

CHARACTERISTICS OF SOME MICHIGAN
SHOOTING PRESERVE USERS

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ABSTRACT

CHARACTERISTICS OF SOME MICHIGAN SHOOTING PRESERVE USERS

By

Jeffrey Crosby Greene

In this study the amount, quality, and satisfaction of hunting plus certain demographic characteristics of Michigan shooting preserve users were measured. These hunters were then compared to other hunters.

Data was gathered through the use of a questionnaire sent to a systematic sample of preserve users. In the survey 10 percent of the population was sampled and the total return of questionnaires was 71 percent.

Michigan preserve users were characterized by averaging 45 years of age and having 26 years of hunting experience. They earned upper-middle and upper class incomes. Educational attainment was high, with the mean level of education over 1½ years of college. The occupation classes listed most often were professional/proprietor and manager/executive. Hunters hunted on all days of the week fairly equally with the average hunt being three to four hours in length. Two-thirds of the respondents were from metropolitan areas.

Public shooting preserves and strictly private preserves were more popular than the membership type.

Jeffrey Crosby Greene

Most preserve hunters were well satisfied with the quality of hunting at their preserves. Over half of the preserve hunters did not use preserve owned hunting dogs. Lack of birds during the open season was the reason most hunters visited preserves. These hunters preferred to hunt game birds such as pheasant, grouse, and woodcock over other game during the open season. About half of them were introduced to hunting by their parents before they were 14 years old. Two-thirds of the hunters did not do all the hunting they would like to do, mostly because of time limitations.

When compared to other hunters (non-preserve) sampled in southern Michigan, Ohio, and the Northeastern states, many significant differences became apparent. Preserve hunters were generally older with more hunting experience. They tended to have higher incomes and had achieved higher educational levels. They took children hunting more often and were more apt to live in urban areas. Preserve hunters seemed more satisfied with their hunting experiences than those hunters who hunted on southern Michigan game and recreation areas.

**CHARACTERISTICS OF SOME MICHIGAN
SHOOTING PRESERVE USERS**

By

Jeffrey Crosby Greene

A THESIS

**Submitted to
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in partial fulfillment of the requirements
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CHAPTER I

INTRODUCTION

We have more time and money with which to enjoy our national outdoor heritage than ever before--but places to enjoy the outdoors are becoming harder to find. This problem is especially true with the small-game hunter. As more and more private land is posted and the remaining public land over-hunted, he must seek his sport elsewhere. The shooting preserve is a natural and functional outgrowth of this problem. Shooting preserves are one of the modern game management tools that can be used to great advantage in solving the problem of hunting opportunities around centers of high human population. The number of shooting preserves in Michigan will probably increase at an accelerated rate in the next few years (Shick, in conversation). The ORRRC Report published in 1962 recommended the states to encourage public shooting preserves.

In order to effectively plan and regulate shooting preserves state administrators and shooting preserve operators should have a knowledge of preserve problems and the people who use them. Records kept by the Michigan Department of Natural Resources along with reports by (Kozicky, 1966a)

(Snyder, 1963) (Burger, 1962) (Frey, et al., 1960) (Dickey, 1957) provide a basis for satisfying the former. The characteristics of the users of these preserves, however, are virtually unknown.

Much of the past research in the wildlife field has been largely devoted to the biological aspects of wildlife species. This necessary research should be coupled with economic and recreational studies to present an overall picture of any problem. For example, following the recent decline in ringneck pheasant (Phasianus colchius) populations in Michigan several studies have been undertaken to determine the causes and the cure for the problem. To my knowledge, no studies concerning the effect of this decline on the attitudes and behavior of the sportsmen have been proposed. Are we not striving to maximize our pheasant population in order to provide as much recreation as possible to the sportsmen! Certainly esthetic and biological values are among our reasons for wanting more pheasants, but they are not the main objective.

If we agree that the users of our natural resources, i.e. the users of our shooting preserves, are important, a twofold approach to the problem is necessary. First, we must determine what type of information about these people would be most useful. Secondly, we need to obtain this information. It is not enough to know the numbers of

persons presently engaged in small-game and preserve hunting. Fundamental aspects of hunters, such as (1) how far have they traveled, (2) what age class distribution is represented, (3) with what frequency do they utilize these resources, and (4) how have these characteristics changed with time, are not known.

Information of a second type is more difficult to obtain. When we start seeking "whys", bias creeps into our findings. For example, what are the maximum distances and minimum facilities that would make an experience satisfactory? Could conditions be changed to optimize the hunter's pleasure in hunting either on the preserve or somewhere else? Is shooting preserve hunting engaged in as a second choice because of the inadequacy of opportunities for a preferred activity? These questions are important to state administrators as well as the preserve operator.

Cain (1960) has recognized this need for research into user-oriented studies.

In successful business ventures, market study is as important as product research and development. Could this also be the case in various non-business fields? In wildlife management--in fact, in the entire field of public natural-resource management--it is my opinion that more attention devoted to the customer would ease many a difficult situation and speed the application of science in practice.

Man is more complex than fish or deer. It is more difficult to make the human behavioral sciences scientific and the results predictable than it is to examine the ethology of non-humans, but a strong effort in that direction should help wildlife managers and others to diagnose their problems and approach their solutions.

W. Winston Mair (1960), in his critique of the 25th North American Wildlife Conference, had this to say:

I am disturbed too at the apparent complete lack of research into the social and cultural aspects of the wildlife conservation field. We are spending significant sums of money on wildlife now and plan to spend much more in the future, particularly with respect to the allied field of recreation. But there has been at this Conference no mention of research into the mores of our people, their motivation and their real needs.

As wildlife managers have become increasingly aware of the importance of the user, four main studies into the characteristics of these users have evolved. The Third National Survey of Fishing and Hunting was designed to collect information about expenditures, numbers of trips, and days spent fishing and hunting during 1965. Persons responding to the National Survey of Fishing and Hunting were actually a sub-sample of persons previously selected from the Current Population Survey (CPS) of the labor force conducted monthly by the Bureau of the Census. This provides an accurate cross section of the population. The survey was similar to earlier ones conducted in 1955 and 1960 and used a personal interview as the measuring instrument.

In 1966 the Agricultural Experiment Station at the University of Vermont mailed questionnaires to 10,000 licensed hunters and fishermen in six Northeastern states. The states cooperating in this study represented a wide range of social and economic conditions. It was the objective

of this study to measure and analyze various characteristics and attitudes of some of the several million hunters and fishermen of the region.

Peterle (1960) conducted a study with the Ohio Cooperative Wildlife Research Unit to measure attitudes and characteristics of Ohio hunting license buyers. Replies to a questionnaire formed the basis for his analysis.

Palmer (1967) analyzed some characteristics of the users of game and recreation areas in southern Michigan. Questionnaires were sent to individuals who had hunted in a game or recreation area in 1961-62. The results are presented in a descriptive sense with hunters being described in many demographic ways. In summarizing his results, Palmer stated: "I believe we now have a good picture of what the southern Michigan state-land hunter is like--how many there are, where they live, how often they hunt, where they hunt and others."

In all the above studies no effort was made to include hunters who paid a fee to shoot, i.e. shooting preserve users. We have a mosaic description of the average small-game hunter who hunted on public or private lands. Is the shooting preserve user different from these hunters?

The general objective of this study as Cain (1960) suggests is to find the solutions to some of our management problems by learning about the users of the resources we are attempting to manage.

The specific objectives were to:

1. Determine the demographic characteristics of Michigan shooting preserve users.
2. Determine the amount, expense, and quality of their hunting.
3. Ascertain the satisfaction of sportsmen with their preserve experiences and their public hunting experiences.
4. Compare the "average" shooting preserve user with other hunters.

Definition of terms

1. Shooting preserve - privately owned and operated area where pen-raised game is released for hunting, usually upon payment of a fee by the shooter. The term shooting preserve implies in most instances, that there is an extended season, no bag limit on released game, and that areas are licensed or sanctioned by state game commissions (Dickey, 1957).
2. Commercial preserve - preserve operated for financial profit. Commercial operations can be broken down into two distinctly different types: (1) open to general public for a fee, or (2) subscribing members only--open to those who pay a prescribed membership fee.

3. Private shooting preserve - non-commercial operation, not open to general public, but operated for members and guests only.
4. Hunter-trip - each visit to a shooting preserve by each individual hunter.
5. User - an individual who pays to shoot or is a guest on a licensed preserve.
6. Pen-raised game - includes all animals raised and released for the purpose of closely regulated harvest by users.

CHAPTER II

METHODS

Study area

The total number of licensed Michigan shooting preserves during the 1968-69 season totaled 70.¹ Michigan shooting preserves, as described in the introduction, fall into three types. No distinction was made between users of commercial and non-commercial enterprises. Both the upper and lower peninsulas were included in the sample. (Figure 1)

The universe was composed of all persons who shot at a Michigan shooting preserve in 1968-69. Non-residents as well as residents were sampled. During this period approximately 3,500 hunter-trips were made to preserves. Each time a hunter visits a preserve he is required by law to register his name, address and hunting license number.

Sampling procedure

During the early stages of the survey the researcher decided to sample 10 percent of the universe. The 350 shooting preserve users were selected from the Department

¹Snyder (1963) wrote a history of shooting preserves in Michigan indicating their growth and distribution.

