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A STUDY OF SOUTHEASTERN MICHIGAN'S LANDOWNERS WILLINGNESS TO ALLOW PUBLIC ACCESS ONTO THEIR LANDS

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A STUDY OF SOUTHEASTERN MICHIGAN LANDOWNERS' WILLINGNESS TO ALLOW PUBLIC ACCESS ONTO THEIR LANDS

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ABSTRACT

A STUDY OF SOUTHEASTERN MICHIGAN'S
LANDOWNERS WILLINGNESS TO ALLOW PUBLIC
ACCESS ONTO THEIR LANDS

by

MARK JOSEPH LEGENDRE

In a 1981 study of 394 private landowners in southern lower Michigan, landowners from four urban counties were significantly less likely to allow access for hunting or snowmobiling than control landowners from the remaining less urban counties. Urban landowners owned smaller parcels than control landowners, were older and reported a higher percentage of incomes above the state median of $18,000. Both urban and control landowners generally confined public access to family and friends with less than twenty percent of all landowners wishing to participate in a government sponsored public access program citing fear of government infringement and preferring to select who used their land. Control and urban landowners who refused hunting or snowmobiling access cited concern over property damage and potential liability. Forty percent of all landowners would participate in a government sponsored public access program under certain conditions, namely protection from lawsuits, tax incentives and control over when their lands are used.

This thesis is dedicated to my wife Lori and longtime friend Ken. Their support was instrumental in the completion of this study.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

INTRODUCTION

Clayne R. Jensen (1978), author of Outdoor Recreation in America, believes that the United States is facing a crisis regarding the future supply of outdoor recreation. He argues that the social forces of economic and population growth, coupled with increasing rates of mobility and leisure, have fueled an increasing demand for recreational goods and services. In spite of strong efforts made by public resource agencies to keep pace with this demand, outdoor recreation resources have become heavily used. So used Jensen argues, that the rural outdoor environment has been lost.

This consumptive trend will be difficult to reverse on public lands. Many of the nation's professionals in outdoor recreation believe the role of government has reached its peak as a supplier of outdoor recreation opportunities. Taxpayers are refusing to accept tax increases and forcing departmental struggles over the shrinking appropriated dollar. Unfortunately, recreation services tend to have a low revenue return and thus are toward the lower end of legislative appropriations.

The high cost of land acquisition further reduces the availability of open space lands. In a 1979 study of rural real estate markets, Mary K. Watson noted a large demand for rural parcels. This demand is largely composed of developers

who look to farmland as areas which can be subdivided and sold directly to private individuals. Public agencies can therefore, be placed in the situation of competing with private developers for open lands.

These factors had led to a call by professionals for a study of private lands for recreation. In an address to the 34th North American Wildlife and Natural Resources Conference, James Durell (1969) cited the overcrowding on hunting preserves and called for a better understanding of hunter-landowner relationships. Stoddard and Day (1969), noted that three-quarters of our nation's land was held by private landowners and called for public agencies to find suitable arrangements between private landowners and public agencies. Research of private landowners located near urban areas is of critical importance. Citing that over 80% of the United States population will be living in and near urban areas by the year 2000, Myers and Kerr (1974), called for greater emphasis on outdoor recreation facilities and research near these population centers.

The State of Michigan exhibits many of the factors and problems associated with recreation nationally. According to the 1980 Agricultural Abstracts, over 6.6 million acres of public land exists within Michigan in the form of federal, state and local ownership. Ninety-five percent of this acreage is located in northern Michigan, four percent in southern Michigan and only one pecent in southeastern Michigan, where the majority of the population lives. The lack of public

recreational land in southern Michigan has placed a demand on private lands. In a study of participation by southern Michigan recreationists, Holecek, Willis and Allen (1979) found that the private sector is an important provider of several recreation opportunity categories. The private sector provided for 99% of gardening participation, 56% of hunting, 47% of fishing and 87% of horseback riding participation.

The role of the private sector as a supplier of recreation opportunities has sparked renewed interest by authorities in Michigan. In a report from the Land Use Commission (1971) to then Governor William Milliken the commission called for more public open space lands and the determination of how private lands can be better utilized to meet the demand of recreationists, particularly in the southeastern Michigan area.

Study Objectives

The basic objective of this study was to examine private farmland owners in southeastern Michigan. This examination includes their lands, public access to their lands and the influence of proximity to an urban centers on their attitudes toward public access. The study is exploratory and intended to facilitate the Michigan Public Access Stamp Program and possibly similar programs in the future.

According to Feltus (1979), the Michigan Department of Natural Resources' Public Access Stamp (PAS) program was conceived and designed to combat the increasing scarcity

of hunting lands. The program acquires easement rights to private lands in Zone III, the southern third of Michigan. Landowners are paid by the DNR's Wildlife Division to allow public hunting on their lands.

This study's specific objectives are to:

1. Identify differences between owners of private property located near major urban centers and owners located at a distance from major urban centers, identify characteristics of these landowners and identify their attitudes toward public access.
2. Determine the general extent landowners allow or exclude recreationists from their lands and their reasons for their actions.
3. Identify for what specific types of recreation, landowners will allow public access.
4. Determine landowners' receptiveness to governmental incentive programs designed to increase public access to private lands.
5. Determine if size of landholding significantly influences an owner's attitude toward allowing recreation.
6. Examine why some landowners allow recreation by the public for free but are unwilling to participate in government sponsored public access programs whereby they would receive payment for allowing public access.
7. Determine if landowners are interested in pooling

their lands with neighboring landowners to form a public recreation cooperative.

Organization of the Thesis

The remainder of the study is divided into five chapters. Research pertinent to background information on the general topic of public access to private land is presented in Chapter II. The hypotheses postulated and the research methodology are outlined in Chapter III. The general findings of the study and the testing of he hypotheses are discussed in Chapters IV and V respectively. The conclusions and recommendations will be related in Chapter VI.

CHAPTER II

PREVIOUS RESEARCH

Research on private landowners and public access to private lands for recreation are reviewed in this chapter. A majority of the early public access research concerned small tract lands away from large metropolitan areas and focused on landowner characteristics. This review of previous research will be divided into two sections. Socio-economic characteristics of landowners, including information pertaining to their lands will be reviewed in the first section. Owners' attitudes concerning public access are reviewed in the second section. Several studies will be presented in both sections.

Landowner Characteristics

In a study of 100 large non-corporate forest landowners in East Texas, Shilling and Bury (1973) found that approximately 75% of respondents were over 50 years of age, were self-employed, and worked more than 40 hours per week. Approximately one-half of those interviewed earned in excess of $20,000 annually after taxes. The respondents owned a total of 771,681 acres of land in East Texas, with eighty-three percent of all lands forested.

In a study of 200 new Pennsylvania landowners owning more than 50 acres, Turner, Strauss, and Swandit (1973) found

these new buyers to average 50 years of age. Forty percent of respondents were professionals, 40% were wage-earners and 20% were farmers. More than half of the landowners had incomes exceeding $10,000 and half spent all or most of the year living on their land.

In a study of 235 New York landowners who participated in the Agricultural Stabilization and Conservation Service (ASCS), Public Access Program, Brown and Dawson (1974) found participants to have a mean age of 52 years. Ninety-two percent of the respondents were from a rural or village background and had completed a high school education. Nearly half of the ASCS participating landowners were dependent upon farming for their major source of income. Eighty-eight percent of respondents resided on their property.

A study of 600 South Carolina landowners by Townsend (1975) found the average farm acreage size to be 156 acres and the average landowner age to be 67 years. The bulk of this acreage (62%) was in row crops and 29% was forested. Twenty-two percent of respondents had at least one pond suitable for fishing or swimming.

In a study of 195 landowners in Kent County, Michigan, Holecek and Westfall (1975) found that the mean parcel size was 47.6 acres. The mean age of respondents was 53.8 years with an average education of 11.6 years. "Farmer" represented the largest occupational category (28.9%) followed by "craftsmen" (17.2%) and "retired" (12.2%).

In a nationwide study of non-corporate landowners, Cordell

(1979), found landowners' average age class was 51 to 60 years of age. Over half of the respondent landowners (57%) indicated an income of $15,000 or more. "Farming" was indicated by 42% of respondents as their occupation category and 20% indicated their occupation as "professionals".

In a study of 609 participants in the Michigan Public Access Hunting program, Feltus (1978) found the average age of all participants to be 57.6 years. Over one-third of the participants indicated their income was above the 1980 state median of $18,000. Farming accounted for approximately 36.7% of this income.

Landowner Attitude Toward Public Access

Several studies conducted by state agencies and universities during the period of 1968 to 1981 addressed the problems of public access to private lands. In a study of 180 Illinois cooperatives, McCurdy and Echelberger (1968), found four types of cooperatives namely shooting preserves, wildlife hunting areas, general hunting areas and private hunting clubs. In all cases, the lessor required a payment for the use of their property. Half of the lessors were paid below one dollar per acre per season. The other 50% received up to five dollars per acre per season. Nearly all lease arrangements contained a compensation clause for damages. Other conditions generally found in lease arrangements were liability protection and conservation of wildlife habitat.

In a study of 912 landowners in the thumb area of

Michigan, Parker (1970) found a direct relationship between the size of a parcel and landowner interest in fee hunting. In the acreage size class between 50 and 139 acres, 26% of the respondents were interested in fee hunting. For the 140 to 259 acres size class, 39% of respondents were interested in fee hunting. Forty-eight percent of respondents in the 260 to 499 acres size class were interested in fee hunting, and 56% of respondent landowners who owned 500 acres or more were interested in fee hunting. Enforcement of trespassing, game law protection and reduction of property damage were incentives frequently reported by respondents that would influence their decision to participate in hunting programs.

In a study of 1,684 landowners from three New York counties, Brown (1971) found that 97% of those landowners who posted their land did so because they or their neighbor had a bad experience with recreationists. Respondent landowners were divided into two classes, those landowners with urban backgrounds and those landowners with rural backgrounds. Brown noted landowners with urban backgrounds were an increasing percentage of total farmland owners. The study also indicated that landowners with urban backgrounds allow hunting more frequently (43%) than landowners with rural backgrounds (14%). In the Holecek and Westfall (1975) study mentioned earlier, it was found that the majority of respondent sample landowners allowed, if requested, hiking, hunting and snowmobiling. It was found that landowner willingness to allow public access for a recreational activity was inversely related

to the intensity of the activity. The authors ranked hiking as a low intensity activity and snowmobiling as a high intensity activity. Only 16.2% of respondent sample landowners refused to allow public hiking while 41.1% of respondents refused to allow snowmobiling. No socio-economic differences were found between respondent sample landowners who allowed two of the recreational activities and owners who allowed none or only one of the activities.

As mentioned earlier, in a nationwide study of outdoor recreation conducted by Cordell (1976), it was found that 63% of non-corporate landowners permitted hunting on the lands they designated as generally open to public use. Other activities allowed by non-corporate owners were hiking, fishing, horseback riding and snowskiing. Four major reasons were given by the non-corporate landowners for not allowing the general public to use their land namely: property damage, privacy, interference with other land uses and protection of wildlife. Of those non-corporate landowners who closed their lands, only five percent indicated they would allow access if a fee were paid. Fifteen percent indicated they would open their lands if protected from lawsuits and 13% agreed to open their lands if they could make a profit from public access.

In a study of southern forests and rangeland, Cordell (1979) found that 88% of the land is in private or non-corporate ownership with the remainder of forest and rangeland in corporate ownership. Southern corporate lands are opened for public use to better public relations (33.0%) and because

they too much trouble to close (15.4%). Non-corporate land is also opened to better public relations (33.0%) and because they are too much trouble to close (22.8%). Corporations reported closing their lands because: recreation interferes with current uses (30.0%), vandalism (15.4%) and privacy (10.8%). Non-corporate lands were closed: to preserve privacy (22.3%), because recreation interferred with current land uses (17.6%) and vandalism (14.4%). Respondents who had closed their lands to the public were asked under which circumstances they would open their lands. Twenty-nine percent of corporate landowners and 39% of non-corporate owners who had closed their lands, indicated that under no circumstances would they allow access. Thirty-eight percent of corporate landowners and 28% of non-corporate landowners who had closed their land would consider opening acreage if they could make a profit or if the government provided monetary incentives. Finally, if liability protection were provided, 15% of corporate and 22% of non-corporate landowners would open their lands to the public.

