-

		No. Rep.	Ave.	Big Game	No.	Ave.
Distance traveled						
Total Miles	8893	16	550	7420	10	742
Driving own car "	6493	15	430	5620	8	702
As passenger "	2400	2	1200	1925	2	962
Longest trip "	3175	16	195	2930	10	293
Trips-no.	284	18	16	72*	10	7.2*
Meals-No.	113	7	16	-	-	-
Nights' lodging-no.	22	4	5.5	-	-	-
Other expenses $	356	16	22	-	-	-

* Days

Game Killed

Kind	No. Killed	No. Rep. Kills	Aver. Per Hunter*
Pheasants	49	14	3
Woodcock			-
Prairie Chickens			
Geese			
Ruffed Grouse	1	1	-
Ducks	141	7	20
Shore Birds			
Cottontail Rabbits	98	11	6.1
Hares	7	1	-

Kind	No. Killed	No. Rep. Kills	Ave. Per. Hunter*
Opossums			
Skunks			
Badgers			
Raccoons			
Mink			
Coyotes			
Foxes			
Weasels			
Muskrats			
Deer	4		40%

* This represents average of all who reported hunting for game of this class.

Hunting Dogs

Kind	No.	Type percent.
Birddog	2	25
Hound	4	50
Spaniel	2	25
Retriever		
Other		
Total	8	

Ownership percent 45%

Licenses

Small game	17
Large game	10

Percent reporting no kill 5.5%

Income classes represented

	$0-500	$501-1000	$1001-1500	$1501-2000	$2001-3000	$3001 +	Unknown
No.	-	2	6	2	4	-	1
%	-	13	40	13	27	-	7

Age classes represented

	12-14	15-19	20-24	25-29	30-34	35-44	45-54	55-64	65-74	75 +
No.	-	-	3	2	1	6	2	1	-	-
%	-	-	20	13	7	40	13	7	-	-

	Hours	No. Rep.	Aver.
Hours hunted, total	666	14	47
For Farm game	432	14	31
" Migratory game	56	4	14
" Forest game (except large)	-	-	-
" Large game	184	4	46
" Non-game (crows, etc.)	161	2	80
Expended in Trapping	20	1	-

		No. Rep.	Aver.	Big Game	No.	Aver.
Distance traveled						
	Total Miles	7208	10	720	5925	4	1481
Driving own car	"	5633	8	704	4450	3	1483
As passenger	"	1575	4	394	1000	1	1000
Longest trip	"	1448	10	149	1175	4	294
Trips-no.		218	14	17.5	23*	4	5.75*
Meals-no.		108	5	22	-	-	-
Nights' lodging-no.		24	3	8	-	-	-
Other expenses		196	13	15	-	-	-

*Days

Game Killed

Kind	Killed	Kills	Ave. Per Hunter*	Kind	No. Killed	No. Rep. Kills	Ave. Per Hunter*
Pheasants	49	11	3.5	Opossums	5	1	
Ruffed Grouse	16	2	8	Skunk	3	2	
Woodcock	3	1		Badgers			
Prairie Chickens				Raccoons	1	1	
Geese				Mink	3	1	
Ducks	13	4	3	Coyotes			
Shore Birds	4	2	2	Foxes			
Cottontail Rabbits	126	11	9	Weasels	3	1	
				Muskrats	7	1	
Hares	12	1		Deer	2		50%

* This represents average of all who reported hunting for game of this class.

Hunting Dogs

No.	Kind	Type Percent.
1	Birddog	17
4	Hound	66
1	Spaniel	17
-	Retriever	
-	Other	
6	Total	Percent ownership 40%

Licenses

Small game	15
Large game	4
Trapping	1

Percent violation 0%

Percent reporting no kill 13%

Income classes represented

	$0-500	$501-1000	$1001-1500	$1501-2000	$2001-3000	$3001-	Unknown
No.	13	43	13	3	3	-	5
%	16	54	16	4	4	-	6

Age classes represented

	12-14	15-19	20-24	25-29	30-34	35-44	45-54	55-64	65-74	75 +	Unk.
No.	-	6	10	7	7	16	19	6	6	1	2
%	-	8	12	9	9	19	24	8	8	1	2.5

	Hours	No. Rep.	Aver.
Hours hunted, total	4599	80	57
For Farm game	2080	77	27
" Migratory game	103	6	17
" Forest game (except large)	454	5	91
" Large game (20%)	1163	16	73
" Non-game (crows, etc.)	18	2	
Expended in Trapping	899	11	82