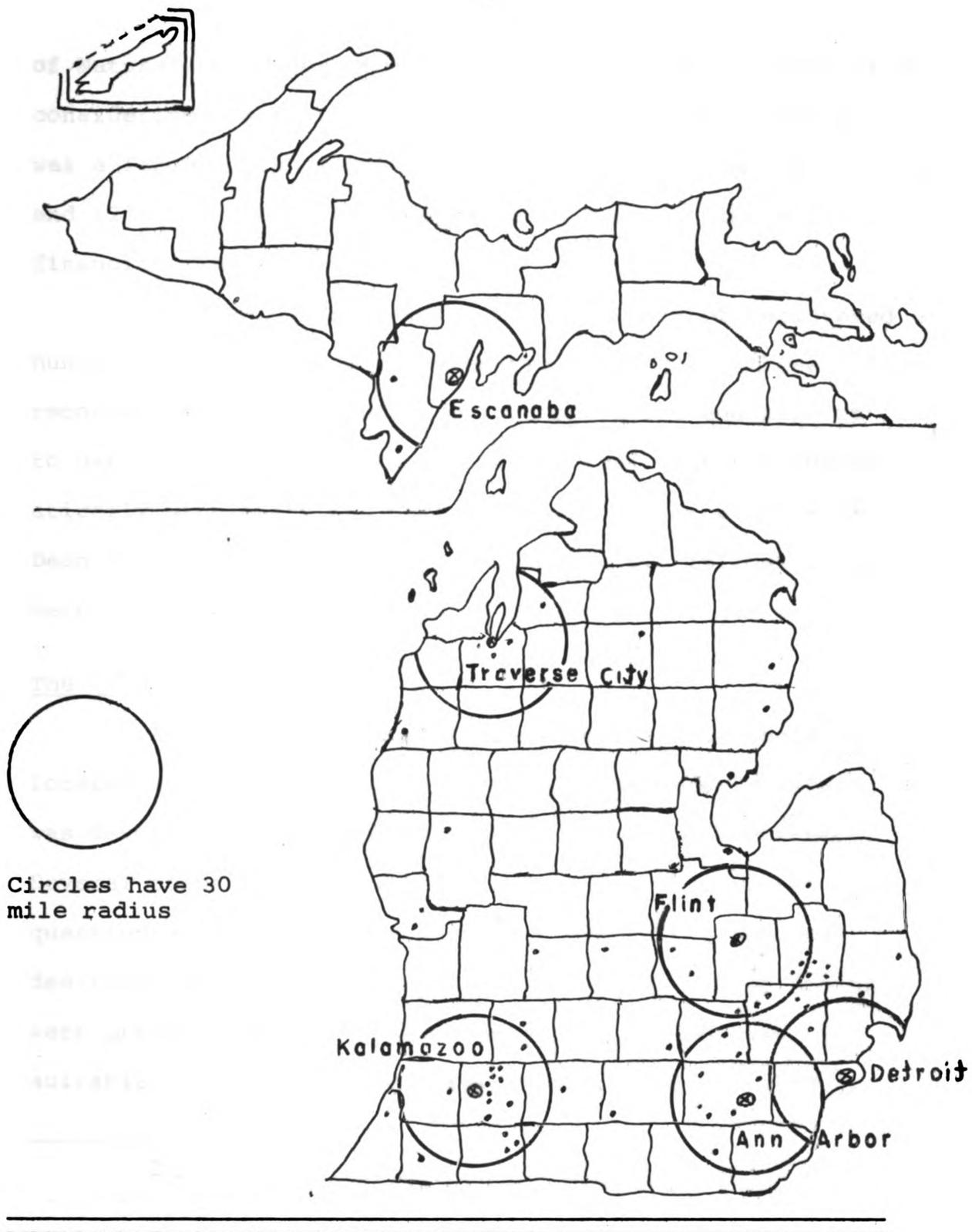


Figure 1. Map of Michigan showing approximate locations of the 70 licensed shooting preserves in 1968-69.

of Natural Resources records. This number was reached after considering two factors: (1) it was felt that 10 percent was a large enough sample from which to obtain valid results; and (2) the number was acceptable in view of time and financial limitations.

In drawing the sample, monthly lists of registered hunters from each shooting preserve were used. These records are sent in monthly by the operators and kept up to date by the Game Division. Names were selected systematically with every Kth name utilized.² If that name had been previously drawn, the name immediately following was selected.

The questionnaire

As no directly comparable research data could be located in the review of literature, considerable effort was devoted to the preparation of a measuring instrument. Several steps were involved in the preparation of the final questionnaire used. From a list of possible questions, desirable and pertinent ones were selected. Rough drafts were presented to the researcher's thesis committee. A suitable questionnaire was pre-tested in August, 1969 by

²Due to a miscalculation of the total available names the researcher shifted the interval from every tenth name to every twentieth name about two-thirds of the way through the selection process.

biologists, graduate students, the graduate thesis committee and hunters. With minor revisions the questionnaire was then printed.

Whenever possible respondents were simply asked to check appropriate boxes. Several questions, however, could be best answered if respondents were not influenced by several alternate choices and were designed as open-ended questions.

The questionnaire itself was printed on an 8 by 11 inch sheet of blue kraft paper.³

Folded lengthwise, a four-page booklet containing thirty questions was presented to the users. The entire mailing package consisted of a questionnaire, an introductory letter, and a pre-addressed, stamped envelope mailed in a 7½ by 10½ inch envelope. The cover letter and subsequent reminder letter were printed on Michigan State University letterhead stationery.⁴ The researcher felt that if Fisheries and Wildlife Departmental stationery through Michigan State University was used, rather than Michigan Department of Natural Resources (the regulating agency) stationery, it would result in a better response.

³Crapo (1969) found this paper color and texture to elicit the maximum response.

⁴Both letters and the questionnaire are illustrated in Appendix A, and B.

The questionnaire used in this investigation was divided into three sections: (1) the first section dealt with questions referring to trips and experiences at shooting preserves; (2) the second section dealt with hunting in general; and (3) the third section contained questions relating to personal and family characteristics.

Response

The 350 questionnaire packages were mailed October 14, 1969. A follow-up letter, reminding the respondents to fill out and mail the questionnaire, was mailed to non-respondents two weeks later on October 28, 1969. A return of 199 completed questionnaires before the reminder was sent, coupled with 42 received after the reminder, yielded a total of 241. Three questionnaires were returned with insufficient or ridiculous answers. Undeliverable inquiries totaled nine. This provided a total return of 71 percent. Bevins, et al. (1968) in a similar questionnaire type of mailed inquiry received a 69 percent return. Palmer (1967) received an 84 percent return from southern Michigan public land hunters. Peterle (1967) mailed questionnaires to Ohio hunters and received a 70 percent return. The 71 percent total return in this shooting preserve survey seems to be comparable to that of similar studies.

Responses were coded and the data was transferred by hand to IBM machine scored sheets. This machine was then used to punch the data on computer cards.

Data was analyzed with the CISSR 6500 computer at Michigan State University. A relatively simple routine program, PERCOUNT,⁵ was selected. After only minor adjustments, the results were printed and ready for use.

⁵PERCOUNT is one of several prearranged computer programs available to MSU students.

CHAPTER III

RESULTS

A. Personal and Family Characteristics

The following discussion is based upon the 238 questionnaires returned by Michigan shooting preserve users. The first portion of the questionnaire was devised to solicit information about personal and family characteristics.

Age

The average shooting preserve user is about 45 years old. Only 39 percent reported their ages as younger than 42 years. Generally those responding were predominantly in the middle and older middle age classes. A total of 46 percent fell between 33 and 54 years of age. Table 1 portrays the range of age classes of the respondents.

The data tend to indicate that few adults in their early years patronize shooting preserves. The general trend shows that use increases gradually with age, reaches a high point in the upper middle age classes then gradually decreases as the retirement years approach.

Table 1. Age class distribution of Michigan shooting preserve users reported by questionnaire respondents in 1969.

Age class (years)	Number of respondents	Percent of total
19 or under	6	2.56
20 to 24	10	4.27
25 to 34	38	16.23
35 to 44	48	20.51
45 to 54	68	29.05
55 to 64	45	19.23
65 or over	19	8.11
Total	234 ^a	100

^aDoes not total 238 as four respondents failed to indicate their age in the questionnaire.

Sex and marital status

A total of 230 respondents gave their sex as male, while only five were female (three failed to list sex). Thus a ratio of 97 percent male and 2 percent female is indicated.

A total of 212 persons or 90 percent indicated they were married.

Occupation

The occupational classes most frequently cited by respondents were those of professional-proprietor

(34 percent) and manager-executive (18 percent). These were followed by sales (14 percent) and semi-skilled labor (13 percent). Not a single farmer was among the respondents. Table 2 presents a tabular summary of the distribution of shooting preserve users among occupational classes.

Education

Hunters were asked to check the highest grade of education they completed. To reduce cheating they were asked to list the last school they had attended. Education including and beyond a master's degree was given a value of 17. A high school education represented 12, a four year college education 16, etc. The mean level completed was 13.7 years. Sixty percent of the respondents had more than a high school education with 42 percent having four years or more of college (Figure 2).

Generally, shooting preserve users were extremely well educated, which is reflected as well in their income grouping (Table 4). The educational attainment classes and the distribution of respondents among them are presented in Table 3.

Income

Among those respondents who completed and returned the preserve user questionnaire, response to

Table 2. The distribution of respondents among occupational classes in 1969.

Occupational class	Number of respondents	Percent of total
Professional or business proprietor	80	34.48
Skilled labor	15	6.46
Semi-skilled labor	30	12.93
Sales	33	14.22
Farmer	0	0
Manager, clerical, or executive	42	18.10
Service worker	14	6.03
Retired	2	0.86
Student, unemployed or other	16	6.89
Total	232 ^a	100

^aDoes not total 238 as six respondents did not give their occupation in the questionnaire.