In the Feltus (1979) study mentioned earlier, of those landowners who participated in the Michigan Public Access Hunting Program, 77% allowed public hunting prior to entry into the program. Feltus divided respondents into two groups, urban fringe or non-urban fringe and found that approximately a third of both landowner groups had a significant problem with recreationists. Urban fringe landowners cited a higher percentage of problems with property damage (18.5% vs. 15.3%)

and litter (29.6% vs. 22.1%) than non-urban fringe landowners after entry into the program. Non-urban fringe landowners cited a higher percentage of trespassing problems (42.8% vs. 40.7%) than urban fringe landowners after program entry.

In a study of 252 landowners residing adjacent to Michigan Public access landowner participants, Lineback (1980) found that 17.0% of landowners indicated they were interested in becoming public access participants. If asked, 24.5% of respondents indicated they would allow no recreation activity. Two-thirds of the remaining landowners indicated they would allow hunting and one-third would allow snowmobiling if asked. The study also indicated 22.6% of all respondents reported an increase in the number of hunter related problems since their neighbors joined the public access program. These problems included trespassing (16.0%), property damage (10.0%) and littering (8.0%).

In summary, the studies noted respondent landowners were generally between 50 and 60 years of age with the majority having incomes exceeding $15,000. Respondents' incomes were divided among several sources, with the highest category being farming. Posting of lands appears to be increasing, especially near urban areas. As posting increases among landowners, the chance for public access is limited. Landowner complaints against recreationists appear on the rise, with trespassing and vandalism as major complaints cited by owners. Activities that are more passive in nature appear to be acceptable to landowners.

There are several limitations to the literature cited. Few of the studies specifically address landowners located near urban areas. Previous studies fail to examine any effects that the urban area has on landowners' attitudes toward allowing public access. Detailed comparisons between urban and rural landowners are needed in further research studies. Research is needed on passive recreation activities and profit oriented activities. The research that appears in the following chapters was designed to take advantage of previous studies on public access but addresses some questions not answered by earlier efforts.

CHAPTER III

HYPOTHESES AND RESEARCH

Two perspectives of the distance between a landowners' parcel and an urban area are discussed in the first of four sections in this chapter. Also included in the first section is an examination of statistical differences between farmland in southeastern Michigan and farmland in the remaining southern Lower Michigan area. The definition of terms specific to this study and an explanation of statistical measures used are discussed in the second section. Hypotheses to be tested are outlined in the third section. These hypotheses examine the availability of public access to private lands. Each hypothesis was developed after reviewing the public access to private lands literature and was designed to expand the knowledge of this subject. In the fourth section, the research methodology employed is explained. The research methodology includes descriptions of: the study area, sample selection procedures, survey instrument development with pretesting, response rate and data analysis procedures.

Perspectives of Distance

Landowners' acceptance of public access could be influenced by their parcels' location with respect to an urban center (i.e. the distance between them). For the purpose of this study distance between a landowner's parcel and an urban center is viewed from two perspectives. One perspective involved

classifying landowners as urban or non-urban based upon the population of the county in which their parcels were located. The results of this selection process produced four urban counties of Wayne, Oakland, Macomb and Washtenaw. Landowners from these counties were classified as urban. The remaining counties in the Southern Lower Michigan area were then classified as non-urban. Owners' parcels in these counties were generally in non-urban areas and would serve as a control group for comparison to landowners of parcels in urban counties.

The second perspective of distance was to classify landowners based on the distance of their parcels from eleven selected major urban areas. The eleven areas included Ann Arbor, Battle Creek, Detroit, Flint, Grand Rapids, Jackson, Kalamazoo, Lansing, Muskegon, Saginaw and Pontiac. The selected parcels were then placed in one of ten distance zones. Each distance zone was five miles in length and overall ranged from zero to fifty miles from urban cities. These two perspectives of distance will be further explained in the research methodology section of this chapter.

Several statistical differences were reported between the urban counties of Wayne, Oakland, Macomb and Washenaw and the remaining less-urban Southern Lower Michigan counties, in the 1978 Census of Agriculture, USDA. These differences are reported in Table 1 and included the average size of farms per county, the average number of farms per county and the average percent of farmland per county. Urban county farms were smaller than those farms from non-urban counties in the average number of

Table 1.--Comparison of Average Number of Farms, Average Size of Farms, and Average Percent of County in Farmland Between Urban Counties of Wayne, Oakland, Macomb and Washtenaw and Remaining Non-urban Counties in Southern Lower Michigan.

Farm Characteristics	Urban Counties	Control Counties
Mean Number of Farms Per County	821	1,400
Mean Size of Farms (Ac.) Per County	120.0	179.5
Mean Percent of County in Agricultural Land	25.8	60.1

Source: 1978 Census of Agriculture, State and County Data for Michigan, U.S. Department of Commerce, Bureau of the Census Issued June 1981.

farms per county (821 farms vs. 1400 farms), the average size of farms per county (120.0 vs. 179.5 acres) and the average percentage of the total acreage in agriculture, (25.8% vs. 60.1%).

Farms in the four urban counties may be smaller due to the expansion of the surrounding urban areas. The Detroit News, a daily metropolitan newspaper, reported in a 1979 article that a shift of the urban population from the suburbs into the surrounding agriculture area is occurring. Ultimately, The Detroit News reported, the amount of land for farming is reduced in favor of urban expansion. If this urban shift has actually decreased the average size of southeastern Michigan farms, it

may have influenced the attitude of farmland owners toward allowing public access.

Based on the differences cited in the Census of Agriculture and the call by recreation authorities for more research near urban areas, this author decided to investigate: (1) the relationship between urban or rural farm properties and the attitudes of their owners toward allowing public access and (2) the relationship between parcel size owned and the attitude of owners toward allowing public access.

Definition of Terms

Landowners' attitudes were defined as respondents' willingness to allow public access to their property for hunting or snowmobiling. Respondent landowners who allowed either hunting or snowmobiling were classified as having a favorable attitude for that activity. Respondents with favorable attitudes were then asked to identify who was allowed to use their parcel by selecting from five user groups. These groups included family, friends, relatives, anyone who asks and anyone whether they ask or not. Respondents who refused to allow hunting or snowmobiling were classified as having a negative attitude toward public access for that activity. Respondents with negative attitudes were then asked to select from eleven categories which best matched their reasons for refusal.

For the purpose of this study, parcel size was defined as the size, in acres, of the largest parcel owned by the respondent. Parcel size was divided into two groups, large and small,

for the purpose of statistical testing. Large parcels were defined as those of 120 acres or larger based on the mean parcel size reported in the 1978 Census of Agriculture for urban counties. For the purpose of comparison, small parcels were defined as those with a total acreage between 30 acres, the set minimum and 60 acres. A small acreage minimum was set for this study so that parcels smaller than 30 acres would not be sampled. Parcels under 30 acres may not be adequate for certain types of recreation such as snowmobiling, hiking and cross-country skiing, thus they were eliminated in the interest of focusing on properties with greater potential for providing recreation opportunities. Since parcels from 61 to 119 acres in size could have characterized of both small or large parcels, they were not selected for hypothesis testing in order to isolate the influence, if any, of parcel size on variables of interest.

Three statistical tests were used in the investigation of the data collected. These tests included Chi-square, Kendall's tau and One-way analysis of variance. Chi-square is a frequently used test of significance in survey research (Babbie 1973) and is based on the assumption that there is no relationship between the selected variables in the total population (called the null hypothesis). Chi-square is obtained by taking the square of the difference between the observed and expected frequencies in each cell. This figure is divided by the expected number of cases in each cell and then summed to form the value of Chi-square (Blalock 1972). The larger the differences between observed and expected frequencies, the larger will be the value

of Chi-square.

While Chi-square measures the significance of a relationship, the Kendall's tau statistic determines the strength of a relationship. Kendall's tau is calculated by comparing all the possible pairs of cases and noting whether or not the ranks are in the same other (Blalock 1972). A value of +1.0 is assigned for pairs that are ordered in the same way and -1.0 for oppositely ordered pairs. These comparisons are summed, and then divided by the maximum possible value that they could have to calculate Kendall's tau.

One-way analysis of variance allows users to statistically test whether the means of subsamples into which the sample data are broken are significantly different. The between groups mean square is compared with the within groups mean square (called the F-ratio). Then, depending on the significance level, the user can accept or reject the null hypothesis (SPSS manual 1980). A significance level of 0.05, was used in all tests. When the significance value was greater than 0.05 the null hypothesis was accepted and when the value was less than 0.5 the null hypothesis was rejected (Babbie, 1973).

Hypotheses to be Tested

Hypothesis 1: The Influence of Distance on Landowners' Attitudes Toward Allowing Public Access.

As previously stated, distance was defined in two ways. First, each respondent was defined as "urban" or "control", with urban respondents owning farmland located in the urban

counties of Wayne, Oakland, Macomb and Wastenaw. Control respondents were those landowners with parcels in the remaining non-urban southern Michigan counties. Secondly, the sample parcels were placed in one of ten distance zones, based on the parcel's distance in miles from the nearest major urban area. Landowner attitudes toward public access were measured by an owner's willingness to allow public hunting or snowmobiling on their parcel if requested. Distance, as previously defined, was cross-tabulated against landowner attitudes to determine if a significant relationship existed. The hypotheses were tested using the Chi-square and Kendall's tau method of analysis. A conceptual and operational form of each hypothesis are presented.

Conceptual Hypothesis 1.--Landowners' willingness to allow access for hunting or snowmobiling are related to their parcels' distance from major urban areas.

Operational Hypothesis 1a.--Owners of parcels located in control counties (e.g. more rural) will be more willing to allow hunting or snowmobiling than owners of parcels in urban counties.

Operational Hypothesis 1b.--There will be a corresponding increase in the percentage of landowners who allow hunting or snowmobiling as distance zones increase from major urban areas.

Hypothesis 2: The Influence of Distance on the Type of User Groups Allowed.

As previously noted, each landowner who allowed hunting or snowmobiling indicated who was allowed by checking one or

more of five user groups. These groups included: immediate family, friends, relatives, anyone who asks and anyone whether they ask or not. The anyone who asks user group was cross-tabulated against the urban and control landowners' willingness to allow hunting or snowmobiling. This user group was also cross-tabulated against the distance parcels were located from major urban areas. The hypotheses were tested using the Chi-square method of analysis and Kendall's tau.

Conceptual Hypothesis 2.--The user groups allowed onto landowners' parcels are influenced by the parcels' distance from major urban areas.

Operational Hypothesis 2a.--Owners of parcels located in control counties will be more willing to allow the anyone who asks user group to hunt or snowmobile than owners of parcels located in urban counties.

Operational Hypothesis 2b.--There will be a corresponding increase in the percentage of landowners allowing the anyone who asks user group as distance zones increase from major urban areas.

Hypothesis 3: The Influence of Distance on What Respondents' Believe Should Be Offered to Landowners Who Allow Public Access.

According to Dwight McCurdy and Herbert Echelberger (1968), several private landowners in the states of Michigan, Illinois and Indiana charge for recreational use of their lands. For

the purpose of this study, urban and control respondents were asked to indicate the dollar charge landowners in general should be offered to permit hunting or snowmobiling. The charge would be on a per season or per year basis. The dollar charge suggested by landowners for public access was cross-tabulated against distance, as previously defined. One-way analysis of variance using the T-test was used in the analysis.

Conceptual Hypothesis 3.--The charges suggested by landowners for public access are influenced by the parcels' distance from major urban areas.