		Rep.	Aver.	Game	No.	Aver.
Distance traveled						
Total miles	14137	33	430	12459	16	780
Driving own car "	5660	22	255	4340	6	868
As passenger "	8062	16	500	7810	11	710
Longest trip "	6174	30	206	6015	16	375
				Days		Days
Trips-no.	1309	80	16	140	16	8.75
Meals-no.	295	14	21	-	-	-
Nights' lodging-no.	49	5	10	-	-	-
Other expenses $	384	74	5.20	-	-	-

Game Killed

Kind	No. Killed	No. Rep. Kills	Ave. Per Hunter*	Kind	No. Killed	No. Rep. Kills	Ave. Per Hunter*
Phoasants	179	55	2.3	Opossums	189	12	16
Ruffed Grouse	8	2	4	Skunks	52	9	6
Woodcock	1	1		Badgers	1	1	
Prairie Chickens				Racoons	47	8	6
Geese				Mink	21	9	2
Ducks	77	6	13	Coyotes	1	1	-
Shore Birds	2	1		Foxes	1	1	
Cottontail Rabbits	720	61	9.3	Weasels	27	7	4
				Muskrats	795	13	61
Haros	8	1		Deer	5		31%

* This represents average of all who reported hunting for game of this class.

Hunting Dogs

Kind	No.	Type Percent.
Birddog	8	12
Hound	53	78
Spaniel	1	1
Retriever		
Other	6	9
Total	68	

Ownorship percent 85%

Licenses

Small game	77
Large game	16
Trapping	8
No Trapping	3

Percent violations 1%

Percent reporting no kills 10%

Income classes represented

	$0-500	$501-1000	$1001-1500	$1501-2000	$2001-3000	$3001+	Unknown
No.	1	10	11	12	9	-	5
%	2	21	23	25	19	-	10

Age classes represented

	12-14	15-19	20-24	25-29	30-34	35-44	45-54	55-64	65-74	75+	Unknown
No.	-	-	9	9	7	10	9	-	-	-	4
%	-	-	19	19	14	21	19	-	-	-	8

	Hours	No. Rep.	Aver.
Hours hunted, total	3359	48	70
For Farm Game	1696	47	37
" Migratory game	130	11	12
" Forest game (except large)	124	4	31
" Large game	931	19	49
" Non-game (crows, etc.)	109	4	27
Expended in Trapping	360	4	90

	No. Rep.	Aver.	Big Game No.	Big Game Aver.
Distance traveled Total Miles	22405	37	600	16450 18 910
Driving own car "	18704	33	565	12020 12 1002
As passenger "	3811	10	381	3120 6 483
Longest trip "	5849	36	162	5050 18 280
Trips-no.	690	47	15	113*19 5.4*
Meals-no.	381	22	17	- - -
Nights' lodging-no	54	9	5	- - -
Other expenses $	439	43	10	- - -

* Days

Game Killed

Kind	No. Killed	No. Rep. Kills	Ave. Per Hunter*
Pheasants	109	33	2.3
Ruffed Grouse	28	6	4.5
Woodcock	11	3	4
Prairie Chickens	2	1	
Geese	1	1	
Ducks	50	10	5
Shore Birds			
Cottontail Rabbits	304	31	6.5
Hares	9	3	3

Kind	No. Killed	No. Rep. Kills	Ave. Per Hunter*
Opossums	14	2	7
Skunks	7	2	4
Badgers			
Raccoons	1	1	
Mink	8	3	3
Coyotes			
Foxes	1	1	
Weasels			
Muskrats	298	4	74.5
Deer	5		25%

*This represents average of all who reported hunting for game of this class.