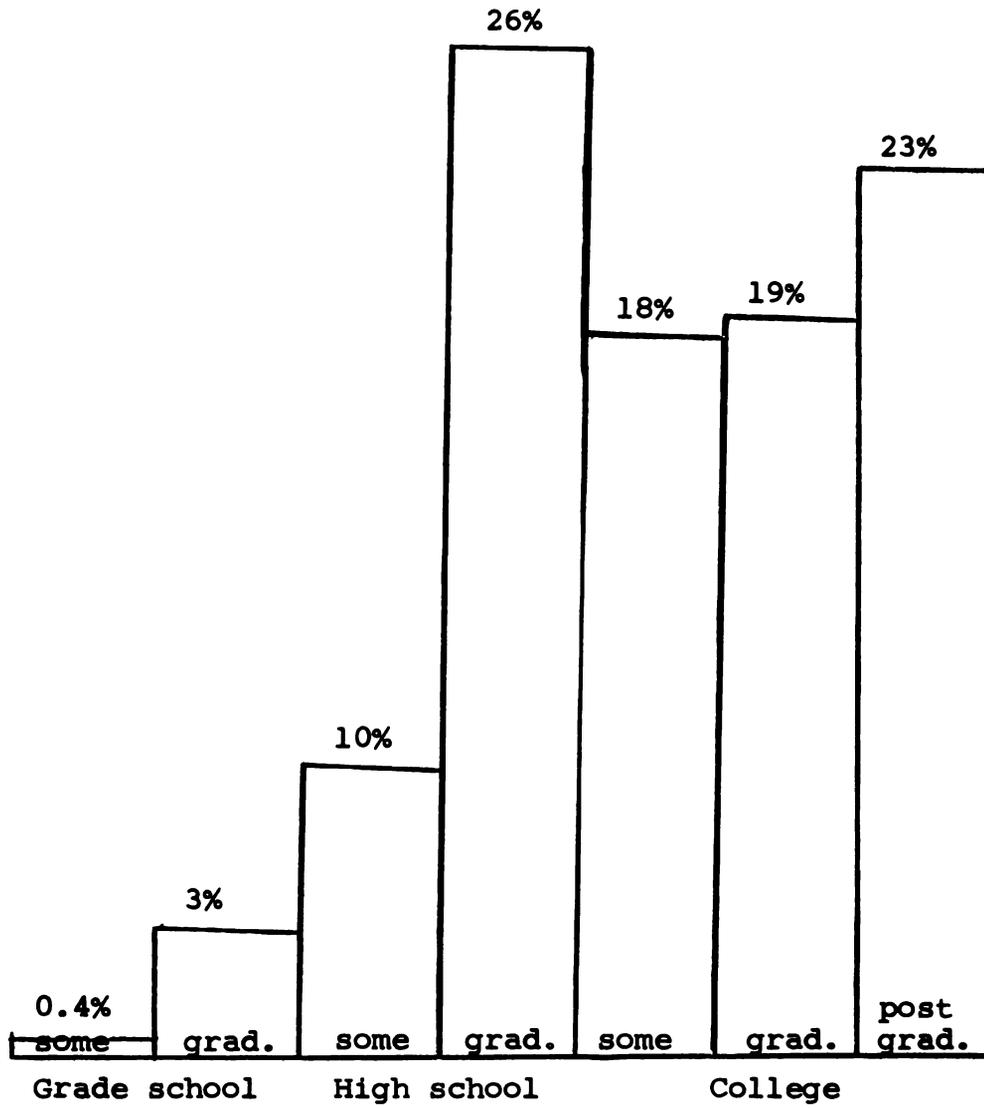


Figure 2. Educational attainment of respondents in 1968-69.

Table 3. The distribution of respondents among educational attainment classes in 1968-69.

Educational class	Number of respondents	Percent of total
1-7 years	1	0.42
8 years	6	2.56
9-11 years	23	9.82
12 years	62	26.49
13-15 years	43	18.37
16 years	44	18.80
17 or more years	55	23.50
Total	234^a	100

^aDoes not total 238 as four respondents did not answer.

the question on current family income was excellent. A total of 227 (95 percent) divulged their family incomes.

Eighty percent of the respondents had a family income of over \$10,000. Surprisingly the percentage of users who fell into each group increased for each income level, so that more respondents had incomes of over \$25,000 than any other group. The distribution of respondents among income classes is portrayed in Table 4.

Table 4. The distribution of respondents among income classes in 1968-69.

Income class	Number of respondents	Percent of total
Under \$3,000	4	1.76
\$3,000 - 5,999	8	3.52
\$6,000 - 7,999	10	4.40
\$8,000 - 9,999	16	7.04
\$10,000 - 14,999	51	22.46
\$15,000 - 24,999	65	28.63
\$25,000 and over	73	32.15
Total	227 ^a	100

^aDoes not total 238 as eleven respondents withheld data on family income.

Residence

Shooting preserve owners have long realized that many of their clients are city residents. The development and increase in shooting preserves is correlated with centers of high population (Kozicky, 1966a).

Dickey (1962) states: "Shooting preserves are mainly for the benefit of the city hunter and all of us are aware of the population movement to metropolitan areas."

A total of 232 respondents indicated their place of residence. Sixteen percent indicated they lived in the country or on a farm, while 12 percent lived in a small town (under 5,000 population). Twenty-seven percent said they lived in a medium sized city (5,000-25,000 population), and 44 percent lived in a large city (more than 25,000 population). Thus city residents comprised over two-thirds of the clientele for Michigan shooting preserves.

From the systematic sample of preserve hunters, only 4.9 percent reside outside Michigan.

B. Shooting Preserve Data

The second portion of the questionnaire was devised to solicit information from the users about their visits to shooting preserves and their ensuing experiences.

Number of trips

If a hunter enjoyed his visit to a preserve, he would probably want to return. Thus if most hunters are satisfied with their hunting, we would expect an average number of hunts per year as more than one. The mean number of trips to preserves made by each respondent in 1968-69 was 7.7 trips. However, most hunters (53 percent) made only four trips or less, while only 6 percent made 20 visits or more. Many of the hunters that used preserves extensively were either preserve employees or dog breeders.

Number of preserves

Most hunters tended to shoot at one preserve. A total of 169 or 71 percent hunted at one preserve. Twenty-five percent visited two preserves, but only a very few (3 percent) tried more than two.

Preserve experience

Since Michigan has had an interrupted shooting preserve history¹ (Snyder, 1963) we would expect to find few hunters that have been visiting them more than 12 years. This was the case, as only 6 percent

¹Shooting preserves were first licensed in Michigan in 1929, but from 1934 to 1958 they did not exist. In 1957 new legislation was passed to allow the rebirth of shooting preserves.

of the respondents indicated that they had been shooting at Michigan preserves more than 10 years. Table 5 portrays a stratification according to years of shooting preserve experience.

Table 5. The distribution of experience of respondents in 1968-69.

Number of years visited Michigan preserves	Number of respondents	Percent of total
First year	61	25.84
2-3 years	68	28.81
4-5 years	56	23.72
6-10 years	36	15.25
over 10 years	15	6.35
Total	236 ^a	100

^aDoes not total 238 as two respondents failed to respond.

Day and length of hunts

The particular days on which hunting was done was fairly equally distributed over the week. Users were asked to indicate if their preserve hunting was done on a weekday, Saturday, Sunday, or a combination of these. Thirty-two percent hunted on weekdays. Twenty-two percent hunted on Saturday and 21 percent

hunted on Sunday². A combination of Saturday and Sunday was indicated by 16 percent of the respondents.

Since most hunters would have difficulty in remembering exactly how long their average hunt lasted, the researcher asked them to indicate a correct box. Possible responses included: (1) less than one hour, (2) one to two hours, (3) three to four hours, and (4) over four hours. Most of the hunters (60 percent) spent from three to four hours on their average hunt.

Money spent

There are three basic ways of paying for the privilege to hunt at a shooting preserve. They are:

1. Pay a set fee for the entire season
2. Pay for birds released each trip
3. Pay for birds shot each trip

The latter two involve an outlay of cash for each trip. Users were asked to indicate how much money they spent during an average trip. This amount is money spent just at the preserve itself. Fifty-three percent of the respondents spent over \$21 each trip. Table 6 shows how much the average hunter spent.

²Sunday hunting in 1968-69 was allowed in all but 13 counties in Michigan (Laws Relating to Natural Resources, 1968). With the passage of recent legislation all Michigan shooting preserves can legally operate on Sunday.

Table 6. Money spent per shooting preserve visit by respondents in 1968-69.

Amount spent	Number of respondents	Percent of total
Guest-none	6	2.67
\$5-10	26	11.60
\$11-15	33	14.73
\$16-20	40	17.85
\$21-30	53	23.66
over \$30	66	29.46
Total	224 ^a	100

^aDoes not equal 238 because of failure to respond or annual membership fee paid

Traveling time

It is generally accepted that a successful shooting preserve must be located close to a metropolitan center. In Wisconsin, Burger (1962) pointed out that over 90 percent of its shooting preserves are located in the southeastern quarter of the state. This southeastern quarter also contains half of Wisconsin's total population. A look at the distribution of Michigan shooting preserves in Figure 1 will illustrate the "clustering" effect around cities.

Kozicky (1966b) found that successful shooting preserves average only 28 miles from centers of population of 25,000 or more.

In the accelerated pace of today's sportsman, distance is more often measured in driving time than in miles. Thirty-four percent of the respondents indicated they spent between one-half hour and one hour traveling to and from their favorite shooting preserve. Table 7 portrays the traveling time of respondents.

Table 7. Distribution of respondents according to time spent traveling to and from Michigan shooting preserves during the 1968-69 season.

Time spent traveling	Number of respondents	Percent of total
Less than $\frac{1}{2}$ hour	32	13.79
$\frac{1}{2}$ hour to 1 hour	79	34.05
1 hour to $1\frac{1}{2}$ hours	39	16.81
$1\frac{1}{2}$ hours to 2 hours	45	19.39
2 hours to 3 hours	22	9.48
Over 3 hours	15	6.46
Total	232 ^a	100

^aDoes not total 238 as six respondents failed to answer the question.