Operational Hypothesis 3a.--Owners of parcels located in control counties will suggest smaller compensation for hunting or snowmobiling access than owners of parcels in urban counties.

Operational Hypothesis 3b.--There will be a negative relationship between the charges suggested by landowners for hunting or snowmobiling as the distance zones increase from major urban areas.

Hypothesis 4: The Influence of Size of Ownership on Landowners' Attitudes Toward Allowing Public Access.

As previously cited Parker (1970) found a direct relationship between the size of parcel and the landowner interest in allowing hunting. Small properties are generally less suitable for hunting and snowmobiling than are larger properties. The owners of smaller properties may be less willing to permit others on their lands because their presence may interfere with agricultural uses.

As previously defined, parcel size was divided into two subgroups, large and small. Landowners with a total acreage between 30 acres, the set minimum, and 60 acres were classified as small owners. Landowners with more than 120 acres were classified as large owners. The large and small groups were cross-tabulated against landowners' willingness to allow hunting or snowmobiling. The Chi-square and Kendall's tau statistics were used for testing the hypotheses.

Conceptual Hypothesis 4.--Landowners' willingness to allow access for hunting or snowmobiling is related to parcel size.

Operational Hypothesis 4.--Owners of parcels in the large acreage group will be more willing to allow hunting or snowmobiling than owners in the small acreage group.

Hypothesis 5: The Influence of Size of Ownership on the User Groups Allowed.

Those landowners that allowed hunting and snowmobiling indicated who was allowed by checking one or more of five user groups. These user groups included immediate family, friends, relatives, anyone who asks and anyone whether they ask or not. Each group allowed to hunt or snowmobile was cross-tabulated against the two parcel groups to determine if size influenced the user groups allowed. The hypothesis was tested using the Chi-square method of analysis and Kendall's tau.

Conceptual Hypothesis 5.--The user groups allowed onto landowners' parcels are influenced by parcel size.

Operational Hypothesis 5.--Owners of parcels in the large

acreage group will be more willing to allow the anyone who asks user group to hunt or snowmobile than owners of parcels in the small acreage group.

Hypothesis 6: The Influence of Size of Ownership on What Respondents Believe Should be Offered to Landowners Who Allow Public Access.

All respondent landowners were asked to suggest the dollar charge they believe landowners should require for permiting hunting or snowmobiling. The dollar charge suggested by each landowner was then compared to parcel size to determine if any relationship existed. One-way analysis of variance was used in the analysis.

Conceptual Hypothesis 6.--The charge suggested by landowners for the use of their lands for recreation is influenced by parcel size.

Operational Hypothesis 6.--Owners of parcels in the large acreage group will suggest a smaller dollar amount for landowners who permit hunting or snowmobiling than owners of parcels in the small acreage group.

Research Methodology

The design of the study included the following steps: (1) selecting an appropriate sample area in Michigan, (2) Selecting an acceptable sample of landowners in that area, (3) developing an efficient and effective survey instrument to obtain the data required to test the hypotheses, including pretesting and

developing a strategy to minimize non-response and (4) analysis of returned questionnaires and data processing. Each step is discussed in more detail below.

Description of Study Area

Although classified as an industrial state by the Governor's Commission on Land Use (1971), Michigan contains a large amount of private farmland. Nearly 10%, over 1 million acres of Michigan's farmland, is located in the southeastern portion of the state and could be available for recreation (1980 Michigan Agricultural Abstracts). As noted in Chapter 1, public acreage for recreation is scarce in southeastern Michigan. Recreationists in this region are forced to the northern portions of the state for access to public lands. Recreationists who elect to remain in southeastern Michigan are forced onto relatively crowded public lands or to seek out private landowners willing to permit them to hunt, snowmobile, etc. Based on this public land disparity and previous research studies of Holecek and Westfall (1975), Feltus (1979) and Holecek and Lineback (1980), this research effort was designed to concentrate on the availability of private lands for public access in southeastern Michigan.

As previously stated, one research goal was to examine any effects urbanization has on southeastern Michigan landowners' willingness to allow public access. A delineated urban area then needed to be selected that would serve as the private urban lands from which to select sample landowners. The remaining southern lower Michigan area would function as the control area from which non-urban landowners would be selected. The purpose

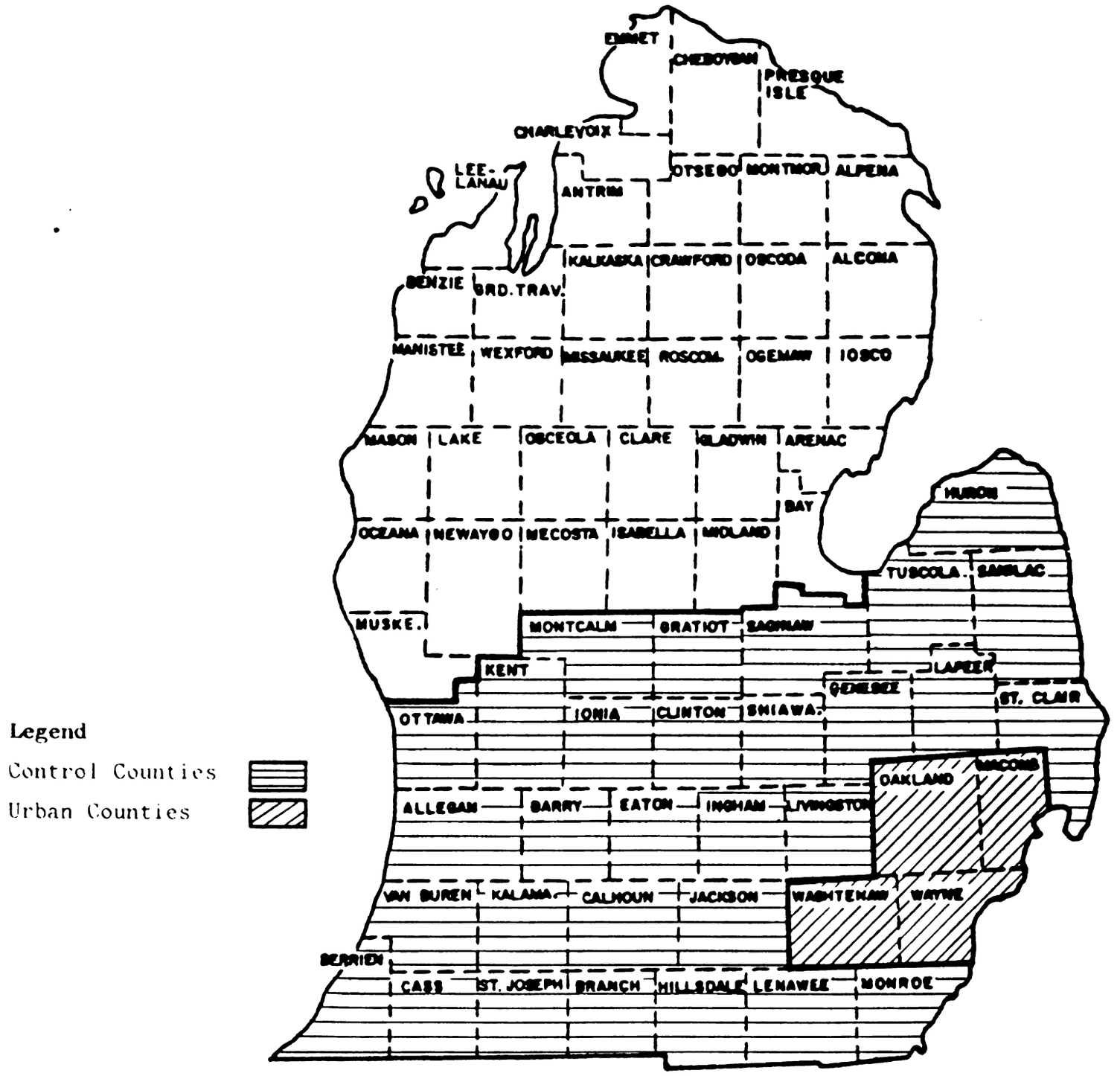
of the selection process was to identify unique problems associated with public access to private urban lands.

As previously noted, the southeastern Michigan area is a highly urbanized region containing the counties of Wayne, Oakland, Macomb, Washtenaw, Monroe, Livingston, and St. Clair. The 1980 census indicated that these seven counties contained over five million people or nearly 60% of Michigan's population. Wayne, Oakland, Macomb and Washtenaw counties were the most densely populated of the seven counties containing 4.5 million people or nearly 50% of Michigan's total population. These four counties have 50% or more of their land classified as urban by the Michigan Agricultural Abstracts (1980). Livingston, Monroe and St. Clair counties have less than 50% of their land reported as urban. As previously cited farms in these four urban counties statistically differ in average size and number from farms in the remaining southern Michigan counties. Thus, the four counties of Wayne, Oakland, Macomb and Washtenaw were selected to serve as the private urban land sample base. The remaining 30 counties that comprise southern lower Michigan would function as the private control land sample base (Figure 1).

Sample Selection Procedure

Once the study areas were determined, it was necessary to select a sample of landowners from which to collect relevant information. This process involved compiling a sample frame, determining the appropriate sample size and selecting individual

Figure 1.--Delineation of the Urban Counties of Macomb, Oakland, Washtenaw and Wayne Versus the Thirty Control Counties in the Remaining Southern Lower Michigan Study Area.



sample units. Several sampling frames were studied including plat books, tax records, telephone directories and governmental mailing lists. A list of farmland owners provided by the Agricultural Stabilization and Conservation Service (ASCS) was eventually used as the sampling frame because of its accuracy, accessibility and low cost. The ASCS agency is a branch of the United States Department of Agriculture and is charged with the responsibility of cost-sharing on agricultural programs namely, conservation practices, facility and commodity loans, price supports, set aside programs, animal indemnity programs and disaster payments. Landowners who participate in ASCS programs are required to provide their addresses and are automatically placed on a county mailing list. A compilation of southern lower Michigan county mailing lists served as the sampling frame for this study. A limitation to the ASCS list is that each agricultural program has minimum requirements which exclude some landowners. A second limitation to the ASCS list is that some owners do not wish to participate in ASCS government programs and thus would not be available for sampling. It could be assumed that these owners would not participate in a public access program. The Michigan ASCS office estimates that over 95% of landowners, whose parcels are classified as agricultural by the 1980 Census of Agriculture, are listed on county mailing lists, hence any bias introduced by selecting the sample from the ASCS listing should be minimal and predictable.

A survey of Michigan landowners by Lineback and Holecek

(1980) achieved a 73% rate of response using a mailed questionnaire with a related set of questions and of about the same length as that developed for this study. Based on the larger sample population and the more general nature of this study, a 50% response rate was expected. A confidence interval of ±5% was selected assuming a 50% response rate. According to the U.S. Department of Commerce report on Research Methodologies (1978), 400 questionnaires are required to achieve the desired confidence intervals of ±5% for the urban and control groups. Since the time-lag existed between acquisition of the landowner list and actual mailing, 425 sample units were selected, recognizing that some landowners on the list would be non-samplable because of changes in ownership. Given the number of landowners provided by ASCS, and the number of sample units required, a systematic random sample was initiated to obtain a sample of 425 respondents for both the urban and control property groupings. Every 242nd individual landowner was selected from the list of control county landowners and every 11th individual from the urban county list.

Survey Instrument Development Including Pretesting

A mailed questionnaire was used as the survey instrument because of time and money constraints. A survey by phone or by personal contact, while less subject to nonresponse bias problems, would have been far too costly given the research budget available. The survey instrument was developed during the winter of 1979 and was pretested in Ingham and Monroe counties during the spring of 1980. Approximately 30 landowners

participated the pretest and several modifications were made to improve the instrument following pretesting.