Hunting Dogs

Kind	No.	Type Percent.
Birddog	8	32
Hound	11	44
Spaniel	4	16
Retriever	1	4
Other	1	4
Total	25	

Ownership percent 52%

Licenses

Small game	47
Large game	19
Trapping	5

Percent violation 2%

Percent reporting no kills 12%

Income classes represented

	$0-500	$501-1000	$1001-1500	$1501-2000	$2001-3000	$3001-	Unknown
No.	11	9	9	6	2	-	4
%	20	37	18	12	4	-	8

Age classes represented

	12-14	15-19	20-24	25-29	30-34	35-44	45-54	55-64	65-74	75 &	Unknown
No.	-	1	13	10	9	9	2	2	-	-	-
%	-	2	25	20	18	18	4	4	-	-	-

	Hours	No. Rep.	Aver.
Hours hunted, total	3377	51	66
For Farm game	1993	50	40
" Migratory game	79	7	11
" Forest game (except large)	185	3	62
" Large game (16%)	372	8	46
" Non-game (crows, etc.)	40	1	
Expended in Trapping	748	9	63

Distance traveled	No. Rep.	Ave.	Big Game	No.	Ave.
Total Miles	14324 30	465	10640	8	1330
Driving own car "	8382 26	315	4440	5	888
As Passenger "	5382 8	695	4720	3	1573
Longest trip "	4640 30	153	4025	8	503
Trips-no	968 51	19	46.5*	8	6*
Meals-no.	131 11	12	-	-	-
Nights' lodging no.	25 4	6	-	-	-
Other expenses $	322 47	7	-	-	-

* Days

Game Killed

Kind	No. Killed	No. Rep. Kills	Ave. Per Hunter*	Kind	No. Killed	No. Rep. Kills	Ave. Per Hunter*
Phoasants	124	43	2.5	Opossums	99	7	14
Ruffod Grouse	4	1		Skunks	15	4	4
Woodcock				Badgers			
Prairie Chickens				Raccoons	3	3	1
Geese				Mink	15	5	3
Ducks	37	6	6	Coyotes			
Shore Birds				Foxes			
Cottontail Rabbits	499	42	10	Weasels	21	6	3.3
Hares	20	1		Muskrats	477	9	53
				Deer	4		50%

* This represents average of all who reported hunting for game of this class.

Hunting Dogs

Kind	No.	Type Percent.
Birddog	4	20
Hound	12	60
Spaniel		
Retriever		
Other	4	20
Total	20	Ownership % 40%

Licenses

Small game	49
Large game	8
Trapping	9
No license	1

Percent violations 4%

Percent reporting no kills 8%

Income classes represented

	$0-500	$501-1000	$1001-1500	$1501-2000	$2001-3000	$3001-	Unknown
No.	22	1	-	-	-	-	-
%	96	4	-	-	-	-	-

Age classes represented

	12-14	15-19	20-24	25-29	30-34	35-44	45-54	55-64	65-74	75+	Unknown
No.	2	10	1	3	3	-	1	-	3	-	-
%	8	45	4	13	13	-	4	-	13	-	-

	Hours	No. Rep.	Ave.
Hours hunted, total	1472	23	64
For Farm game	692	20	35
" Migratory game	18	2	9
" Forest game (except large)	20	2	10
" Large game	290	3	97
" Non-game (crows, etc.)	112	4	29
Expended in trapping	340	4	85

		No. Rep.	Aver.	Big Game	No.	Aver.
Distance traveled						
Total Miles	3811	13	292	2884	3	961
Driving own car "	979	4	245	-	-	-
As passenger "	2832	8	353	2884	3	961
Longest trip "	858	11	78	760	3	253
Trips-no.	413	23	19	37*	3	12*
Meals-no.	106	4	27	-	-	-
Nights' lodging-no.	-	-	-	-	-	-
Other expenses $	129	21	6.10			
* Day						

Game Killed

Kind	No. Killed	No. Rep. Kills	Ave. Per Hunter*
Pheasants	48	15	2.4
Ruffed Grouse			
Woodcock	5	1	
Prairie Chickens			
Geese			
Ducks			
Shore Birds			
Cottontail Rabbits	161	16	8
Hares			

Kind	No. Killed	No. Rep. Kills	Ave. Per Hunter*
Opossums	3	3	1
Skunks	1	1	
Badgers			
Raccoons	3	1	
Mink	8	1	
Coyotes			
Foxes			
Weasels	1	1	
Muskrats	283	4	70
Deer	1		33%

*This represents average of all who reported hunting for game of this class.