Hunting party

Few users preferred to hunt alone (4 percent) but there seemed to be no preferred number of companions up to four. Twenty-eight percent of all the respondents hunted with one other person, 29 percent hunted with two others, and 25 percent hunted with three others. Only 11 percent preferred to hunt in groups of five or more. Shooting preserve users, as well as most sportsmen, seem to be gregarious to some extent, but also have a few preferred hunting partners. Too large a group would most likely tend to reduce the quality of the hunt.

When asked about how they learned of their favorite shooting preserve, 75 percent replied "from a friend". Other sources given were: newspapers (6.3 percent), personal contact with owner (5.9 percent), and Department of Natural Resources (2.5 percent). Very few hunters listed such means as magazines (0.8 percent), road signs (0.4 percent), TV-radio (0.4 percent) and sportsmen's clubs (1.7 percent).

Types of preserves

The three general types of shooting preserves defined earlier are all found in Michigan. Respondents indicated that they visited public preserves (40 percent)

and strictly private preserves³ (38 percent) about equally. Annual membership preserves were indicated only 12 percent of the time. Some hunters visited more than one type of preserve, but these were relatively few in number.

Preserve services

The main reason sportsmen go to a shooting preserve is to hunt game birds. Many preserves offer other diversifications besides bird shooting. Dickey (1962) points out that:

There is a national trend for shooting preserves to become year-around recreational centers. Besides hunting, some also offer fishing, hiking, clay target shooting, riding, swimming, and other outdoor diversion.

Respondents were asked if their favorite shooting preserve offered any other services or recreational opportunities and to what extent they used these. Fifty-nine percent replied that no other services were offered. Among those who replied that their favorite preserve did offer other services, 8 percent did not use any, 13 percent shot skeet or trap, 4 percent fished, 3 percent ate a snack or meal, and 10 percent used more than one facility.

³This figure could be higher than it is in reality. Members of private clubs tend to hunt more times during a year, thus have more chances to be included in the sample population.

Quality of hunting

Kozicky (1966a) defines "quality" as the summation of all things, both tangible and intangible that make the hunt a happy memory. The researcher attempted to determine to what extent preserve users experienced quality hunting.

It has been suggested by Cain (1960) that certain outdoor activities are "indulged in as a second choice--sort of better than nothing--because of the inadequacy of opportunity and facilities for a preferred activity." Perhaps this is the case with shooting preserve users! Has the lack of game and crowded conditions on public land driven hunters to seek other means of satisfying this desire to hunt?

Users were asked several questions concerning the quality of their hunting experiences. The answers to these questions coupled with the reasons given for supporting their answers should shed some light on the temperament and motivation of the user. Hunters were asked if they had found their visits to shooting preserves enjoyable and worthwhile. As would be expected, most of them (67 percent) answered "always". Figure 3 illustrates the response to the above question.

Along the same line of thinking, hunters were asked what they thought of Michigan shooting preserves

as a place to hunt. Once again most respondents (84 percent) replied with "excellent" or "good". Figure 4 illustrates the distribution of responses.

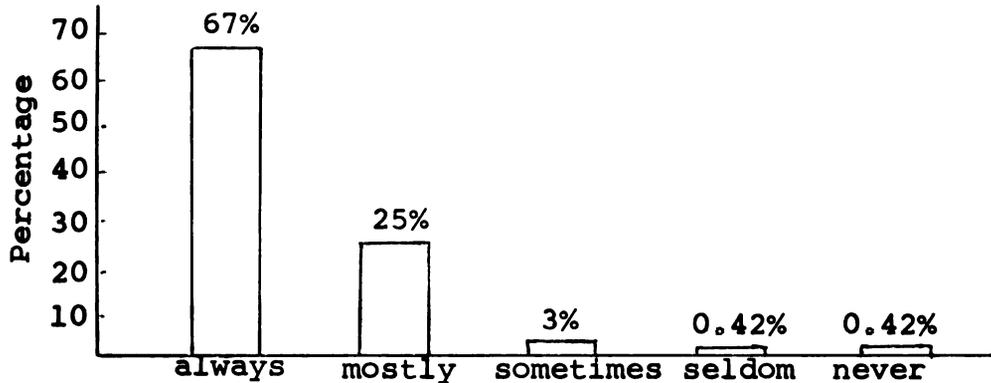


Figure 3. Percentages of five responses regarding hunter opinions when asked if their visits to Michigan shooting preserves were enjoyable and worthwhile.

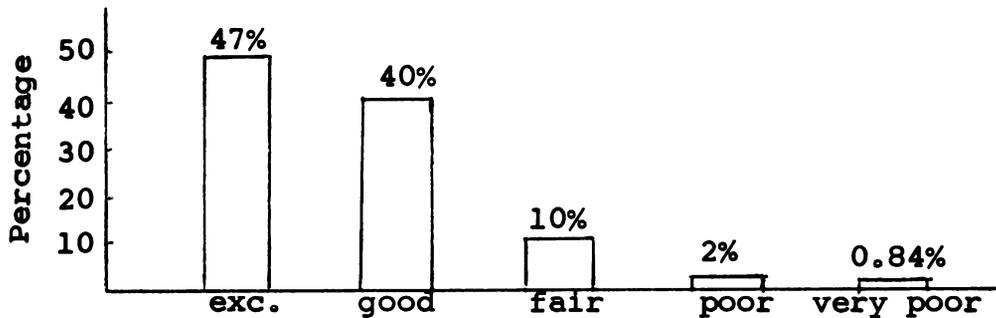


Figure 4. Percentages of five responses regarding hunter opinions of shooting preserves in Michigan as a place to hunt.^a

^aAbout four percent of the hunters did not respond to the question.

The researcher attempted to learn why the hunter ranked the preserves as they did by following up the questions on their opinions with an open-ended question. This question asked: "What reasons do you have for your answer?" The question was left completely open so as not to bias the thinking of the respondent in any way. By wording it thusly, both positive and negative answers were received.

Although the question was often left unanswered (32 percent), the majority who answered listed complimentary responses about their experience. Only 14 percent indicated negative answers and most of these said that "it was not like natural hunting". The single most important reason given for enjoying preserve shooting was "abundant game birds--assured of shooting".

Another question asked the respondent directly why he hunted on shooting preserves. The most prevalent response (45 percent) was "lack of game birds during open season". Many hunters said they felt it just was not worthwhile to hunt pheasants on public land. Table 8 groups the responses of hunters into nine categories. Most hunters enjoyed their preserve experiences and rated them as good or excellent places to hunt.

Table 8. Frequency of reasons given by respondents when asked why they hunted at a shooting preserve in 1968-69.

Reasons listed	Percent of total
Lack of birds during open season	44.5
Convenience	10.0
Longer season offered	9.7
Opportunity to enjoy dog work	7.9
Relaxation, recreation, or exercise	6.7
No response	6.3
Invited guest	3.4
Entertaining clients or friends	2.5
Regular season closed in home state	0.8
Multiple response	7.9
Total	100

The researcher wanted to determine the aspect of preserve hunting in Michigan that needed improving the most. Users were asked what aspect they felt needed improving most at their favorite preserve. To eliminate bias one box indicating "none" and one open-ended box indicating "other" were included. Responses were quite varied and indicated no particular weakness. As 44 percent marked the "none" column,

it would seem to indicate that users are pretty well satisfied with their preserves. Table 9 portrays the frequency of responses given concerning improvements.

Table 9. Frequency of most needed improvements at Michigan shooting preserves listed by respondents during 1968-69.

Answers	Number of respondents	Percent of total
None	105	44.1
Cover and/or shooting lanes	38	15.9
Game birds	30	12.6
No response	24	10.1
Dogs	10	4.2
Costs	7	2.9
Location and/or management	6	2.5
Method of bird release	4	1.7
Guides	3	1.3
Multiple response	11	4.6
Total	238	100

Dogs

Hunting dogs are closely linked to any type of bird shooting. Most preserve operators estimate that

only five percent of today's hunters own dogs (February, 1956, Modern Game Breeding).

Users were asked to rate the preserve hunting dogs, if they hunted behind them. Surprisingly, 51 percent indicated they used their own dogs or dogs other than those belonging to the preserve. The respondents who indicated they used preserve dogs rated them as illustrated in Figure 5.

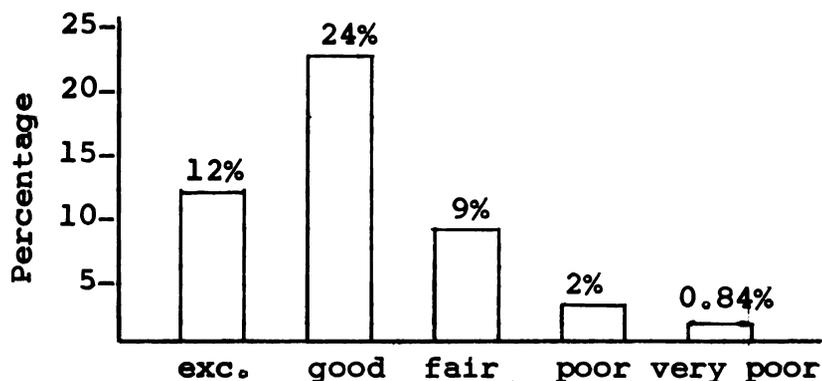


Figure 5. Respondents rating of preserve-owned hunting dogs during the 1968-69 season.

As the pressure on public hunting grounds becomes more intense, many sportsmen will seek easier and more productive places to hunt. Most authorities feel that shooting preserves will increase at an accelerated rate during the next few years (Frey, et al., 1960) (Dickey, 1962) (Snyder, 1963) (Kozicky, 1966a) (Shick, in conversation).

The researcher asked the users if they felt shooting would become more popular and why or why not.

Eighty-two percent replied that they thought the popularity of shooting preserves would increase.