The inherent limitation of a mailed questionnaire is a low response rate. This is partially due to landowners being "too busy" to complete it, but also because many individuals are suspicious of requests for information or simply lack the motivation to cooperate. In keeping with research resources available, the following steps were taken to obtain the maximum rate of response without undue harassment of respondents. First, the survey was mailed in late spring after the period of peak agricultural activity. The initial mailing included a cover letter explaining the purpose of the study, the importance of returning the questionnaire and assurance of confidentiality. (See appendix A) A reminder letter was mailed approximately two weeks later to non-respondents. (See B) Two weeks later another mailing, which also included a copy of the original questionnaire was made. Finally, six weeks after the initial mailing, attempts were made to reach each non-respondent by telephone, requesting that they return the questionnaire. If they refused to do so, an attempt to elicit response to one or two key questions was then made.

Response Rate and Data Analysis

Key survey response results are summarized in Table 2. Of the 424 surveys mailed to control respondents, 47 were not forwardable and six landowners had an ownership of under 30 acres, the set minimum. Of the remaining 371 delivered questionnaires, 261 were returned with 185 (49.9%) fully completed and

Table 2.--Breakdown of Sampling by County, Indicating Number of Questionnaires Mailed, Number Non-Forwardable, Number Actually Delivered and Number Returned.

Control Counties	Mailed Number	Non-Forwardable		Delivered Number	Returned		
		Owner Moved Number	Owns Less Than 30 Ac. Number		Partially Completed Number	Fully Completed Number	Percent
Allegan	19	2		17	2	15	88.2
Barry	9			9	1	6	66.7
Berrien	16	2		14	5	7	50.5
Branch	11			11	2	6	54.5
Calhoun	15	2		13	3	8	61.5
Cass	9	1	1	7		5	71.4
Clinton	14	2	1	7		5	54.5
Eaton	16	2		14	4	6	42.9
Genese	13	4		9	5	1	11.1
Gratiot	14			14	1	10	71.4
Hillsdale	16	2		14	4	6	42.9
Huron	18		1	17	4	10	58.5
Ingham	13	1		12	3	5	41.7
Ionia	13	2		11	4	4	36.4
Jackson	16	2	1	13	1	6	46.2
Kalamazoo	11	1		10		7	70.0
Kent	12	2		10		6	60.0
Lapeer	13	1		12	1	10	83.3
Lenawee	14	4		10	1	4	40.0
Livingston	6			6		2	33.3
Monroe	13	2	1	10	1	5	50.0
Montcalm	15	1		14	2	6	42.9
Ottawa	13	1		12	3	7	58.3
Saginaw	19	2		17	5	5	29.4
Sanilac	26	4	1	21	3	7	33.3
Shiawassee	13	1		12	3	4	33.3
St. Clair	18	3		15	4	4	26.7
St. Joseph	12	3		9	3	3	33.3

Table 2.--Continued

Control Counties	Mailed Number	Non-Forwardable		Delivered Number	Returned		
		Owner Moved Number	Owns Less Than 30 Ac. Number		Partially Completed Number	Fully Completed Number	Percent
Tuscola	15			15	2	6	40.4
Van Buren	12	1		11	2	8	72.7
Total	424	47	6	371	76	185	
					Control Counties Avg. Return		49.9
Urban Counties							
Macomb	68			68	11	35	51.5
Oakland	92	4		88	27	35	39.8
Washtenaw	219	9	1	209	20	126	60.3
Wayne	41	1	1	39	12	13	33.3
Total	426	14	2	416	70	209	
					Urban Counties Avg. Return		51.7

76 (20.5%) partially completed. Response rates ranged from a low of four fully completed surveys out of 15 delivered to St. Clair county respondents to a high of 15 fully completed surveys out of 17 delivered to Allegan county respondents.

There were 426 surveys mailed to the urban group with 14 not forwardable and two were eliminated because the property was under 30 acres. Of the remaining 416 questionnaires mailed, 209 (51.5%) were returned fully completed and 70 (17.0%) partially completed. Response rates ranged from a low of 13 Wayne county respondents returning the survey fully completed, out of 30 surveys delivered, compared to a high of 126 Washtenaw responses returning the questionnaire fully completed, out of 209 delivered. Analysis was completed using the SPSS program on Michigan State University's Control Data Systems 6500 computer. SPSS is a system of statistical techniques designed specifically for questionnaire analysis.

CHAPTER IV

GENERAL FINDINGS

The general findings are presented in three subsections titled: Characteristics of Sample Parcels, Characteristics of Respondents, and Attitude of Landowners Toward Public Access. Respondents are divided into urban and control groups, as explained in the Research Methodology chapter. This format will allow direct comparison between selected urban landowners in Wayne, Oakland, Macomb and Washtenaw counties with landowners selected from the remaining counties in southern lower Michigan.

Characteristics of Sample Parcels

As explained in the Research Methodology chapter, a parcel was defined on the questionnaire as a "plot of land larger than 29 acres in size or several adjoining smaller plots of land with a total acreage larger than 29 acres." Urban and control county respondents were asked if they owned more than one parcel as defined, and if so the total number of parcels owned. Their responses are shown in Table 3. Over two-thirds of urban respondents (68.7%) owned only one parcel compared to 60.1% of control respondents. Of those urban respondents who owned more than one parcel, 16.7% owned two parcels and 6.7% owned three parcels. Twenty-six percent of control respondents owned two parcels and 6.7% owned three parcels. Twenty-six percent of control

Table 3.--Reported Number of Separate Land Parcels Owned by Urban and Control County Respondent Landowners

Number of Parcels Owned	Urban County Landowners %	Control County Landowners %
1	68.7	60.1
2	16.7	26.0
3	6.7	7.0
4	1.8	3.1
5	1.1	1.3
6 or more	5.0	2.5
Total	100.0	100.0
Valid Cases	179	158
Non-Response	17	7
Median	1.0	1.0
Mean	1.64	1.67

respondents owned two parcels and seven percent owned three parcels.

The sample parcel acreage distribution of urban and control county respondents are given in Table 4. The urban landowner's median parcel size was 69.4 acres with a mean of 78.9 acres. The largest percentage of urban respondents (16.5%) owned parcels in the 40-49 acres size group. The control landowners median parcel was 79.9 acres, with a mean of 85.9 acres, and 27.4% of control respondents owned a parcel in the 80-89 acres size group.

All respondents were asked to classify their parcels into eight landcover/use types namely crops, woods, fields, pasture, marsh, buildings or roads, orchards/tree plantations and ponds. The percentage of urban and control county parcels breakdown by landcover/use types are shown in Table 5. The major difference between control and urban county landowner/use types are the percentage of crops reported. Nearly two-thirds of urban lands are used for crop production with a smaller amount set aside for woods (11.4%) and fields (7.2%). Control landcover/use types are more evenly divided between crops (25.8%), woods (22.4%) and fields (17.9%). Farmland in urban areas may be more heavily used for crops because of the smaller average size of parcels reported earlier. With a smaller land base, urban landowners may have to farm a greater percentage of their parcels to meet expenses.

All respondents were asked to state an approximate

Table 4.--Sample Parcel Acreage Distribution by Size Class for Urban and Control County Respondent Landowners.

Size Class	Urban County Landowners (%)	Cumulative (%)	Control County Landowners (%)	Cumulative (%)
30-39 (acres)	14.8	14.8	7.6	7.6
40-49	16.5	31.3	12.1	19.7
50-59	8.8	40.1	8.3	28.0
60-69	9.4	49.5	7.0	35.0
70-79	10.9	60.4	6.1	40.1
80-89	11.0	71.4	27.4	67.5
90-99	3.9	75.3	3.2	70.7
100-109	2.2	77.5	7.6	78.3
110-119	3.3	80.8	2.0	80.3
120-129	6.0	86.8	6.3	86.6
130-139	2.2	89.0	2.6	89.2
140-149	2.2	91.2	1.9	91.1
150 or more	8.8	100.0	8.9	100.0
Total	100.0		100.0	
Valid Cases	182		157	
Non-Response	14		8	
Median	69.6		79.9	
Mean	78.9		85.9	

Table 5.--Percentage Breakdown of Urban and Control County Respondents' Parcels by Landcover/Use Type.

Landcover or Use Types	Urban County Landowners (%)	Control County Landowners (%)
Crops	65.7	25.8
Woods	11.4	22.4
Fields	7.2	17.9
Pasture	6.7	11.6
Marsh	2.9	8.9
Building Roads etc.	3.0	7.2
Plantations/Orchards	1.8	1.5
Total	100.0	100.0
Valid Cases	182	157
Non-Response	14	8

distance from their parcel to the nearest listed metropolitan area. The areas listed on the questionnaire indluded: Ann Arbor, Battle Creek, Detroit, Flint, Grand Rapids, Jackson, Kalamazoo, Lansing, Muskegon, Saginaw and Pontiac. Distance of urban and control county respondents' parcels to the nearest metropolitan area are shown in Table 6. Urban landowners indicated a mean distance of 15.3 miles, compared to 29.7 miles for the control landowners. In summary, urban county respondents' parcels were smaller in size and fewer in number than control respondents' parcels. Urban county respondents' parcels had a larger percentage of their use devoted to crop production, and as expected were located closer to a major urban area than were those parcels owned by control respondents.

Characteristics of Respondents

The age distribution of urban and control county respondents is given in Table 7. Urban landowners ranged from 26 to 95 years of age with a median and a mean age of 57.5 years. The largest urban age group (25.3%) was in the 60-69 age class. Control respondents ranged in age from 27 to 87 years with a median age of 55.4 years and a mean age of 54.3 years. Nearly one of every three control respondents was within the 50 to 59 age class.

Urban and control county respondents were asked if their incomes were above or below the state median of $18,000, as cited by the Michigan Department of Commerce

Table 6.--Distance From Urban and Control Respondents' Parcels to Nearest Listed Metropolitan Area.

Distance to Metropolitan Area	Urban County Landowners (%)	Urban Cumulative (%)	Control County Landowners (%)	Control Cumulative (%)
1-9 miles	18.1	18.1	7.5	7.5
10-19	45.2	63.3	13.6	21.1
20-29	22.0	85.3	27.2	48.3
30-39	11.9	97.2	18.4	66.7
40-49	1.7	98.9	14.3	81.0
50-59	0.5	99.4	8.8	89.8
60 or more	0.6	100.0	10.2	100.0
Total	100.0		100.0	
Valid Cases	177		147	
Non-Response	19		18	
Median	17.1		32.6	
Mean	15.3		29.7	

Table 7.--Age Distribution by Class for Urban and Control County Respondents.

Age Class of Respondents	Urban County Landowners (%)	Urban Cumulative (%)	Control County Landowners (%)	Control Cumulative (%)
20-29 years	2.9	2.9	1.4	1.4
30-39	7.1	10.0	14.7	16.1
40-49	19.4	29.4	17.5	33.6
50-59	24.1	53.5	32.1	65.7
60-69	25.3	78.8	22.4	88.1
70-79	17.1	95.9	9.1	97.2
80 or more	4.1	100.0	2.8	100.0
Total	100.0		100.0	
Valid Cases	170		143	
Non-Response	26		22	
Median	57.5		54.3	
Mean	57.5		55.4	

(1980). Their responses are given in Table 8. Over half of the urban respondents (53.8%) indicated their incomes were over $18,000, compared to 45.9% of the control respondents. The percentage breakdown of incomes by four given sources are shown in Table 9. Respondents divided their incomes among four sources: non-agricultural income, farming income, retirement income and other income. Both respondent groups indicated approximately 40% of their incomes came from non-agricultural sources. The remaining portion of control respondents' income were divided among farming (37.4%) and retirement (15.2%). Twenty percent of the remaining income of urban respondents came from retirement and 29.6% from farming. In summary, urban county respondent's median age was younger than control county respondents, median income (compared to state average income) was higher than control respondents, and farming accounted for less of their total income than for control respondents.

Attitude of Landowners Toward Public Access

As explained previously, urban and control county respondents were asked a series of questions concerning their attitudes toward public access. Respondents were first asked if they allowed public hunting or snowmobiling. those respondents that allowed either activity were asked to indicate who was allowed to hunt or snowmobile and if the respondent would participate in a government sponsored public access program. The remaining respondents who refused

Table 8.--If Urban and Control County Respondents' Income Were Above or Below the 1980 State Median Income of $18,000.