Hunting Dogs

Kind	No.	Type percent.
Birddog	4	55
Hound	1	15
Spaniel	1	15
Retriever		
Other	1	15
Total	7	
Ownership percent	30%	

Licenses

Small game	20
Large game	3

Percent violations	16%
Percent reporting no kills	4%

AGE GROUP 12-14 Number 2 C-1

Occupational Classes Represented

	Professional	Business	Clerical	Farm	Skilled	Unskilled	Other
No.	0	0	0	0	0	0	2
%	0	0	0	0	0	0	100

Income Groups Represented

	$0-500	$501-1000	$1001-1500	$1501-2000	$2001-3000	$3001-	Unknown
No.	2	0	0	0	0	0	0
%	100	0	0	0	0	0	0

	Hours	No. Rep.	Ave.
Hours hunted, total	230	2	115
For Farm game	50	1	50
" Migratory game			
" Forest game (except large)			
" Large game			
" Non-game (crows, etc.)			
Exponded in Trapping	180	2	90

		No. Rep.	Aver.
Distance traveled			
Total Miles	6	1	-
Driving own car "			
As passengor "	6	1	
Longest trip "	3	1	3
Trips-no.	73	2	36
Meals-no.			
Nights' lodging-no.			
Other exponses $	15	2	7.50

Game Killed

Kind	No. Killed	No. Rep. Kills	Ave. Per Hunter*
Pheasants	1	1	
Ruffed Grouse			
Prairie Chickens			
Woodcock			
Geese			
Ducks			
Shore Birds			
Cottontail Rabbits	10	1	
Hares			

Kind	No. Killed	No. Rep. Kills	Ave. Per Hunter*
Opossums	1	1	
Skunks	1	1	
Badgers			
Raccoons			
Mink			
Coyotes			
Foxes			
Weasels	1	1	
Muskrats	135	2	67
Deer			

* This represents average of all who reported hunting for game of this class.

Hunting Dogs

Kind	No.	Type percent.
Birddog		
Hound		
Spaniel		
Retriever		
Other	1	

Licenses

Small game
Large game
Trapping

Occupational Classes Represented

	Professional	Business	Clerical	Farm	Skilled	Unskilled	Other
No.	0	0	0	6	0	4	10
%	0	0	0	30	0	20	50

Income Groups Represented

	$0-500	$501-1000	$1001-1500	$1501-2000	$2001-3000	$3001-	Unknown
No.	17	3	0	0	0	0	0
%	85	15	0	0	0	0	0

	Hours	No. Rep.	Aver.
Hours hunted, total	1193	20	59
For Farm game	903	18	50
" Migratory game	52	2	26
" Forest game (except large)	122	3	40
" Large game	126	2	63
" Non-game (crows, etc.)	40	1	
Expended in trapping	40	1	

		No. Rep.	Aver.
Distance traveled			
Total Miles	1994	8	249
Driving own car "	1224	6	
As passenger "	570	3	
Longest trip "	629	6	105
Meals-no.	42	2	21
Nights' lodging-no.			
Other expenses $	57	19	3
Trips-no	415	20	21

Game Killed

Kind	No. Killed	No. Rep. Kills	Ave. Per Hunter*
Pheasants	40	13	2.1
Ruffed Grouse	4	1	
Prairie Chickens			
Woodcock			
Geese			
Ducks	29	3	9.6
Shore Birds			
Cottontail Rabbits	192	18	10.6
Hares	20	1	

Kind	No. Killed	No. Rep. Kills	Ave. Per Hunter*
Opossums	6	2	
Skunks	1	1	
Badgers			
Raccoons			
Mink			
Coyotes			
Foxes			
Weasels	2	1	
Muskrats	16	2	8
Deer			

* This represents average of all who reported hunting for game of this class.

Hunting Dogs

Kind	No.	Type Percent.
Birddog	1	25
Hound	3	60
Spaniel		
Retriever		
Other	1	20
Total	5	
Ownership percent		25%

Licenses

Small game	19
Large game	2
Trapping	1
No license	1

Percent violation	0%
Percent reporting no kills	0%

Occupational Classes Represented

	Professional	Business	Clerical	Farm	Skilled	Unskilled	Other
No.	1	1	2	10	11	13	1
%	3	3	6	26	28	35	3

Income Groups represented

	$0-500	$501-1000	$1001-1500	$1501-2000	$2001-3000	$3001-	Unknown
No.	6	18	10	5	0	0	0
%	15	46	26	10	0	0	0

	Hours	No. Rep.	Aver.
Hours hunted, total	2540	39	65
For Farm game	1620	39	39
" Migratory game	113	9	12
" Forest game (except large)	8	1	8
" Large game (23%)	511	9	57
" Non-game (crows, etc.)	109	3	36
Expended in Trapping	495	6	83