Reasons most often listed were:

1. Lack of suitable land and shortage of birds to hunt (46 percent).
2. Poor hunting on state lands (9 percent).
3. Poor game management by state (3 percent).
4. Longer season offered (3 percent).

On the negative side, 12 percent replied that they did not think preserves would increase in popularity or were uncertain. "Too expensive" was the reason most often listed.

C. General Hunting Data

Most shooting preserve users at one time or another have hunted on public or farmland during the regular open seasons. To get a complete picture of the preserve user, the remainder of his hunting activities should be analyzed also.

Species hunted

Respondents were asked if they had hunted at places other than preserves in 1968-69. Eighty-six percent replied they had. If a "yes" answer was given, they were asked to place a check in front of the animals they hunted. The largest number of hunters

hunted pheasants (64 percent) and grouse/woodcock (61 percent).⁴ Table 10 portrays the species hunted and their corresponding frequencies.

Table 10. Percentages of respondents who hunted various species during the open season of 1968-69.

Species	Number of respondents	Percent of total
Pheasant	152	64
Grouse and/or woodcock	146	61
Deer	121	51
Rabbit	100	42
Waterfowl	91	38

Forty-seven percent of the respondents indicated they hunted both big and small game, while 3 percent hunted only big game.

Hunting experience

As indicated earlier the average age of respondents was 45 years. It would seem logical that these hunters would have quite a bit of hunting experience. This, in fact, is the case as the respondents averaged 26 years of experience in hunting. A stratification of experience is presented in Table 11.

⁴Only common names of animals were listed.

Table 11. Distribution of respondents' years of hunting experience reported in 1968-69.

Years	Number of respondents	Percent of total
10 years or less	34	14.65
11-20 years	44	18.96
More than 20 years	154	66.37
Total	232 ^a	100

^aDoes not equal 238 as six respondents failed to answer the question.

Introduction to hunting

Both the time of life in which the respondents started hunting and who encouraged them to do so is important in forming a hunting philosophy. These factors are apt to influence both his enjoyment and satisfaction.

Respondents were introduced to hunting primarily by their parents (45 percent). Many were introduced to hunting by friends (28 percent) which points out the social aspect of hunting especially in regard to preserve hunting. Table 12 portrays the frequencies of users who were introduced to hunting by various people.

Table 12. Percentage of respondents indicating who introduced them to hunting.

Source of introduction	Number of respondents	Percent of total
Parent	106	45.2
Friend	67	28.6
Relative	29	12.3
No one	24	10.2
Spouse	1	--
Multiple response	7	2.9
Total	234 ^a	100

^aDoes not total 238 as four respondents failed to answer question.

Over one-half of the respondents took up hunting before they started high school. A further stratification is illustrated in Table 13.

Amount of hunting

In seeking information about the time spent hunting, the respondents were asked if they did all of the hunting they would like to do. Twenty-one percent answered "yes" meaning that they did all of the hunting they wanted to do. Sixty-four percent answered "no" because of either time or monetary limitations,

or a combination of both. The single most prevalent answer (52 percent) was "no, not enough time".

Table 13. Stratification of respondents according to when they started hunting.

Age class	Number of respondents	Percent of total
Grade school (under 11 years)	70	29.7
Junior high (11-13 years)	60	25.5
High school (14-17 years)	45	19.1
After high school (18-25 years)	32	13.6
After 26 years of age	28	11.9
Total	235 ^a	100

^aDoes not equal 238 as three respondents failed to answer the question.

Taking children hunting

To indicate possible trends in hunting patterns, shooters were asked if they took any children (under 16) on any hunting trips in 1968. About one-half of the respondents did take youngsters with them. To further clarify the question, if they answered yes, then they were asked to indicate whether they took

them to preserves, public or farmland, or both.
Figure 6 illustrates the results.

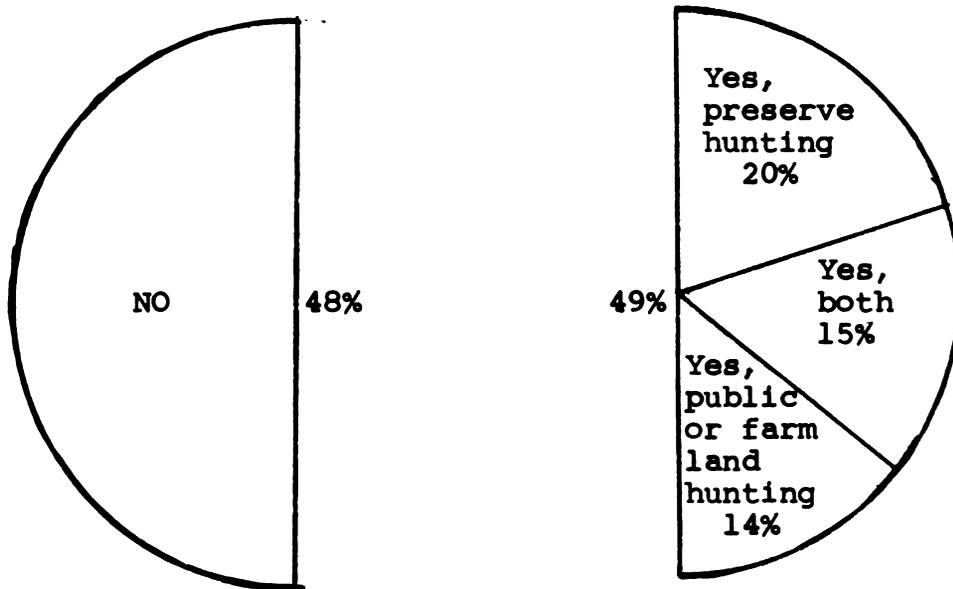


Figure 6. Percentage of respondents indicating whether or not they took any children under 16 on hunting trips in 1968-69.

Hunting outside Michigan

To determine how avid the respondents were toward their hunting, they were asked if they had ever hunted in other states. Sixty-eight percent indicated they had and one-third of these hunters (23 percent of the total) indicated they had visited shooting preserves outside Michigan.

CHAPTER IV

DISCUSSION

One of the primary objectives of this report is to compare Michigan shooting preserve users with other types of hunters. Although intricate statistical tests are not possible many "eyeball" correlations can be made. Data concerning both groups of sportsmen will be presented and contrasts or comparisons between them will be pointed out. This type of treatment is necessary mainly because of two factors: (1) geographical, basic standard of living and other similar differences, and (2) time lag between the present and past studies.

In the main, comparisons will be made to the characteristics of hunters in past studies. These studies were presented in the introduction.

A. Personal and Family Characteristics

Age

Four of the earlier mentioned studies plus a study by Folkman (1963) were analyzed in regard to mean age of hunters. These results were compared to Michigan shooting preserve users in Table 14.

Table 14. Age distribution of hunters from several surveys.

Study	Mean age (years)	Percent younger than 42 yrs.
Michigan shooting preserve users	45	39
National Survey (Anonymous, 1965)	--	--
N. E. Survey (Bevins, et al. 1968)	38	--
Southern Michigan public land hunters (Palmer, 1967)	39	--
Ohio hunters (Peterle, 1967)	35	70
California hunters (Folkman, 1963)	37	--

From these comparisons it seems evident that shooting preserve patrons are older than the average hunter. The four states who sampled their hunters were very similar to each other in average age. Ohio had almost twice as many hunters under 42 years of age (70 percent) as Michigan preserve users (39 percent).

Hunting on shooting preserves requires less effort and is generally more expensive than public hunting. A preponderance of older hunters illustrates that they perhaps have less ambition and more spending money.

Occupation

Occupational classes are difficult to measure because of the task of grouping jobs into similar categories. As each of the four comparable studies utilized a different occupation breakdown, the researcher was forced to make a choice. Since Palmer's (1967) survey was easiest to compare, his breakdown was used. Comparisons are portrayed in Table 15.

Table 15. Occupational distribution of hunters from two surveys.

Occupation class	Percentages	
	Mich. shooting preserve hunters	S. Michigan public land hunters
Professional or business proprietor	34.5	9.7
Skilled labor	6.5	37.2
Semi-skilled labor	12.9	35.6
Sales	14.2	4.3
Farmer	0	3.6
Manager, clerical, or executive	18.1	5.8
Service worker	6.0	3.8
Retired	0.9)
Student, unemployed, or other	6.9) 10.0
)
Total	100	100

Professional-proprietor occupations were much more common among the shooting preserve hunters. Labor, both skilled and semi-skilled, was the main occupation of public land hunters. There was also a much larger percentage of managers and executives among the preserve hunters.

Convenience was probably a major reason for this difference. Professional people undoubtedly have less time to devote to hunting and the time-consuming functions that go with it such as keeping dogs, securing and scouting places to hunt, etc. The data tends to indicate that shooting preserve users are more affluent in general, which is illustrated again in income groups in Table 17.

Education

Shooting preserve hunters were, on the average, better educated than "average" hunters. With a mean level of 13.7 years (almost two years of schooling past high school) preserve hunters were extremely well educated. Comparisons are illustrated in Table 16.

Almost one-fourth (23 percent) of the preserve hunters had more than 17 years of education. This accounts for the high degree of professional people (Table 15) who responded.

Table 16. Educational attainment of hunters from several surveys.

Survey	PERCENTAGES		
	Graduated from high school	Graduated from college	Five or more years of college
Michigan shooting preserve users	86	42	23
National survey (Anonymous, 1965)	72	9	--
N. E. Survey (Bevins, et al. 1968)	59	--	--
Southern Michigan public land hunters (Palmer, 1967)	50	--	--
Ohio hunters (Peterle, 1967)	85	6	6

Some discrepancy exists between the four comparative surveys in the percentage of high school graduates. While slight differences in methodology might have accounted for some differences, it seems apparent that preserve hunters are better educated than other hunters.