Income	Urban County Landowners (%)	Control County Landowners (%)
Above	53.8	45.9
Below	46.2	54.1
Total	100.0	100.0
Valid Cases	173	148
Non-Response	23	17

Table 9.--Urban and Control County Respondents' Income Distribution Among Four Income Sources.

Income Sources	Urban County Landowners (%)	Control County Landowners (%)
Non-Agricultural	40.3	41.9
Farming	29.6	37.4
Retirement	20.0	15.2
Other	10.1	5.5
Total	100.0	100.0
Valid Cases	173	148
Non-Response	23	17

to allow hunting or snowmobiling were asked to indicate their reasons for refusal and if they would participate in a government sponsored public access program. All urban and control county respondents were asked five additional questions:

(1) if they would allow any other recreational activities;
(2) if they had an interest in commercial activities;
(3) under what conditions would they consider participation in a public access program;
(4) if they would favor a "cooperative lands" approach and
(5) the dollar charge they believe landowners should be offered who permit public access.

Several of the questions in this section were multiple-response type, meaning the respondents could check one or more categories per question. For example, respondents that allowed hunting if requested were asked to indicate who was allowed by checking up to five user groups. Statistical analysis of multiple response type questions are reported as percent of valid cases. Percent of valid cases are calculated by dividing the number of respondents indicating a selected category by the number of valid cases. All multiple response type questions are noted in the table titles.

Urban and control county respondents' willingness to allow hunting or snowmobiling is given in Tables 10 and 11. Forty-two percent of urban respondents allowed hunting and 31.4% allowed snowmobiling. Over two-thirds of control respondents (69.3%) allowed hunting and 45.1% allowed snow-

Table 10.--Urban and Control County Respondents' Willingness to Allow Hunting if Requested.

Response Landowners	Urban County Landowners (%)	Control County Landowners (%)
Yes	42.0	69.3
No	58.0	30.7
Total	100.0	100.0
Valid Cases	193	163
Non-Response	3	2

Table 11.--Urban and Control County Respondents' Willingness to Allow Snowmobiling if Requested.

Response of Landowners	Urban Respondents (%)	Control Respondents (%)
Yes	31.4	45.1
No	68.6	54.9
Total	100.0	100.0
Valid Cases	188	162
Non-Response	8	3

mobiling. Those respondents who allowed hunting or snowmobiling were asked to indicate who was allowed by checking one or more of five user groups, namely: immediate family, friends, relatives, anyone who asks and anyone whether they ask or not. Landowners' responses are shown in Tables 12 and 13. Urban respondents most frequently checked immediate family (83.4%), friends (72.0%) and relatives (68.4%) as user groups allowed to hunt. Control respondents also frequently indicated that the immediate family (88.2%), friends (73.9%) and relatives (72.0%) were user groups allowed to hunt. Urban respondents who allowed snowmobiling if requested, checked family (82.1%), friends (80.3%), and relatives (75.1%). Family (92.5%), friends (83.9%), and relatives (76.4%) were also frequently checked by control landowners who allowed snowmobiling.

A percentage difference was reported between urban and control county respondents in allowing the anyone who asks user group to hunt or snowmobile. Fourteen percent of urban landowners allowed the anyone who asks group to hunt compared to 29.9% of the control landowners. Urban respondents were also less likely (14.2% versus 28.0%), to allow the anyone who asks user group to snowmobile. Respondents in the urban counties may restrict the anyone who asks user group more frequently because as previously noted they are less favorably inclined to allow hunting or snowmobiling. Urban respondents generally have smaller parcels than control respondents and a greater percentage

Table 12.--Urban and Control County Respondents' Determination of Which User Groups are Allowed to Hunt. (Multiple Responses Permitted)

User Groups Allowed to Hunt	Urban County Landowners (%) Valid Cases	Control County Landowners (%) Valid Cases
Immediate Family	83.4	88.2
Friends	72.0	73.9
Relatives	68.4	72.0
Anyone Who Asks	14.0	29.9
Anyone Whether They Ask or Not	3.9	2.6
Total Responses	191	196
Total Valid Cases	79	111
Total Non-Response	2	2

Table 13.--Urban and Control County Respondents' Determination of Which User Groups are Allowed to Snowmobile. (Multiple Responses Permitted)

User Groups Allowed to Snowmobile	Urban County Landowners (%) Valid Cases	Control County Landowners (%) Valid Cases
Immediate Family	82.1	92.5
Friends	80.3	83.9
Relatives	75.1	76.4
Anyone Who Asks	14.2	28.0
Anyone Whether They Ask or Not	7.2	7.4
Total Responses	145	196
Total Valid Cases	56	68
Total Non-Response	3	5

of those parcels were in agricultural uses which limits the amounts of public access.

Those respondents who allowed hunting or snowmobiling, if requested, were asked if they would want to participate in a government sponsored public access program. An access program was defined on the questionnaire as "a payment made to landowners who allow the public to use their land." The definition also stated that the landowner would be given liability protection and control over number of users. Urban and control county landowner responses are shown in Tables 14 and 15. Nineteen percent and 11.1% of urban respondents indicated they wanted to participate in a government sponsored public access program for snowmobiling and hunting respectively. For control respondents, 19.6% indicated a willingness to participate in a public access hunting program and 19.1% for a public access snowmobiling program.

A disparity exists among urban and control county respondents who allow public access for free but refuse to participate in a government sponsored public access program, whereby they would receive a monetary reimbursement for the same service. These respondents were asked to select from one or more of four reasons for refusal to participate, namely: Prefer to select who uses their land; Don't want government interference; Too much work; or other. Their responses are shown in Tables 16 and 17. Urban (83.4%) and control (89.5%) respondents who allowed hunting most frequently marked the, prefer to select who uses their land

Table 14.--Willingness to Participate in a Government Sponsored Access Program for Urban and Control County Respondents' Who Now Allow or Would Allow Hunting.

Response of Landowners	Urban County Landowners (%)	Control County Landowners (%)
Yes	11.1	19.6
No	88.9	80.4
Total	100.0	100.0
Valid Cases	81	107
Non-Response	0	6

Table 15.--Willingness to Participate in a Government Sponsored Access Program For Urban and Control County Respondents' Who Now Allow or Would Allow Snowmobiling.

Response of Landowners	Urban County Landowners (%)	Control County Landowners (%)
Yes	19.0	19.1
No	81.0	80.9
Total	100.0	100.0
Valid Cases	58	68
Non-Response	1	5

reason for refusing to participate in a government sponsored public access program. Government interference was also frequently indicated by both urban (30.6%) and control (40.8%) landowners. Urban respondents who allowed snowmobiling also frequently cited prefer to select who uses their land (82.6%), and government interference (26.9%), as did control respondents who frequently cited prefer to select who uses their land (90.7%) and government interference (38.9%) as reasons for refusing a public access program for snowmobiling.

As previously cited, the majority of urban county respondents refused to allow if asked, hunting or snowmobiling. Nearly one-third of control county respondents refused hunting access, and over half refused to allow snowmobiling. These respondents selected from one or more of nine reasons for refusing hunting which are given in Table 18. Property damage (50.8%), and privacy (50.0%), were selected by half of the urban respondents as reasons for refusing hunting access. Privacy (56.2%) was the most frequently indicated reason for refusing hunting access by control respondents followed by control of users (47.9%) and property damage (45.9%). Urban and control county respondents' reasons for not allowing public snowmobiling are given in Table 19. Property damage (61.4%) and privacy (57.7%) again rank as the major reasons selected for refusing snowmobiling by urban respondents. Control respondents also indicated property damage (66.4%) and privacy (51.7%)

Table 16.--Urban and Control County Respondents' Indication of Why They Allow Public Hunting but Would Refuse to Participate in a Government Sponsored Access Program. (Multiple Responses Permitted)

Reasons for Refusal	Urban County Landowners (%) Valid Cases	Control County Landowners (%) Valid Cases
Prefer to Select Who Uses Land	83.4	89.5
Don't Want Government Interference	30.6	40.8
Too Much Work	12.4	6.9
Other	16.6	6.9
Total Responses	103	124
Total Valid Cases	72	86
Total Non-Response	0	1

Table 17.--Urban and Control County Respondents' Indication of Why They Allow Public Snowmobiling but Would Refuse to Participate in a Government Sponsored Access Program. (Multiple Responses Permitted)

Reason for Refusal	Urban County Landowners (%) Valid Cases	Control County Landowners (%) Valid Cases
Prefer to Select Who Uses Land	82.6	90.7
Don't Want Government Interference	26.0	38.9
Too Much Work	8.7	5.6
Other	10.9	7.4
Total Responses	59	77
Total Valid Cases	46	54
Total Non-Response	1	1

Table 18.--Urban and Control County Respondents' Reasons for not Allowing if Requested, Public Hunting. (Multiple Responses Permitted)

Reasons for not Allowing Public Hunting	Urban County Landowners (%) Valid Cases	Control County Landowners (%) Valid Cases
Property Damage	50.8	45.9
Privacy	50.0	56.2
Control of Users	37.4	47.9
Liability Damage	31.0	45.9
Safety	29.9	31.3
Don't Believe in Hunting	25.4	12.7
Want Game for Personal Use	16.3	20.7
Avoid Neighbor Complaints	14.4	18.6
Other	12.0	16.6
Total Responses	294	142
Total Valid Cases	110	48
Total Non-Response	2	2

Table 19.--Urban and Control County Respondents' Reasons for not Allowing if Requested, Public Snowmobiling. (Multiple Responses Permitted)

Reasons for not Allowing Public Snowmobiling	Urban County Landowners (%) Valid Cases	Control County Landowners (%) Valid Cases
Property Damage	61.4	66.4
Privacy	57.5	51.7
Control of Users	42.7	43.7
Liability Damage	37.8	41.5
Want Area for Personal Use	25.3	27.5
Avoid Neighbor Complaints	21.2	24.1
Safety	12.5	12.8
Other	13.3	16.1
Total Responses	345	247
Total Valid Cases	127	87
Total Non-Responses	2	2

as reasons for refusing snowmobiling access.

Respondents who refused hunting or snowmobiling, were asked to indicate if they would participate in a government sponsored public access program of the type previously defined. Urban and control county landowners responses are shown in Tables 20 and 21. Only 4.9% and 3.1% of urban respondents who refused public access for hunting and snowmobiling respectively indicated a willingness to participate in a government sponsored public access program. There were no control respondents who refused hunting access that indicated willingness to participate in a public access program and only 1.2% of those respondents who refused snowmobiling access were willing to particiapate.

In summary, the majority of urban county respondents refused public access and participation in government sponsored public access programs for hunting or snowmobiling. The urban respondent's need for privacy is a contributing factor toward understanding her/his public access attitude. Urban respondents refused public access because of their need for privacy and fear of property damage by recreationists. When urban respondents allowed public access, they generally confined the access to family and friends. This could be because these user groups require a lower level of supervision by the landowner than strangers. Also, family and friends of the landowner are aware of any special parcel requirements such as crop production, which constitutes a large portion of the urban county farm.

Table 20.--Willingness to Participate in a Government Sponsored Access Program for Urban and Control County Respondents Who Now Refuse or Would Refuse Hunting.

Response	Urban County Landowners (%)	Control County Landowners (%)
Yes	4.9	0.0
No	95.1	100.0
Total	100.0	100.0
Total Valid Cases	102	48
Total Non-Response	10	3

Table 21.--Willingness to Participate in a Government Sponsored Access Program for Urban and Control County Respondents Who Now Refuse or Would Refuse Snowmobiling.