		No. Rep.	Aver.
Distance traveled			
Total Miles	15685	24	528
Driving own car "	13014	19	-
As passenger "	2671	9	-
Longest trip "	4185	24	174
Trips-no	775	39	19
Meals-no.	156	9	17
Nights' lodging-no.	34	4	8.5
Other exposes $	295	34	8.50

Game Killed

Kind	No. Killed	No. Rep. Kills	Ave. Per Hunter*
Pheasants	102	32	2.6
Ruffed Grouse	5	1	
Prairie Chickens			
Woodcock	3	1	
Geese			
Ducks	54	8	5
Shore Birds	2	1	
Cottontail Rabbits	333	34	8.5
Hares	2	1	

Kind	No. Killed	No. Rep. Kills	Ave. Per Hunter*
Opossums	50	3	
Skunks	17	5	3.6
Mink	3	2	
Badgers			
Raccoons	2	2	
Coyotes			
Foxes	1	1	
Weasels	16	3	5.3
Muskrats	402	7	56
Deer	4		44%

* This represents average of all who reported hunting for game of this class.

Hunting Dogs

Kind	No.	Type percent.
Birddog	5	33
Hound	7	
Spaniel	2	
Retriever	-	
Other	1	
Total	15	

Ownership percent 38%

Licenses

Small game	39
Large game	9
Trapping	6

Percent violations 5%
Percent reporting no kills 8%

Occupational classes represented

	Professional	Business	Clerical	Farm	Skilled	Unskilled	Other
No.	0	1	2	7	9	11	3
%	0	3	6	21	27	33	9

Income groups represented

	$0-500	$501-1000	$1001-1500	$1501-2000	$2001-3000	$3001-	Unknown
No.	6	8	7	7	4	0	1
%	18	24	21	21	12	0	3

	Hours	No. Rep.	Aver.
Hours hunted, total	1963	32	61
For Farm game	1165	32	36
" Migratory game	100	7	14
" Forest game (except large)	158	2	79
" Large game (18%)	178	6	29.6
" Non-game (crows, etc.)	26	3	8.5
Exponded in Trapping	338	3	112.6

		No. Rep.	Aver.
Distance traveled			
Total Miles	9620	21	459
Driving own car "	4847	16	
As passenger "	4773	10	
Longest trip "	2501	21	119
Trips-no.	408	32	13
Meals-no.	102	8	13
Nights' lodging	15	5	3
Other exponsos $	215	29	7.40

Game Killed

Kind	No. Killed	No. Rep. Kills	Aver. Per Hunter*
Pheasants	95	27	3.0
Ruffed Grouse	9	3	
Prairie Chickens	2	1	
Woodcock	9	2	
Geese	1	1	
Ducks	14	4	3.5
Shore Birds	4	1	
Cottontail Rabbits	318	23	10
Hares	5	1	

Kind	No. Killed	No. Rep. Kills	Ave. Per Hunter*
Opossums	24	3	8
Skunks			
Badgers			
Raccoons	12	1	
Mink	10	3	3.3
Coyotes			
Foxes			
Weasels	2	1	
Muskrats	198	3	66
Deer	1	1	17%

* This represents average of all who reported hunting for game of this class.

Hunting Dogs

Kind	No.	Type percent.
Birddog	5	26
Hound	10	52
Spaniel	2	11
Retriever		
Other	2	11
Total	19	
Ownership percent		57%

Licenses

Small game	32
Large game	6
Trapping	4
No license	1

Percent violation	3%
Percent reporting no kills	15%

Occupational Classes Represented

	Professional	Business	Clerical	Farm	Skilled	Unskilled	Other
No.	2	4	1	8	9	7	3
%	6	12	3	23	26	21	9

Income Groups Represented

	$0-500	$501-1000	$1001-1500	$1501-2000	$2001-3000	$3001-	Unknown
No.	7	10	4	8	3	1	1
%	21	29	12	23	9	3	3

	Hours	No. Rep.	Aver.
Hours hunted, total	2192	34	65
For Farm game	1104	32	34
" Migratory game	44	6	7
" Forest game (except large)	163	3	54
" Large game (32%)	508	11	46
" Non-game (crows, etc.)	72	1	72
Expended in Trapping	335	3	112