Income

Shooting preserve hunters had greater family incomes than did other hunters. Although this difference is plainly evident it is difficult to illustrate

because of unlike income classes. The researcher compared all groups according to the percentage of hunters who made under \$3,000, over \$10,000, and over \$15,000. The results are illustrated in Table 17.

Table 17. Family income classes of hunters from several surveys.

Survey	Family Income		
	\$3,000 or under	\$10,000 and over	\$15,000 and over
Michigan shooting preserve users	1.7%	83.3%	60.8%
National Survey (Anonymous, 1965)	12.7%	20.7%	5.1%
N. E. Survey (Bevins, et al. 1968)	11%	--	5%
Southern Michigan public land hunters (Palmer, 1967)	--	5.1%	--
Ohio hunters (Peterle, 1967)	22%	--	--

It is obvious that the family income of the preserve user is completely different in all three categories from those of other hunters. Comparatively fewer preserve hunters make under \$3,000 and many more make over \$15,000. In fact, the income group the highest number of respondents checked (32 percent) was that of \$25,000 or over.

When the data from the last three tables (income, education and occupation) is lumped together, the affluence of the preserve hunter becomes apparent. This affluence is further illustrated by the fact that 68 percent of the respondents have hunted outside Michigan.

Palmer (1967) found that in most cases, the average southern Michigan citizen was not much different from the average southern Michigan public land hunter. Peterle (1967) found much the same results with Ohio hunters. In contrast to these findings, are the significant differences in the last three sections of this report between preserve hunters and other hunters.

Residence

Shooting preserve hunters had a greater tendency to live in metropolitan areas. Seventy-one percent of the respondents indicated they resided in a city of over 5,000. Palmer (1967) found that 60 percent of the hunters that utilized southern Michigan public lands were from urban areas.¹

In the National Survey of Fishing and Hunting (1965), 45 percent of the hunters surveyed in the

¹Hunters were classified as rural when they lived outside of a community.

United States lived in Standard Metropolitan Statistical Areas (SMSA).² Thus the classification of residents was not identical; but a comparison of data seemed justifiable.

In a study on regulated shooting preserves in Pennsylvania, Frey, et al. (1960) found that 88 percent of the users were city residents. This figure corresponds well with the 71 percent of Michigan preserve users from metropolitan areas. Two probable reasons for this difference are: (1) Pennsylvania has more people per square mile, and (2) slight differences in the definition of urban areas. In both cases, however, the majority of preserve hunters were urban residents.

B. General Hunting Data

Species hunted

As evidenced by their patronage of shooting preserves, respondents would probably like to hunt game birds during the open season. This is the case as 64 and 61 percent preferred to hunt pheasant and grouse/woodcock respectively. Deer hunting was also participated in at a high level (51 percent).

²A SMSA is defined as including at least one city having 50,000 inhabitants or two cities with contiguous boundaries and a combined population of at least 50,000.

In a study of hunting conducted in the Northeastern states (Bevins, et al. 1968) it was found that deer hunting was the most popular hunting activity. Seventy-eight percent of all hunters in the region hunted deer, while only 45 percent hunted game birds. This species preference is probably due in part to the greater abundance of avian game species in Michigan.

Hunting experience

Just as shooting preserve users were older than other hunters we would expect them to be more experienced. When compared with Northeastern hunters, this is the case. Bevins, et al. (1968) found the mean years of hunting experience was 21 years, while Michigan shooting preserve hunters averaged 26 years. Michigan preserve hunters had over 66 percent with 20 years experience, while only 42 percent of the Northeastern hunters fell into this category.

Introduction to hunting

On the surface it would seem that preserve hunters would tend to start hunting later in life than other hunters. Preserve hunting requires neither the experience or the effort of open season hunting. Perhaps less preserve hunters would be introduced to hunting by their parents than would be true in other hunters? Questionnaire results of the preserve survey

when compared with Northeastern hunters yields no significant difference, however. Table 18 portrays these results.

Table 18. Introduction to hunting as indicated by hunters in two surveys.

Survey	Introduced to hunting by	
	Parent	Friend
Michigan shooting preserve users	45%	29%
Northeastern hunters (Bevins, et al. 1968)	50%	29%

Amount of hunting

In attempting to measure the extent to which hunters utilized preserves as a "second choice" activity they were asked "if they did all of the hunting they would like to do." Twenty-one percent answered "yes" to the question. Bevins, et al. (1968) found that 21 percent of the Northeastern hunters sampled also answered "yes".

This would seem to indicate that preserve hunters are not satiated any easier than other hunters. They evidently are not satisfied to make one or two hunting trips a year. In both surveys most of the reasons given for not hunting as much as they would like to were related to time.

Taking children hunting

Forty-nine percent of Michigan shooting preserve hunters took children under 16 on hunting trips in 1968-69. For a complete breakdown see Figure 6. Bevins, et al. (1968) found that only 27 percent of Northeastern hunters took children under 16 on hunting trips in 1965.

While it is hard to draw any conclusions from this sort of data, it is evident that a high percentage of preserve hunters want to instill in their children a fondness for hunting--both preserve and non-preserve.

C. Shooting Preserve Data

As no similar studies on shooting preserve users have been published, it is not possible to compare findings about preserve hunts with those of past studies.

In analyzing responses to the questionnaire and grouping some of the data together, the researcher attempted to portray the average preserve user. This "average" user was then compared to other hunters. Little mention was made, however, of the quality of the hunters' experiences at preserves.

In order to experience any form of "quality" recreational experience, the sportsman must be willing to pay for it. This willingness to pay is more easily

measured at shooting preserves than in other activities because a direct outlay of cash is required. The hunter must bring gun, shells, and clothes, but these are items most hunters would normally possess.

Varying amounts of money are spent per trip to Michigan shooting preserves. Fifty-three percent spent over \$21 on each visit. The actual monetary value (dollars and cents), however, is not as important as what this sum represents to the spender. When asked what they thought of Michigan shooting preserves as a place to hunt, less than 2 percent of the respondents indicated they thought they were too expensive. Obviously most respondents did not feel the price they paid to hunt was too high.

Hunter opinions of places to hunt

Palmer (1967) asked the southern Michigan public land hunter what he thought of these areas as a place to hunt. He gave his respondents the same five choices that shooting preserve users were given-- excellent, good, fair, poor, and very poor. Shooting preserve users indicated "excellent" about 47 percent of the time. Southern Michigan hunters, on the other hand, thought their places to hunt were excellent only about 9 percent of the time. Almost 40 percent of them thought of these game areas as only fair.

Most game and recreation areas in southern Michigan are heavily hunted, but are probably not as intensively used as the majority of shooting preserves. When Palmer (1967) asked hunters why they hunted on public land, one of their most frequent responses was "areas offered freedom, did not need permission to hunt." Over one-half of the total responses to his question were negative.

In view of the foregoing data, the researcher feels that perhaps hunting on public lands in southern Michigan was engaged in as more of a "second choice" type of activity than was hunting at shooting preserves. Obviously hunters would prefer to hunt uncrowded coverts teeming with a variety of game. This is not often possible, but it doesn't mean that all hunting is a second choice type of activity. However, the hunters surveyed seemed happier and more satisfied with shooting preserve experiences than with state land experiences.

CHAPTER V

SURVEY LIMITATIONS

This section will be devoted to some of the limitations of this survey. It is hoped that similar future studies can thus be improved.

Questionnaire

Perhaps the single most important aspect in any type of questionnaire research is the information gathering device itself--the questionnaire. Much care and consideration must go into the formation of questions. A researcher should be constantly alert for any sort of bias directed at the respondent. Questions with structured responses (check one of the following) tend to channel the thinking of a respondent. While open-ended questions eliminate some of this bias, they are often difficult to interpret. It is, at best, difficult to determine the wording of questions and there are few guidelines. The researcher feels that judgment should be used when compiling questions and that a blend of each type is desirable. Ease of coding should not be a consideration in determining the questions.

In some surveys, more than one follow-up letter is sent to non-respondents. The researcher did not feel it was necessary to send out more than one reminder for two reasons. First, the rate of return drops substantially for each successive reminder. Secondly, the return of over 70 percent was considered excellent.

Respondents

In future surveys a further stratification by shooting preserve types seems necessary. Because members of a strictly private preserve have more chances to be included among the sample, they probably are over-represented in the results. The sample could be further subdivided into the three basic types of preserves. Information about the users of each of these preserve types would be more desirable. Although an even further breakdown could include only users of a single preserve, this does not seem justifiable or economical.

Lastly, some check on the reliability of responses is needed. Telephone interviews, personal interviews or further mail inquiries could all yield some measure of reliability. A small percentage of interviewed respondents and non-respondents could reveal inconsistencies in the results.

CHAPTER VI

SUMMARY

1. During the 1968-69 shooting preserve season approximately 3,500 hunter-trips were made to licensed Michigan preserves
2. Through a questionnaire survey, about 10 percent of these hunters provided answers to questions concerning demographic as well as quality-oriented inquiries.
3. These hunters were characterized by being 97 percent males; averaging 45 years of age. About 90 percent were married and 50 percent took children on hunting trips.
4. Most shooting preserve users earned upper middle class incomes. The professional and manager occupation classes were well represented. The average level of education was just over 1½ years of college.
5. Two-thirds of the preserve hunters lived in urban areas.
6. Most hunters tended to shoot at one preserve.

7. The days of the week hunters tended to shoot at preserves were fairly equally distributed, with most hunts being from three to four hours in length.
8. Few preserve hunters liked to hunt alone, but no particular number of hunters was preferred.
9. Public shooting preserves and strictly private preserves were visited by about 40 percent of the hunters.
10. Other than hunting, the favorite activity was clay target shooting.
11. Most preserve hunters felt that Michigan shooting preserves were excellent or good places to hunt and always found their visits to these preserves enjoyable and worthwhile.
12. Lack of birds during the open season was the reason why most hunters visited preserves.
13. Over half of the preserve hunters did not use preserve owned hunting dogs.
14. Preserve hunters preferred to hunt game birds such as pheasant, grouse, and woodcock over other game during the open season.