Response	Urban County Landowners (%)	Control County Landowners (%)
Yes	3.1	1.2
No	96.9	98.8
Total	100.0	100.0
Total Valid Cases	128	86
Total Non-Response	1	3

All respondent landowners were asked to indicate under what conditions they would consider participation in a public access program. One hundred and ten urban county respondents or 59.5% of urban landowners indicated that under no conditions would they consider allowing public access, compared to 87 or 57.2% of control county respondents. The remaining urban and control landowners were asked to select one of seven conditions which they considered important prerequisites for participation in a government sponsored public access program. Their responses are shown in Table 22. Sixty-eight percent of the remaining urban respondents indicated that protection from lawsuits was an important condition for them to participate in a public access program. Other important conditions frequently cited by urban respondents were property tax reduction (52.0%) and control when land is used (48.0%). Control respondents indicated that control over who uses land (67.7%) and protection from lawsuits (64.6%) were important conditions for them to participate in a government sponsored public access program. The need to make a profit was the condition ranked last by both urban an control county landowners. This ranking suggests that any public access program to stimulate recreational access, based on monetary incentives alone would have a low acceptance among southern Michigan landowners. The directors of public access programs need to develop a balance between greater landowner autonomy over recreationists but not allowing the landowner to indiscriminately choose who uses his property.

Table 22.--Conditions Under Which Urban and Control County Respondents Would Consider Participation in a Government Sponsored Access Program. (Multiple Responses Permitted)

Conditions	Urban County Landowners (%) Valid Cases	Control County Landowners (%) Valid Cases
Protection from Lawsuits	68.0	64.6
Property Tax Reduction	52.0	29.2
Control When land is Used	48.0	63.1
Control Who Uses Land	41.3	67.7
Compensated for Damages	29.3	43.0
Make a Profit	29.3	27.7
Other	5.3	3.1
Total Responses	205	194
Total Valid Cases	75	65
Total Non-Response	11	13

Hunting and snowmobiling are not the only recreational activities that occur on private lands in southern Michigan. Urban and control county respondents' willingness to allow one or more recreational activities if asked are listed in Table 23. Sixty-one urban respondents, or 29.6% of all urban landowners, indicated a willingness to allow other activities. These respondents most frequently checked cross-country skiing (75.4%), hiking (65.6%) and picnicing (41.0%). Thirty-seven percent of control respondents or 67 landowners also frequently checked cross-country skiing (86.6%), hiking

Table 23.--Urban and Control County Respondents' Willingness to Allow Other Recreational Activities if Asked. (Multiple Responses Permitted.)

Activities Allowed	Urban County Landowners (%) Valid Cases	Control County Landowners (%) Valid Cases
Cross-county skiing	75.4	86.6
Hiking	65.6	74.6
Picnicing	41.0	49.2
Camping	26.2	35.8
Fishing	26.2	22.4
Motor biking	13.1	10.5
Total Responses	151	187
Total Valid Cases	61	67

(74.6%) and picnicing (49.2%) as other recreational activities that they would allow if asked.

Recreation on private lands can be commercial in nature. Public users can offer landowners the opportunity to market profit-making goods. Nine types of commercial activities were listed on the questionnaire, and respondents were asked to check one or more that was of interest to them. Urban and control county responses are shown in Table 24. Respondents were also asked to circle any commercial activity that they currently operated. Fifty-eight urban respondents or 29.5% of all urban landowners were interested in commercial activities, including leasing of lands for gardening (44.8%), fruit orchards (29.3%) and berry picking (25.9%). Thirty-five control respondents, or 21.2% of all control landowners, indicated interest in one or more commercial activities. They checked the categories of Christmas trees (31.4%), gardening (28.6%), berry picking (25.7%), and fish ponds (25.7%). There were fourteen urban county respondents who currently operated commercial activities including four berry picking operations, three horseback riding farms, three Christmas tree plantations, two firewood operations and two vegetable farms. Four control county landowners operated commercial activities namely: two firewood operations, one berry picking farm and one fruit orchard. Urban respondents may have a higher interest in commercial activities because of their proximity to urban areas and prospective buyers.

Table 24.--Urban and Control County Respondents' Interest in Commercial (For a Profit) Activities. (Multiple Responses Permitted)

Activities	Urban County Landowners (%) Valid Cases	Control County Landowners (%) Valid Cases
Gardening	44.8	28.6
Fruit Orchards	29.3	14.3
Berrypicking	25.9	25.7
Christmas Tree Cutting	24.1	31.4
Fish Ponds	24.1	25.7
Hayrides	24.1	20.0
Horseback Riding	20.7	11.4
Camping	19.0	20.0
Firewood Sale	8.7	8.6
Other	15.5	8.6
Total Responses	137	68
Total Valid Cases	58	35

Snowmobiling is one type of activity that requires a large amount of land for performance. Other activities that require large properties are hiking, biking, and horseback riding. One possible solution to supply these large tracts of land would be for smaller landowners to merge their properties. Administration could be assigned to one owner easing the responsibilities of other landowners. All respondents were asked to indicate their attitude toward merging of their lands in a cooperative for public access. Urban and control county responents are given in Table 25. Twelve percent of urban respondents would be willing to

Table 25.--Urban and Control County Respondents' Attitudes Toward Merging of Their Lands in a Cooperative for Public Access.

Attitudes	Urban County Landowners (%)	Control County Landowners (%)
Don't believe in a Cooperative	83.7	85.2
Will place land in Cooperative	12.0	11.6
Will head such a Cooperative	4.3	3.2
Total	100.0	100.0
Total Valid Cases	190	155
Total Non-Responses	6	10

place their lands in a cooperative, compared to 11.6% for control respondents. Only 4.3% and 3.2% of urban and control respondents respectively, would be willing to head such a cooperative.

All respondents were instructed to write an amount per acre, per season they believed landowners in general should be offered who permit the public to use their lands for four programs namely: hunting, cross-country skiing, snowmobiling and gardening. Fifty-one urban respondents and 24 control respondents refused to enter a numerical value for this question but wrote comments on the questionnaire. Urban respondents' comments were evenly divided between: (1) Having no idea what payments should be paid to landowners; (2) The payment should be equal to the landowners taxes; and (3) The payment should be decided by the individual landowners. More than two-thirds of control respondents' comments were: Have no idea what payment should be paid to landowners.

Payments urban and control county respondents believed landowners should receive for allowing public access are shown in Tables 26, 27, 28, and 29. For all programs, urban respondents suggested a median payment four times that suggested by urban owners. The median payment suggested by urban owners for hunting was $8.50 with a mean of $25.14. Other median charges suggested by urban landowners were $10.00 for snowmobiling (mean=$29.37), $10.00 for cross-country skiing (mean=$21.28) and a suggested fee of $25.00

Table 26.--Urban and Control County Respondents' Indication of the Payment Landowners Should Receive for Permitting Public Hunting.

Payment Per Acre	Urban County Landowners (%)	Control County Landowners (%)
No Payment	25.6	41.7
$ 0.01 - $ 2.50	6.4	10.7
$ 2.51 - $ 5.00	9.0	16.7
$ 5.01 - $ 7.50	2.6	0
$ 7.51 - $10.00	16.7	9.5
$10.01 - $20.00	6.4	4.8
$20.01 - $30.00	7.7	2.3
$30.01 - or More	25.6	14.3
Total	100.0	100.0
Total Valid Cases	78	84
Mean	25.14	14.67
Median	8.50	2.00

Table 27.--Urban and Control County Respondents' Indication of the payment Landowners Should Receive for Permitting Public Skiing.

Payment Per Acre	Urban County Landowners (%)	Control County Landowners (%)
No Payment	32.0	46.9
$ 0.01 - $ 2.50	8.0	19.8
$ 2.51 - $ 5.00	6.7	9.9
$ 5.01 - $ 7.50	0.0	0.0
$ 7.51 - $10.00	14.6	4.9
$10.01 - $20.00	10.7	4.9
$20.01 - $30.00	10.7	2.5
$30.01 or More	17.3	11.1
Total	100.0	100.0
Total Valid Cases	75	81
Mean	21.28	12.15
Median	10.00	2.00

Table 28.--Urban and Control County Respondents' Indication of the Payment Landowners Should Receive for Permitting Public Snowmobiling.

Payment Per Acre	Urban County Landowners (%)	Control County Landowners (%)
No Payment	30.7	45.1
$ 0.01 - $ 2.50	5.3	9.7
$ 2.51 - $ 5.00	4.0	12.2
$ 5.01 - $ 7.50	0.0	0.0
$ 7.51 - $10.00	14.7	10.9
$10.01 - $20.00	9.3	6.9
$20.01 - $30.00	8.0	2.3
$30.01 or More	28.00	12.9
Total	100.0	100.0
Total Valid Cases	75	82
Mean	29.37	14.88
Median	10.00	2.00

Table 29.--Urban and Control County Respondents' Indication of the Payment Landowners Should Receive for Permitting Public Gardening.

Payment Per Acre	Urban County Landowners (%)	Control County Landowners (%)
No Payment	21.6	42.5
$ 0.01 - $ 2.50	2.7	2.5
$ 2.51 - $ 5.00	5.4	2.5
$ 5.01 - $ 7.50	0.0	0.0
$ 7.51 - $10.00	5.4	3.8
$10.01 - $20.00	12.2	5.0
$20.01 - $30.00	14.9	5.0
$30.01 or more	37.8	38.7
Total	100.0	100.0
Total Valid Cases	74	80
Mean	36.03	33.88
Median	25.00	10.00

for gardening (mean=$36.03). Control respondents suggested a median charge of $2.00 for hunting (mean=$14.67), $2.00 for snowmobiling (mean=$14.88), $2.00 for cross-country skiing (mean=$12.15) and $10.00 for gardening (mean=$33.88).

In summary, urban county respondents' attitude toward public access can be described as more negative than that of control county landowners. Urban landowners were less likely than control landowners to allow hunting and snowmobiling, less interested in other types of recreational activities and less willing under most conditions to participate in a government sponsored access sponsored program. One condition under which urban respondents were more willing than control respondents to participate in a public access program was if they could make a profit. A monetary type attitude toward public access was also shown by urban respondents with their interest in commercial activities and their higher suggested payments to owners for allowing public access. Directors of government sponsored public access programs may use incentives such as property tax reduction and liability protection as substitutes for or additions to cash payments for landowners who participate in public access programs.

CHAPTER V

TESTING THE HYPOTHESES

In this chapter, the results from testing the six hypotheses outlined in the Hypotheses and Research Methods chapter are discussed. As previously mentioned, three variables were tested namely: the region in which a parcel is located (i.e. control county or urban county); the distance a parcel is from major urban areas and the size of the parcel owned (i.e. large or small). Hypotheses are presented in conceptual and operational forms to assist the reader.

Hypothesis 1: The Influence of Distance on Landowners' Attitude Toward Allowing Public Access.

Conceptual Hypothesis 1.--Landowners' willingness to allow access for hunting or snowmobiling are related to their parcels' distance from major urban areas.

Operational Hypothesis 1a.--Owners of parcels located in control counties (e.g. more rural) will allow a higher percentage of hunting or snowmobiling than owners of parcels in urban counties.

Operational Hypothesis 1b.--There will be a corresponding increase in the percentage of landowners who allow hunting or snowmobiling as distance zones increase from major urban areas.

As previously noted the influence of distance on

landowners' willingness to allow hunting or snowmobiling was analyzed from two perspectives. Distance was first defined as the location of the parcel in either an urban or control county. Urban landowners were owners with parcels in the counties of Macomb, Oakland, Washtenaw and Wayne. Control landowners were owners with parcels in the remaining less urban counties of Southern Lower Michigan. Results from analyzing the role of distance from this perspective are given in Tables 30 and 31. Over two-thirds (69.3%) of control respondents allowed hunting and 45.1% allowed snowmobiling. Forty-two percent of urban respondents allowed hunting and 31.4% allowed snowmobiling. As explained previously, the Chi-square test was applied to determine the significance of the differences between urban and control landowners and willingness to allow access. The results for hunting and snowmobiling indicate a significant relationship at the 0.05 level.