		No. Rep.	Aver.
Distance traveled			
Total Miles	11660	19	625
Driving own car "	6578	14	
As passenger "	5082	7	
Longest trip "	2818	19	148
Trips-no.	601	34	18
Meals-no.	197	10	20
Nights' lodging-no.	13	4	3
Other expenses $	217	30	7.15

Game Killed

Kind	No. Killed	No. Rep. Kills	Avg. Per Hunter*	Kind	No. Killed	No. Rep. Kills	Avg. Per Hunter*
Pheasants	69	21	2.2	Opossums	47	3	13
Ruffed Grouse	1	1		Skunks	3	1	
Prairie Chickens				Badgers	1	1	
Woodcock	6	1		Raccoons	14	2	
Geese				Mink	1	1	
Ducks	16	6	2.7	Coyotes			
Shore Birds	2	1		Foxes			
Cottontail Rabbits	265	22	8.1	Weasels	3	2	
				Muskrats	361	3	120
Hares				Deer	4	11	36%

* This represents average of all who reported hunting for game of this class.

Hunting Dogs

Kind	No.	Type percent.
Birddog	2	20
Hound	3	30
Spaniel	3	30
Retriever		
Other	2	20
Total	10	

Ownership percent 29%

Licenses

Small game	30
Large game	11
Trapping	4

Percent violations 3%

Percent reporting no kills 6%

AGE GROUP 35-44 Number 50

Occupational classes represented

	Professional	Business	Clerical	Farm	Skilled	Unskilled	Other
No.	3	6	5	18	10	8	0
%	6	12	10	36	20	16	0

Income groups represented

	$0-500	$501-1000	$1001-1500	$1501-2000	$2001-3000	$3001-	Unknown
No.	4	17	9	7	11	1	1
%	8	34	18	14	22	2	2

	Hours	No. Rep.	Aver.
Hours hunted, total	3669	50	71
For Farm game	1739	49	34
" Migratory game	122	9	14
" Forest game (except large)	273	4	68
" Large game	742	12	62
" Non-game (crows, etc.)	196	5	39
Expended in Trapping	495	8	62

		No. Rep.	Aver.
Distance traveled			
Total Miles	17528	32	550
Driving own car "	12687	28	
As passenger "	3205	8	
Longest trip "	3715	29	127
Trips-no.	931	50	19
Meals-no.	262	13	20
Nights' lodging-no.	22	2	11
Other exponses $	697	47	15.00

Game Killed

Kind	No. Killed	No. Rep. Kills	Ave. Per Hunter*
Pheasants	127	37	2.6
Ruffed Grouse	30	4	7.5
Prairie Chickens			
Woodcock	8	3	
Geese			
Ducks	50	8	6
Shore Birds	3	2	
Cottontail Rabbits	518	38	10.5
Hares	14	2	

Kind	No. Killed	No. Rep. Kills	Ave. Per Hunter*
Opossums	149	7	21
Skunks	40	7	6
Badgers			
Raccoons	24	5	5
Mink	23	7	3
Coyotes			
Foxes			
Weasels	22	6	4
Muskrats	416	8	52
Deer	4		33%

* This represents average of all who reported hunting for game of this class.

Hunting Dogs

Kind	No.	Type percent.
Birddog	6	20
Hound	19	63
Retriever	2	7
Spaniel		
Other	3	10
Total	30	

Ownership percent 60%

Licenses

Small game	50
Large game	12
Trapping	8

Percent violation 8
Percent reporting no kills 10

Occupational classes represented

	Professional	Business	Clerical	Farm	Skilled	Unskilled	Other
No.	1	8	1	19	11	3	1
%	2.3	18	2.3	43	25	7	2.3

Income groups represented

	$0-500	$501-1000	$1001-1500	$1501-2000	$2001-3000	$3001-	Unknown
No.	1	17	12	6	5	2	1
%	2.2	39	27	14	11	4.5	2.2

	Hours	Rep.	Aver.
Hours hunted, total	2069	44	47
For Farm game	870	42	21
" Migratory game	72	6	12
" Forest game (except large)	136	3	45.5
" Large game (39%)	808	17	47
" Non-game (crows, etc.)	110	2	55
Expended in Trapping	44	2	22

		No. Rep.	Aver.
Distance traveled			
Total Miles	14448	27	535
Driving own car "	8153	20	
As passenger "	5445	13	
Longest trip "	3711	27	139
Trips-no.	498	44	11
Meals-no.	250	13	19
Nights' lodging-no.	56	8	7
Other expenses $	201	40	5.00