15. Preserve hunters averaged 26 years of hunting experience. About half of them were introduced to hunting by their parents before they were 14 years old.

16. Two-thirds of the hunters did not do all the hunting they would like to do, mostly because of time limitations.

17. When compared to average hunters (not preserve hunters) from Michigan and other states, preserve hunters were significantly different in that they:
 - a. tended to be older with more hunting experience.
 - b. tended to have higher incomes and had achieved higher educational levels.
 - c. took children hunting more often.

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LITERATURE CITED

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APPENDIX A

**Introductory and Reminder Letters
Sent to Selected Shooting Preserve Users**

DEPARTMENT OF FISHERIES AND WILDLIFE • NATURAL RESOURCES BUILDING

Dear shooting preserve user:

Shooting preserves are relatively new to Michigan; consequently, little is known about the services they provide sportsmen of Michigan. For this reason, I am conducting a study at Michigan State University which is designed to evaluate Michigan shooting preserve operations. Since you have hunted on at least one shooting preserve, your cooperation in providing me with information will be appreciated.

Please complete the attached questionnaire and return it to me by November 1, 1969. Your reply will be confidential and need not be signed. It will be used with similar replies to show a pattern of preserve operations. The time it will take you to complete the questionnaire will be valuable in helping shooting preserve operators provide you and other sportsmen with enjoyable hunting opportunities.

It is hoped that the study will improve your shooting preserve hunting experiences by:

1. Providing the shooting preserve operators with information on the needs and wants of their clientele.
2. Providing factual data which can be useful to people who wish to get into the shooting preserve business.

Simply place your completed questionnaire in the stamped, pre-addressed envelope, and return it to me at your earliest convenience. Thank you very much for your help.

Best wishes for an enjoyable hunting season in 1969-70!

Sincerely,



Jeff Greene

DEPARTMENT OF FISHERIES AND WILDLIFE • NATURAL RESOURCES BUILDING

Dear shooting preserve user:

This letter is a reminder to complete and send back the questionnaire sent to you concerning Michigan shooting preserves. If you have already done so, please disregard this reminder. If you have misplaced the stamped, pre-addressed envelope, please mail the completed questionnaire to:

Jeff Greene
Department of Fisheries and Wildlife
Michigan State University
East Lansing, Michigan 48823

I would like to remind you that the information supplied by you and other sportsmen is extremely important in this study project. The time it will take you to complete the questionnaire will be valuable in helping shooting preserve operators provide you and other sportsmen with enjoyable hunting opportunities.

Your cooperation is greatly appreciated.

Sincerely,



Jeff Greene

APPENDIX B

Questionnaire Used In Survey

PLEASE FILL OUT ALL QUESTIONS CAREFULLY. QUESTIONS REFER
TO SHOOTING PRESERVES YOU SHOT AT LAST YEAR.

1 APPROXIMATELY HOW MANY TRIPS DID YOU MAKE TO SHOOTING PRESERVES IN 1968?
_____ (number)

2 HOW MANY DIFFERENT SHOOTING PRESERVES DID YOU VISIT IN 1968? ____ (number)

3 HOW MANY YEARS HAVE YOU BEEN VISITING MICHIGAN SHOOTING PRESERVES?
 1st yr 2-3 yrs 4-5 yrs 6-10 yrs over 10 yrs

4 ON WHICH DAY OF THE WEEK WAS YOUR PRESERVE HUNTING NORMALLY DONE?
 Weekday (Monday thru Friday) Saturday Sunday

5 HOW LONG WAS YOUR AVERAGE HUNT?
 less than 1 hour 1-2 hours 3-4 hours over 4 hours

6 APPROXIMATELY HOW MUCH MONEY DID YOU SPEND DURING AN AVERAGE TRIP (JUST
AT THE PRESERVE)?
 \$5-10 \$11-15 \$16-20 \$21-30 over \$30

7 HOW MUCH TIME, ON THE AVERAGE, DID YOU SPEND TRAVELING TO AND FROM YOUR
FAVORITE SHOOTING PRESERVE? _____ (hours and minutes)

8 WHAT WAS THE AVERAGE NUMBER OF PEOPLE IN YOUR PRESERVE HUNTING PARTY?
 alone 2 3 4 5 or more

9 IF YOU HUNTED WITH PRESERVE DOGS, HOW WOULD YOU RATE THEM AS HUNTING DOGS?
 excellent good fair poor very poor

10 HOW DID YOU LEARN ABOUT YOUR FAVORITE SHOOTING PRESERVE?
 newspaper road sign TV-radio other _____
 magazine friend sportsmen's club (write in)

11 WHICH OF THE FOLLOWING KINDS OF PRESERVES DID YOU HUNT IN 1968?

Commercial

Non-Commercial

- open to general public for a fee strictly private (members and guests)
- open to members and guests

12 DID THE PRESERVE YOU MOST OFTEN VISITED OFFER ANY SERVICES OTHER THAN BIRD SHOOTING, SUCH AS SKEET, SWIMMING, FISHING, ETC.? YES NO

If yes, what services did you or your party use? (Please list below)

13 WHAT PART, IF ANY, DO YOU FEEL NEEDS IMPROVING THE MOST AT YOUR FAVORITE PRESERVE?

- cover or shooting lanes game birds
- dogs other _____
- guides none (write in)

14 DID YOU FIND YOUR VISITS TO SHOOTING PRESERVES WERE ENJOYABLE & WORTHWHILE?

- always mostly sometimes seldom never

15 SPEAKING OF SHOOTING PRESERVES IN MICHIGAN, WHAT DO YOU THINK OF THEM AS A PLACE TO HUNT?

- excellent good fair poor very poor

What reasons do you have for your answer? _____

16 WHY DO YOU HUNT ON A SHOOTING PRESERVE? _____

17 DO YOU FEEL THAT SHOOTING PRESERVES WILL BECOME MORE POPULAR IN MICHIGAN IN FUTURE YEARS? YES NO UNCERTAIN

Please explain your answer _____

THE FOLLOWING QUESTIONS ARE ABOUT HUNTING IN GENERAL

- 18 DO YOU HUNT ON NON-PRESERVE LAND (PUBLIC OR FARMLAND) IN THE REGULAR HUNTING SEASON? YES NO

If yes, what species do you hunt?

- rabbit woodcock other _____
(write in)
- pheasant grouse (partridge)
- deer waterfowl (ducks, etc.)

- 19 HOW MANY YEARS HAVE YOU HUNTED? _____ (years)

- 20 WHO GOT YOU STARTED HUNTING? (Please check one or more)

- parent spouse relative _____ friend no one
(write in)

- 21 DO YOU DO ALL OF THE HUNTING THAT YOU WOULD LIKE TO DO? YES NO

If no, why? _____

- 22 DID YOU TAKE ANY CHILDREN (UNDER 16) ON ANY HUNTING TRIPS IN 1968?

- YES NO If yes, where did you take them?

- preserve public or farmland both

- 23 HAVE YOU HUNTED IN OTHER STATES? YES NO If yes, have you

hunted on shooting preserves outside of Michigan? YES NO

IN ORDER TO FORECAST THE FUTURE DEMAND FOR SHOOTING PRESERVES IN MICHIGAN, IT IS NECESSARY FOR US TO BE ABLE TO RELATE FAMILY CHARACTERISTICS TO PRESERVE USE. PLEASE ASSIST US BY ANSWERING THE FOLLOWING QUESTIONS ABOUT YOUR FAMILY CHARACTERISTICS.

- 24 WHICH OF THE FOLLOWING BEST DESCRIBES TOTAL INCOME OF YOUR FAMILY IN 1968?

- Check one: under \$3,000 \$8,000-9,999 over \$25,000
- \$3,000-5,999 \$10,000-14,999
- \$6,000-7,999 \$15,000-24,999

APPENDIX C

Code Book Prepared For Responses

Code Book Prepared For Responses

<u>Column Number</u>	<u>Question Number</u>	<u>Punching Instructions</u>
1-3	--	Questionnaires numbered serially in upper right corner.
4-5	1	Number of trips to Michigan shooting preserves reported.
6	2	Number of preserves: 0- No response 1- One visit 2- Two visits 3- Three visits 4- Four visits 5- Five visits
7	3	Years of preserve experience: 0- No response 1- First year 2- Two to three years 3- Four to five years 4- Six to ten years 5- Over ten years
8	4	Days hunted: 0- No response 1- Weekdays only 2- Saturday only 3- Sunday only 4- Weekdays and Saturdays 5- Weekdays and Sundays 6- Saturday and Sunday 7- Weekday plus Saturday & Sunday
9	5	Length of hunts: 0- No response 1- Less than one hour 2- One to two hours 3- Three to four hours 4- Over four hours

<u>Column Number</u>	<u>Question Number</u>	<u>Punching Instructions</u>
10	6	Money spent: 0- No response 1- None - guest 2- \$5-10 3- \$11-15 4- \$16-20 5- \$21-30 6- Over \$30 7- Annual membership fee
11	7	Traveling time: 0- No response 1- One-half hour or less 2- One-half to 1 hour 3- Over 1 hour to 1½ hours 4- Over 1½ hours to 2 hours 5- Over 2 hours to 3 hours 6- Over 3 hours
12-13	7	Actual traveling time in decimal fractions of hours.
14	8	Number in party: 0- No response 1- Alone 2- Two people 3- Three people 4- Four people 5- Five or more people
15	9	Quality of dogs: 0- No response/used own dog 1- Excellent 2- Good 3- Fair 4- Poor 5- Very poor