To further examine this relationship, distance was secondly defined as the number of miles parcels were located from one of the eleven largest metropolitan areas in the study region. Comparison of this perspective of distance and whether landowners allow public hunting or snowmobiling are given in Tables 32 and 33. The percentages of respondents allowing hunting on their parcels ranges from a low of 37.5% for the 6 to 10 miles zone to a high of 83.3% of respondents allowing hunting in the 46 miles or more zone. Twenty-three percent of the 16 to 20 miles zone respondents

Table 30.--Comparison of Urban and Control County Respondents With Their Willingness to Allow Hunting.

Residency of Landowners	Landowners Allow Hunting on Parcel Yes (%)	No (%)	Total (%)
Urban County Landowners	42.0	58.0	54.2
Control County Landowners	69.3	30.7	45.8
Total	54.5	45.5	100.0
Chi-square	26.668	Kendall's tau	-.271
Degrees of Freedom	1	Total Valid Cases	356
Significance	.000	Non-Response	5

Table 31.--Comparison of Urban and Control County Respondents With Their Willingness to Allow Snowmobiling.

Residency of Landowners	Landowners Allow Snowmobiling on Parcel Yes (%)	No (%)	Total (%)
Urban County Landowners	31.4	68.6	53.7
Control County Landowners	45.1	54.6	46.3
Total	37.7	62.3	100.0
Chi-square	6.931	Kendall's tau	-.136
Degrees of Freedom	1	Total Valid Cases	350
Significance	.008	Non-Response	11

Table 32.--Comparison of the Distance A Respondent's Parcel is From the Nearest Metropolitan Area by Whether the Respondent Allows Hunting.

Distance to Metro. Area	Landowners Allow Hunting on Parcel		
	Yes (%)	No (%)	Number of Respondents
1 - 5 (miles)	54.5	45.5	22
6 - 10	37.5	62.5	40
11 - 15	51.9	48.1	54
16 - 20	46.0	54.0	63
21 - 25	60.0	40.0	35
26 - 30	69.7	30.3	33
31 - 35	61.1	38.9	18
36 - 40	76.9	23.1	13
41 - 45	69.2	30.8	13
46 or more	83.3	16.7	30
Total	57.0	43.0	

Chi-square	23.746	Kendall's tau	+.258
Degrees of Freedom	9	Total Valid Cases	321
Significance	.000	Non-Response	40

Table 33.--Comparison of the Distance a Respondent's Parcel is From the Nearest Metropolitan Area by Whether the Respondent Allows Snowmobiling.

Distance Zone to Metro Area	Landowners Allow Snowmobiling on Parcel		
	Yes (%)	No (%)	Number of Respondents
1 - 5 (miles)	38.1	61.9	21
6 - 10	30.0	70.0	40
11 - 15	39.2	60.8	51
16 - 20	23.0	77.0	61
21 - 25	31.4	68.6	35
26 - 30	60.6	39.4	33
31 - 35	44.4	55.6	18
36 - 40	40.0	50.0	12
41 - 45	61.5	38.5	13
46 or more	60.0	40.0	30
Total	39.8	60.2	
Chi-square	24.204	Kendall's tau	+.199
Degrees of Freedom	9	Total Valid Cases	318
Significance	.004	Non-Response	47

allowed snowmobiling compared to a high of 61.5% for those respondents located in the 41 to 45 miles zone. Although the relationship between landowner's willingness to allow hunting or snowmobiling and distance is not completely linear, as distance increases the percentage of landowners allowing each activity generally increases. Variations in the increasing percentages may be due to the low number of respondents in some distance zones. To determine the significance of the differences between the respondents' willingness to allow public access, the Chi-square test was applied. The results for hunting and snowmobiling indicate a significant relationship at the 0.05 level.

Hypothesis 1 Results: From both perspectives used to examine the influence of distance on respondents' willingness to permit hunting or snowmobiling, a negative relationship does exist between whether landowners allow access and their proximity to an urban area. This relationship appears to be linear in nature, being strongest near the metropolitan areas and weakening as distance increases. As previously noted, urban respondents were less likely to allow public access because they feared property damage and preferred to control when their parcels were used. For both perspectives the hunting relationship was stronger based on the Kendall's tau values as previous noted. Hunting may be more acceptable to some respondents because it is a less intensive activity than snowmobiling.

Hypothesis 2: The Influence of Distance on the Type of User Groups Allowed.

Conceptual Hypothesis 2.--The user groups allowed onto landowners' parcels are influenced by the parcel's distance from major urban areas.

Operational Hypothesis 2a.--Owners of parcels located in control counties will allow a higher percentage of the anyone who asks user group to hunt or snowmobile than owners of parcels located in urban counties.

Operational Hypothesis 2b.--There will be a corresponding increase in the percentage of landowners allowing the anyone who asks user group as distance zones increase from major urban areas.

Respondents were asked to identify what user groups were allowed to hunt or snowmobile on their parcels. The five user groups from which respondents were asked to select included: immediate family, friends, relatives, anyone who asks and anyone whether they ask or not. As noted in Tables 12 and 13 of the General Findings chapter, urban respondents were more likely to allow family, friends and relatives to hunt and snowmobile than control respondents. Urban respondents may allow these user groups because they require less supervision than strangers and may be more aware of parcel requirements such as crop production. Conversely, control respondents were more willing than urban respondents to allow the anyone who asks user group to hunt or snowmobile.

In order to test a multi-response question where the respondents can check more than one type of user group,

it was necessary to cross-tabulate each individual cell of Tables 12 and 13. Thus, urban and control county respondents were compared against the five user groups allowed to hunt or snowmobile, creating a total of ten comparison tables. For this hypothesis test the comparison of urban and control respondents against allowing the anyone who asks user group to hunt or snowmobile were selected and are shown in Tables 34 and 35. A statistically significant relationship was found for the hunting comparison, but not for the snowmobiling comparison, even though the tabular values for hunting and snowmobiling appear quite close. The lower Chi-square value for snowmobiling may be due to the smaller total of valid cases and the weaker relationship based on the Kendall's tau value.

Cross-tabulation of the miles urban and control county respondents' parcels were from urban cities and user groups allowed to hunt and snowmobile are given in Tables 36 and 37. Respondents who allowed the anyone who asks user group to hunt ranges from a low of 5.5% for the 16 to 20 miles zone to a high of 14.3% for the 31 to 35 miles zone. Respondents who allowed the anyone who asks user group to snowmobile ranges from a low of 3.3% for the 21 to 25 miles zone to a high of 15.4% for the 6 to 10 miles zone. There appears to be no definite trend between the percentage of landowners allowing the anyone who asks user group to hunt or snowmobile and distance to the nearest metropolitan cities. As previously noted, distance was cross-tabulated

Table 34.--Comparison of Urban and Control County Respondents by Their Willingness to Allow the "Anyone Who Asks" User Group to Hunt.

Residency of Landowners	Landowners Allowing the "Anyone Who Asks" Group to Hunt		
	Yes (%)	No (%)	Total (%)
Urban County Landowners	13.9	86.1	41.6
Control County Landowners	29.7	70.3	58.4
Total	23.2	76.8	100.0

Chi-square	5.621	Kendall's tau	-.184
Degrees of Freedom	1	Total Valid Cases	190
Significance	.017	Non-Response	4

Table 35.--Comparison of Urban and Control County Respondents by Their Willingness to Allow the "Anyone Who Asks" User Group to Snowmobile.

Residency of Landowners	Landowners Allowing the "Anyone Who Asks" Group to Snowmobile		
	Yes (%)	No (%)	Total (%)
Urban County Landowners	15.1	84.9	42.7
Control County Landowners	26.8	73.2	57.3
Total	21.8	78.2	100.0

Chi-square	1.780	Kendall's tau	-.138
Degrees of Freedom	1	Total Valid Cases	124
Significance	.181	Non-Response	8

Table 36.--Comparison of the Distance Parcels are Located from the Nearest Metropolitan Area by Which User Groups the Respondents Allow to Hunt. (Multiple Responses Permitted)

Distance Zones	Number of Respondents	User Groups Allowed to Hunt				
		Family (%)	Friends (%)	Relatives (%)	Anyone Who Asks (%)	Anyone (%)
1 - 5	12	39.3	25.0	28.6	7.1	-
6 - 10	15	39.4	18.2	27.3	12.1	3.0
11 - 15	28	34.2	30.4	29.1	6.3	-
16 - 20	29	35.6	28.8	28.8	5.5	1.4
21 - 25	20	33.3	31.4	27.5	5.9	2.0
25 - 30	20	28.8	26.9	34.6	7.7	1.9
31 - 35	11	32.1	28.6	21.4	14.3	3.6
36 - 40	10	30.8	30.8	26.9	11.5	-
41 - 45	9	27.6	27.6	31.0	10.3	3.4
46 or more	25	32.4	26.5	29.4	11.8	-
Total	179					

Based on 179 Valid Cases
Checking 467 Categories

Table 37.--Comparison of the Distance Parcels are Located from the Nearest Metropolitan Area by Which User Groups the Respondents Allow to Snowmobile. (Multiple Responses Permitted)

Distance Zones to Metro Area	Number of Respondents	User Groups Allowed to Snowmobile				
		Family (%)	Friends (%)	Relatives (%)	Anyone Who Asks (%)	Anyone (%)
1 - 5	7	36.4	27.3	27.3	4.5	4.5
6 - 10	11	30.8	26.9	26.9	15.4	-
11 - 15	19	28.8	26.9	34.6	7.7	1.9
16 - 20	13	36.1	33.3	30.6	-	-
21 - 25	10	33.3	33.3	30.3	3.3	-
26 - 30	19	32.6	28.3	32.6	4.3	2.2
31 - 35	8	34.8	26.1	21.7	13.0	4.3
36 - 40	6	33.3	25.0	41.7	-	-
41 - 45	8	25.9	25.9	29.6	11.1	7.4
46 or more	17	30.2	24.5	26.4	13.2	5.7
Total	118	31.8	27.8	30.0	7.6	2.8

Based on 118 Valid Cases
Checking 327 Categories

against the anyone who asks user group. No significant relationships were found for hunting or snowmobiling at the 0.05 level and were not shown.

Hypothesis 2 Results: Of the four comparisons between distance and the percentage of the anyone who asks user group allowed to hunt or snowmobile, only one was found to be statistically significant. Although control landowners appear more willing to allow access for the anyone who asks group, a statistically significant and consistent relationship cannot be supported.

Hypothesis 3: The Influence of Distance on What Respondents Believe Should be Offered to Landowners Who Allow Public Access.

Conceptual Hypothesis 3.--The charges suggested by landowners for public access are influenced by the parcels' distance from major urban areas.

Operational Hypothesis 3a.--Owners of parcels located in control counties will suggest smaller compensation for hunting or snowmobiling access than owners of parcels in urban counties.

Operational Hypothesis 3b.--There will be a negative relationship between the charges suggested by landowners for hunting or snowmobiling as the distance zones increase from major urban cities.

All respondents were asked to suggest a payment landowners, in general, should receive who permit hunting or

snowmobiling. Respondents were directed to base their payments on a per acre, per season period. The resulting mean responses for urban and control county respondents are given in Tables 38 and 39. The payments urban respondents believed landowners who allowed hunting or snowmobiling should receive were $25.14 and $29.37 respectively. Control respondents suggested mean payments were lower than urban respondents for hunting ($14.67) and snowmobiling ($14.88). As previously noted, urban respondents have a more negative attitude toward allowing public access and require a higher monetary reimbursement to open now-closed lands. One-way analysis of variance between urban and control respondents and the payment they believed landowners should receive revealed a significant relationship for hunting and snowmobiling at the 0.05 level.

The mean payment suggested by urban and control county respondents for landowners who allow hunting or snowmobiling and the distance of their parcel to the nearest metropolitan cities are given in Tables 40 and 41. The charge suggested by landowners for hunting ranges from a high of $34.40 for the six to ten miles group to a low of $0.67 for the 41 to 45 miles group. The charge suggested by landowners for snowmobiling ranges from a high of $34.70 at the six to ten miles group to a low of no payment for the 41 to 45 miles group. As previously explained, variation in the declining mean charge as distance increases may be due to the low number of respondents in some groups. A statistic-

Table 38.--One-Way Analysis of Variance Between Urban and Control Country Respondents and the Charge They Believe Landowners Should Receive for Permitting Public Hunting.