Game Killed

Kind	No. Killed	No. Rep. Kills	Ave. Per Hunter*
Pheasants	93	32	2.2
Ruffed Grouse			
Prairie Chickens			
Woodcock			
Geese			
Ducks	130	6	21.7
Shore Birds			
Cottontail Rabbits	226	29	5.4
Hares	7	1	

Kind	No. Killed	No. Rep. Kills	Ave. Per Hunter*
Opossums	27	3	9
Skunks	10	2	
Badgers			
Raccoons	10	2	
Mink	3	2	
Coyotes	1	1	
Foxes			
Weasels	4	1	
Muskrats	93	2	46.5
Deer	6		35%

* This represents average of all who reported hunting for game of this class.

Hunting Dogs

Kind	No.	Type Percent.
Birddog	4	8
Hound	39	82
Spaniel	1	2
Retriever	2	4
Other	2	4
Total	48	

Ownership percent 1.4% per man

Licenses

Small game	42
Large game	17
Trapping	2
No license	2

Percent violations 4.5%

Percent reporting no kills 11%

Occupational classes represented

	Professional	Business	Clerical	Farm	Skilled	Unskilled	Other
No.	3	-	1	6	-	2	0
%	25	-	8	50	-	17	0

Income classes represented

	$0-500	$501-1000	$1001-1500	$1501-2000	$2001-3000	$3001-	Unknown
No.	2	3	3	-	2	1	1
%	17	25	25	-	17	8	8

	Hours	No. Rep.	Ave.
Hours hunted, total	528	12	44
For Farm game	316	12	26
" Migratory game	26	2	13
" Forest game (except large)	12	1	
" Large game	50	2	25
" Non-game (crows, etc.)	8	1	
Expended in Trapping	120	1	

		No. Rep.	Ave.
Distance traveled			
Total Miles	2943	7	420
Driving own car "	2343	6	
As passenger "	600	1	
Longest trip "	943	7	133
Trips-no.	159	13	12
Meals-no.	69	3	23
Nights' lodging	22	2	11
Other expenses $	52	12	4.30

Game Killed

Kind	No. Killed	No. Rep. Kills	Ave. Per Hunter*
Pheasants	29	10	2.4
Ruffed Grouse	5		
Prairie Chickens			
Woodcock	1		
Geese			
Ducks	105	2	52.5
Shore Birds			
Cottontail Rabbits	109	8	9
Hares	8	1	

Kind	No. Killed	No. Rep. Kills	Ave. Per Hunter*
Opossums	2	1	
Skunks			
Badgers			
Raccoons			
Mink	2	1	
Coyotes			
Foxes			
Weasels			
Muskrats	60	1	
Deer	1		50%

* This represents average of all who reported hunting for game of this class.

Hunting Dogs

Kind	No.	Type Percent.
Birddog	6	75
Hound	2	25
Spaniel		
Retriever		
Other		
Total	8	

Ownership percent 65%

Licenses

Small game	12
Large game	2
Trapping	1

Occupational classes represented

	Professional	Business	Clerical	Farm	Skilled	Unskilled	Other
No.	1	2	0	6	1	-	2
%	7	18	0	50	1	-	18

Income groups represented

	$0-500	$501-1000	$1001-1500	$1501-2000	$2001-3000	$3001-	Unknown
No.	4	3	3	-	-	1	1
%	32	25	25	-	-	9	9

	Hours	No. Rep.	Ave.
Hours hunted, total	737	12	61
For Farm game	190	12	16
" Migratory game	6	1	
" Forest game (except large)			
" Large game (33%)	463	4	
" Non-game (crows, etc.)			
Expended in Trapping	190	2	95

		No. Rep.	Ave.
Distance traveled			
Total Miles	4694	7	670
Driving own car "	754	4	
As passenger "	2890	4	
Longest trip "	1869	7	267
Trips-no.	164	12	14
Meals-no.	48	4	12
Nights' lodging-no.	12	1	12
Other expenses $	73	10	7.30

Game Killed

Kind	No. Killed	No. Rep. Kills	Ave. Per Hunter*
Phoasants	25	8	3
Ruffed Grouse			
Prairie Chickens			
Woodcock			
Geese			
Ducks	12	1	
Shore Birds			
Cottontail Rabbits	103	9	8.5
Hares			

Kind	No. Killed	No. Rep. Kills	Ave. Per Hunter*
Opossums	1	1	
Skunks			
Badgers			
Raccoons	3	1	
Mink	12	2	6
Coyotes			
Foxes	1	1	
Weasels	6	1	1
Muskrats	162	2	
Deer	2		50%

* This represents average of all who reported hunting for game of this class.