<u>Column Number</u>	<u>Question Number</u>	<u>Punching Instructions</u>
16	10	How they found out about favorite preserve: 0- No response 1- Newspaper 2- Magazine 3- Road sign 4- Friend 5- TV-radio 6- Sportsmen's club 7- Personal contact with owner 8- Dept. of Natural Resources 9- Multiple response
17	11	Kinds of preserves visited: 0- No response 1- Commercial-general public (A) 2- Commercial-members & guests (B) 3- Strictly private (C) 4- A + B 5- A + C 6- B + C 7- A + B + C
18	12	Services offered: 0- No response 1- Yes-no reason given/none used 2- No 3- Yes-skeet or trap 4- Yes-family type facilities 5- Yes-fishing 6- Yes-food 7- Yes-more than one activity
19	13	What needs improving: 0- No response 1- Cover or shooting lanes 2- Dogs 3- Guides 4- Game birds 5- Method of bird release 6- Location and/or management of preserve 7- Costs 8- Multiple response 9- None

<u>Column Number</u>	<u>Question Number</u>	<u>Punching Instructions</u>
20	14	<p>Were hunts enjoyable:</p> <p>0- No response</p> <p>1- Always</p> <p>2- Mostly</p> <p>3- Sometimes</p> <p>4- Seldom</p> <p>5- Never</p> <p>6- Multiple response</p>
21	15	<p>Rating of Michigan shooting preserves:</p> <p>0- No response</p> <p>1- Excellent</p> <p>2- Good</p> <p>3- Fair</p> <p>4- Poor</p> <p>5- Very poor</p> <p>6- Multiple response</p>
22	15	<p>0- No reason given</p> <p>1- Long season</p> <p>2- Abundant game birds</p> <p>3- Opportunity to enjoy dog work</p> <p>4- Much action in short time</p> <p>5- Fewer hunters or safe hunting</p> <p>6- Combination of above factors</p> <p>7- Negative response: did not like it</p> <p>8- Negative response: too expen.</p> <p>9- Negative response: not like natural hunting</p>
23	16	<p>Why did you hunt at a preserve:</p> <p>0- No response</p> <p>1- Recreational opportunities for family and/or self</p> <p>2- Lack of birds during open season</p> <p>3- Opportunity to enjoy dog work</p> <p>4- Entertaining business or friends</p> <p>5- Convenience</p> <p>6- Regular season closed in home state</p> <p>7- Invited guest</p> <p>8- Longer season</p> <p>9- Multiple response</p>

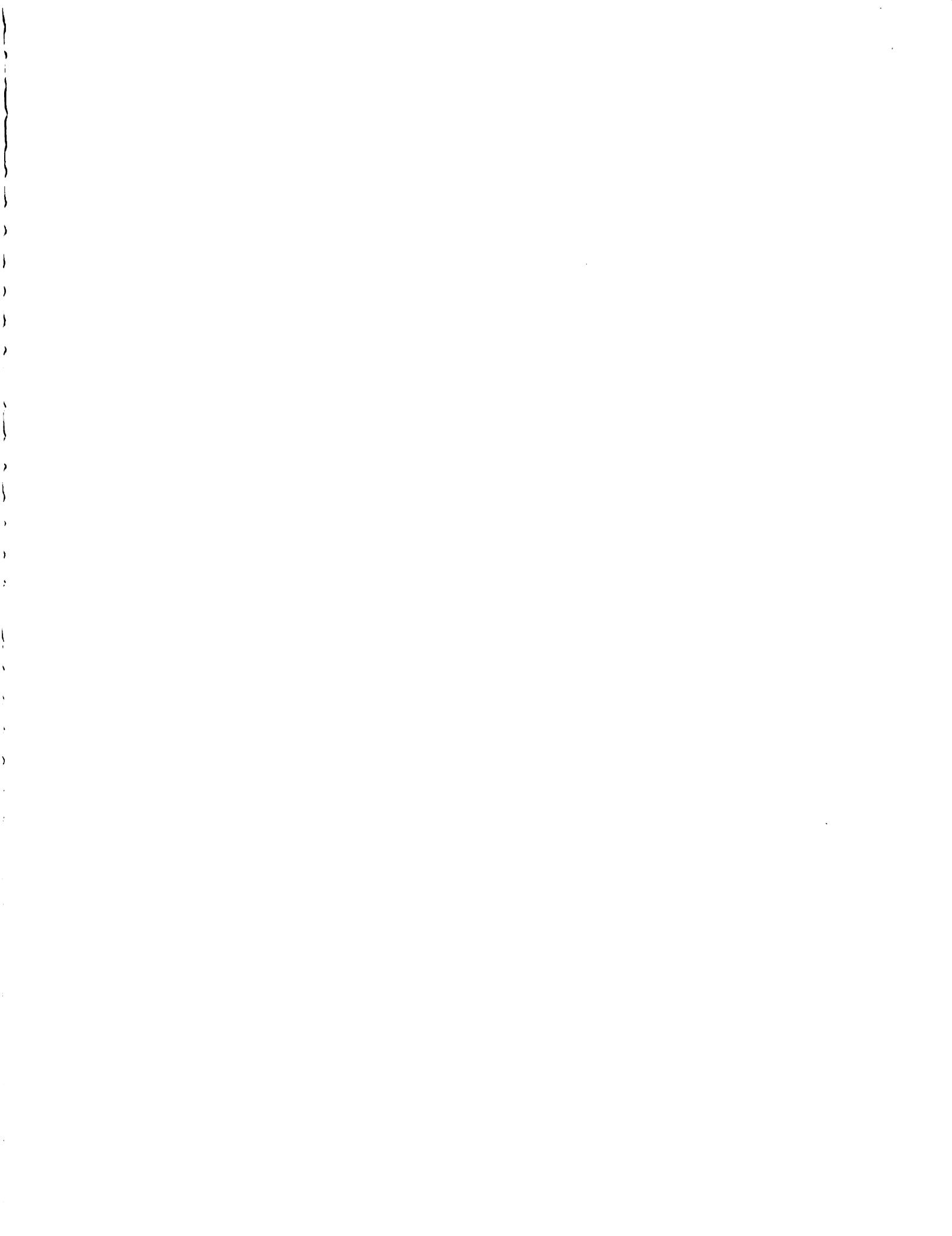
<u>Column Number</u>	<u>Question Number</u>	<u>Punching Instructions</u>
24	17	0- No response 1- Yes-no reason given 2- Yes- lack of available hunting land and birds 3- Yes-poor hunting on pub. land 4- Yes-poor game management by state 5- Yes-longer season is offered 6- Yes-convenience involved 7- No-no reason given 8- No-too expensive 9- Uncertain
25	18	Open season data: 0- Yes 1- No
26	18	0- Rabbit 1- Does not hunt rabbit
27	18	0- Pheasant 1- Does not hunt pheasant
28	18	0- Deer 1- Does not hunt deer
29	18	0- Woodcock and/or grouse 1- Does not hunt woodcock and/or grouse
30	18	0- Waterfowl 1- Does not hunt waterfowl
31	18	0- Squirrel 1- Does not hunt squirrel
32	18	0- Fox 1- Does not hunt fox

<u>Column Number</u>	<u>Question Number</u>	<u>Punching Instructions</u>
33	18	Open season data: 0- Small game only, more than one species 1- Both big and small game 3- None of the above 4- Big game only
34-35	19	Hunting experience: Actual years of hunting experience.
36	19	Hunting experience: 0- No response 1- Ten years or less 2- Eleven to 20 years 3- More than 20 years
37	20	Introduction to hunting: 0- No response 1- Parent 2- Spouse 3- Uncle or other relative 4- Friend 5- No one 6- Multiple response
38	21	Amount of hunting: 0- No response 1- Yes 2- No-no reason given 3- No-too busy or not enough time 4- No-lack of game 5- No-access problem 6- No-season too short 7- No-too expensive 8- No-Multiple response (combination of reasons)

<u>Column Number</u>	<u>Question Number</u>	<u>Punching Instructions</u>
39	22	Children hunting: 0- No response 1- No 2- Yes-preserve 3- Yes-public or farmland 4- Yes-both 5- Yes, but does not say where
40	23	Out-of-state hunting: 0- No response 1- No 2- Yes-have hunted out-of-state preserves 3- Yes-but have not hunted out-of-state preserves
41	24	Family income: 0-No response 1- Under \$3,000 2- \$3,000 - 5,999 3- \$6,000 - 7,999 4- \$8,000 - 9,999 5- \$10,000 - 14,999 6- \$15,000 - 24,999 7- Over \$25,000
42	25	Marital status: 0- No response 1- Yes 2- No
43	26	Sex: 0- No response 1- Male 2- Female
44-45	26	Age: Actual years of age of hunter.

<u>Column Number</u>	<u>Question Number</u>	<u>Punching Instructions</u>
46	26	Age: 0- No response 1- 19 or under 2- 20 to 24 3- 25 to 34 4- 35 to 44 5- 45 to 54 6- 55 to 64 7- 65 or over
47	27	Education: 0- No response 1- One to 7 years 2- 8 years 3- 9-11 years 4- 12 years 5- 13-15 years 6- 16 years 7- 17 or more years
48-49	27	Education: Actual years of formal education completed.
50	28	Started hunting: 0- No response 1- Grade school 2- Junior high 3- High school 4- After high school 5- After 26 years of age
51	29	Occupation: 0- No response 1- Professional or proprietor 2- Skilled craftsman 3- Semi-skilled laborer 4- Farmer 5- Sales worker 6- Manager, clerical, executive 7- Service worker 8- Retired 9- Student, unemployed, other

<u>Column Number</u>	<u>Question Number</u>	<u>Punching Instructions</u>
52	30	Residence: 0- No response 1- Farm or country 2- Small city 3- Medium city 4- Large city
53	--	0- Owner or part owner of preserve 1- Not an owner of preserve



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