Hunting Dogs

Kind	No.	Type Percent.
Birddog		
Hound	5	100
Spaniel		
Retriever		
Other		
Total	5	

Ownership percent 42%

Licenses

Small game 11
Large game 4
Trapping 2

Percent violation 9%
Percent reporting no kills 25%

AGE GROUP 75 + Number 1

Occupational classes represented

	Professional	Business	Clerical	Farm	Skilled	Unskilled	Other
No.	0	0	0	1	0	0	0
%	0	0	0	100	0	0	0

Income classes represented

	$0-500	$501-1000	$1001-1500	$1501-2000	$2001-3000	$3001-	Unknown
No.	0	1	0	0	0	0	0
%	0	100	0	0	0	0	0

	Hours	No. Rep.	Ave.
Hours hunted, total	14	1	
For Farm game	4	1	
" Migratory game			
" Forest game (except large)			
" Large game			
" Non-game (crows, etc.	10	1	
Expended in Trapping			

		No. Rep.	Ave.
Distance traveled			
Total Miles	6		
Driving own car			
As Passenger			
Longest trip			
Trips-no.	2	1	2
Meals-no.			
Nights' lodging-no.			
Other expenses $			

Game Killed

Kind	No. Killed	No. Rep. Kills	Ave. Per Hunter*
Pheasants	4	1	4
Ruffed Grouse			
Prairie Chickens			
Woodcock			
Geese			
Ducks			
Shore Birds			
Cottontail Rabbits	4	1	4
Hares			

Kind	No. Killed	No. Rep. Kills	Ave. Per Hunter*
Opossums			
Skunks			
Badgers			
Raccoons			
Mink			
Coyotes			
Foxes			
Weasels			
Muskrats			
Deer			

* This represents average of all who reported hunting for game of this class.

Hunting Dogs

Birddog	
Hound	
Spaniel	
Retriever	
Other	
Total	0

SUMMARY NO LICENSE GROUP Number 81 D-1

Income classes represented

	$0-500	$501-1000	$1001-1500	$1501-2000	$2001-3000	$3001-
No.	42	25	6	7	1	0
%	52	31	7	9	1	0

Age classes represented

	12-14	15-19	20-24	25-29	30-34	35-44	45-54	55-64	65-74	75+
No.	4	22	10	5	1	4	18	12	4	1
%	5	28	12	5	1		22	15	5	1

Shotguns

Gauge	No.	Type	Comb. Age	Comb. Value
12	48			
16	3	SS-36	1107	$310
20	3	DB-20		
28	0		Ave.	Ave.
410	7		Age	Val.
Total	61		18	$5.10

Rifles

Calibre	No.	Comb. Age	Comb. Val.
Large	2	98	$79.00
22 lr	13	Ave.	Ave.
		Age	Val.
Total	15	6.5	$5.25

	Hours	No. Rep.	Ave.
Hours hunted, total	1822	81	22.5
For Farm game	1397	80	17.4
" Migratory game	7	3	
" Forest game (except large)			
" Large game			
" Non-game (crows, etc.)			
Expended in Trapping	394	13	30

		No. Rep.	Ave.
Distance traveled			
Total Miles	120	3	40
Driving own car"	60	1	
As passenger "	60	2	
Longest trip "	28	2	14
Trips-no.	886	81	11
Meals-no.			
Other expenses $	104	59	$1.76

Game Killed

Kind	No. Killed	No. Rep. Kills	Ave. Per Hunter*
Pheasants	99	38	1.2
Ducks	11	6	2
Rabbit, Cottontail	316	51	4
Weasel	8	4	2
Opossums	24	6	4
Skunks	4	3	1.3
Mink	1	1	
Muskrats	303	12	25

* This represents average of all who reported hunting for game of this class.

Hunting Dogs

Kind	No.	Type Percent.
Birddog	0	
Hound	5	42
Spaniel	2	16
Retriever	0	
Other	5	
Total	12	
Ownership percent		15%

Licenses

None

Percent violations 12%
Percent reporting no kills 15%

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