Residency of Landowner	Mean Charge	Standard Deviation	Number of Respondents
Urban County Landowner	$25.14	3.16	78
Control County Landowner	14.67	27.88	84
For Entire Population	19.25	30.76	162
F-ratio 11.01	Significance .001		

Table 39.--One-Way Analysis of Variance Between Urban and Control County Respondents and the Charge They Believe Landowners Should Receive for Permitting Public Snowmobiling.

Residency of Landowner	Mean Charge	Standard Deviation	Number of Respondents
Urban County Landowner	$29.37	38.11	75
Control County Landowner	14.88	29.31	82
For Entire Population	21.80	34.46	157
F-ratio 10.50	Significance .009		

Table 40.--One-Way Analsyis of Variance Between the Charge Respondents Believe Landowners Should Receive for Hunting Access and the Distance of Their Parcels to the Nearest Metropolitan Area.

Distance to Metro. Area	Mean Charge	Standard Deviation	Number of Respondents
1 - 5 (miles)	$20.40	33.64	15
6 - 10	34.40	43.04	16
11 - 15	24.07	32.13	26
16 - 20	27.22	35.45	27
21 - 25	3.61	6.44	17
26 - 30	10.60	26.33	15
31 - 35	2.00	3.42	9
36 - 40	3.93	2.83	7
41 - 45	.67	.00	3
46 or more	5.64	12.93	14
For Entire Population	$19.14	31.45	149
F-ratio 2.600		Significance	.004

Table 41.--One-Way Analysis of Variance Between the Charge Respondents Believe Landowners Should Receive for Snowmobiling Access and the Distance of Their Parcels to the nearest Metropolitan Area.

Distance to Metro. Area	Mean Charge	Standard Deviation	Number of Respondents
1 - 5 (miles)	$27.60	40.11	14
6 - 10	34.70	45.15	17
11 - 15	23.20	31.98	25
16 - 20	32.84	41.07	25
21 - 25	6.89	12.61	18
26 - 30	12.07	25.84	15
31 - 35	1.88	3.44	9
36 - 40	4.43	5.86	7
41 - 45	.00	.00	3
46 or more	5.64	13.80	14
For Entire Population	$21.75	34.35	147
F-ratio 2.572	Significance .010		

ally significant relationship exists at the 0.05 level between the distance of parcels from major urban areas and the mean charge suggested by the respondents for hunting or snowmobiling.

Hypothesis 3 Results: A statistically significant relationship exists between urban and control county respondents and the payment they suggest landowners should receive who allow hunting or snowmobiling. A significant relationship was also shown between the mean payment suggested by all respondents and the distance their parcels were from major urban centers. Urban respondents may suggest larger payments to landowners who allow hunting or snowmobiling for three reasons. First because they themselves do not consider the ability to "make a profit" an important consideration when addressing the public access issue. Secondly urban county farms are generally smaller than control county farms and more of their acreage is allocated to crops. Lastly urban landowners may view recreationists as potentionally damaging to their crops and properties.

Hypothesis 4: The Influence of Size of Ownership on Landowners' Attitudes Toward Allowing Public Access.

Conceptual Hypothesis 4.--Landowners' willingness to allow access for hunting or snowmobiling is related to parcel size.

Operational Hypothesis 4.--Owners of parcels in the large acreage group will allow a higher percentage of hunting

or snowmobiling than owners in the small acreage group.

As previously stated, urban and control county landowners whose largest single parcel is 120 acres or more were classified as large and those with parcels between 30 acres, the set minimum, and 60 acres were classified as small. Responses from owners whose largest parcel fell between 60 and 120 acres were not included in this part of the analysis. The comparison of landowners of small and large parcels with their willingness to allow hunting or snowmobiling are given in Tables 42 and 43. Approximately half of both acreage groups were willing to allow hunting. A slightly higher percentage of respondents owning large parcels (35.5%) would allow snowmobiling than those owning small parcels (34.7%).

Hypothesis 4 Results: No statistically significant relationship was found between parcel size and willingness to allow either hunting or snowmobiling.

Hypothesis 5: The Influence of Size of Ownership on the User Groups Allowed.

Conceptual Hypothesis 5.--The user groups allowed onto landowners' parcels are influenced by parcel size.

Operational Hypothsis 5.--Owners of parcels in the large acreage group will allow a higher percentage of the anyone who asks user group to hunt or snowmobile than owners of parcels in the small acreage group.

As previously noted, urban and control county respondent owners were asked to identify what type of user groups

Table 42.--Comparison of Size of Ownership and the Respondent's Willingness to Allow Hunting.

Acreage Groups	Landowners Allow Hunting on Parcel Yes (%)	No (%)	Total (%)
Owners of Small Parcels	53.5	46.5	62.3
Owners of Large Parcels	50.6	49.4	37.7
Total	52.5	47.5	100.0
Chi-square .160	Kendall's tau		-.027
Degrees of Freedom 1	Total Valid Cases		204
Significance .688	Non-Response		1

Table 43.--Comparison of Size of Ownership and the Respondent's Willingness to Allow Snowmobiling.

Acreage Groups	Landowners Allow Snowmobiling on Parcel Yes (%)	No (%)	Total (%)
Owners of Small Parcels	34.7	65.3	62.6
Owners of Large Pacels	35.5	63.5	37.4
Total	35.4	64.6	100.0
Chi-square .066	Kendall's tau		-.016
Degrees of Freedom 1	Total Valid Cases		198
Significance .796	Non-Response		2

were allowed to hunt and snowmobile on their parcels. These groups included: immediate family, friends, relatives, anyone who asks and anyone whether they ask or not. The comparisons of size of parcels owned and user groups allowed to hunt and snowmobile are shown in Tables 44 and 45. Generally both acreage groups allowed the same percentage of each user groups to hunt and snowmobile.

As explained previously, for this hypothesis test the comparison of acreage groups by whether the anyone who asks user group were allowed to hunt or snowmobile were used and are given in Tables 46 and 47. Nearly a third of large acreage respondents allowed hunting access to the anyone who asks group compared to 26.1% of landowners in the small acreage group. Both acreage groups allowed approximately the same percentage of user access for snowmobiling. For both comparisons, there is no statistically significant relationship at the 0.05 level between the size of a landowners' parcels and their allowing public access.

Hypothesis 5 Results: No statistically significant relationships were found between parcel size and whether the landowner allowed access to the anyone who asks user group for either hunting or snowmobiling.

Hypothesis 6: The Influence of Size of Ownership on What Respondents Believe Should be Offered to Landowners Who Allow Public Access.

Conceptual Hypothesis 6.--The charge suggested by land-owners for the use of their lands for recreation is

Table 44.--Comparison of Size of Ownership and Which User Groups are Allowed to Hunt. (Multiple Responses Permitted)

User Groups Allowed to Hunt	Large Acreage Group (%) Valid Cases	Small Acreage Group (%) Valid Cases
Immediate Family	33.3	34.1
Friends	26.0	27.3
Relatives	27.0	26.7
Anyone Who Asks	12.0	10.2
Anyone Whether They Ask or Not	2.0	1.7
Total Responses	100	176
Total Valid Cases	39	68
Total Non-Response	14	0

Table 45.--Comparison of Size of Ownership and Which User Groups are Allowed to Snowmobile. (Multiple Responses Permitted)

User Groups Allowed to Snowmobile	Large Acreage Group (%) Valid Cases	Small Acreage Group (%) Valid Cases
Immediate Family	31.9	31.0
Friends	27.8	26.5
Relatives	30.6	31.9
Anyone Who Asks	6.9	8.0
Anyone Whether They Ask or Not	2.8	2.7
Total Responses	74	113
Total Valid Cases	26	42
Total Non-Response	0	0

Table 46.--Comparison of Size of Ownership and Respondents' Willingness to Allow the "Anyone Who Asks' User Group to Hunt.

Acreage Groups	Landowners Allow the "Anyone Who Asks" User Group to Hunt		
	Yes (%)	No (%)	Total (%)
Owners of Small Parcels	26.1	73.9	64.5
Owners of Large Parcels	31.6	68.4	35.5
Total	28.0	72.0	100.0

Chi-square	0.366	Kendall's tau	-.058
Degrees of Freedom	1	Total Valid Cases	107
Significance	.545	Non-Response	0

Table 47.--Comparison of Size of Ownership and Respondents' Willingness to Allow the "Anyone Who Asks" User Group to Snowmobile.

Acreage Groups	Landowners Allow the "Anyone Who Asks" User Group to Snowmobile		
	Yes (%)	No (%)	Total (%)
Owners of Small Parcels	21.4	78.6	61.8
Owners of Large Parcels	19.2	80.8	38.2
Total	20.6	79.4	100.0

Chi-square	0.470	Kendall's tau	0.026
Degrees of Freedom	1	Total Valid Cases	68
Significance	0.828	Non-Response	2

influenced by the parcl size.

Operational Hypothesis 6.--Owners of parcels in the large acreage group will suggest a smaller dollar amount for landowners who permit hunting or snowmobiling than owners of parcels in the small acreage group.

Respondents were asked to suggest the charge landowners should require per acre, per season, for allowing hunting or snowmobiling. The comparison of acreage group by the charge suggested for hunting or snowmobiling are shown in Tables 48 and 49. The mean charge suggested by respondents in the small acreage group for landowners who allowed hunting was $14.50, compared to a mean charge of $12.13 suggested by the large acreage respondents. A mean charge of $20.19 was suggested by the small acreage respondents for landowners who allow snowmobiling, compared to a mean charge of $14.47, required by the large acreage respondents for snowmobiling.

Hypothesis 6 Results: Respondents in the small acreage group may require a higher charge for the same reasons urban respondents required a higher charge for hunting and snowmobiling. Landowners in the small acreage group may have less farmland to divert to alternate uses. Because of a smaller land base, public access may conflict with daily farm operations or their privacy if they live on the property. Although respondents in the small acreage group required a higher charge, statistical tests using one-way analysis of variance indicate that the difference is not statistically significant for either hunting or snowmobiling.

Table 48.--One-Way Analysis of Variance Between Size of Ownership and the Charge Respondents Believe Landowners Should Receive for Permitting Public Hunting.

Acreage Groups	Mean	Standard Deviation	Number of Respondents
Small	$14.50	29.00	66
Large	12.13	22.31	38
For Entire Population	14.18	27.03	104
F-ratio .026		Significance .871	

Table 49.--One-Way Analysis of Variance Between Size of Ownership and the Charge Respondents Believe Landowners Should Receive for Permitting Public Snowmobiling.

Acreage Groups	Mean	Standard Deviation	Number of Respondents
Small	$20.19	35.20	67
Large	14.47	24.25	36
For Entire Population	19.16	32.75	103
F-ratio 0.869		Significance .340	

CHAPTER VI

CONCLUSIONS AND RECOMMENDATIONS

A summary of the General Findings chapter and the results of the six hypotheses tested are presented in the first section of this chapter. Recommendations for government sponsored public access programs are outlined in the second section and suggestions for future research are discussed in the final section.

Conclusions

Ray G. Arnett (1972), Director of the California Fish and Game Division, in an address to the Western Association of State Game Commissioners, cited the disappearance of private lands open for public recreation. Specifically, he cited the need to further the research of private lands near urban areas. This study was designed to examine such a group of private urban landowners. A selected number of private urban landowners in Southeastern Michigan were examined and then compared to a selected sample of control landowners in the remaining southern lower Michigan area.

Because of the large amount of data and tables presented in the General Findings section, it was useful to summarize these findings. Table 50 which follows permits ready comparison between owners and properties in Michigan's populous southeastern counties (classified as urban respondents)

Table 50.--Summary of Key Study Findings for Urban and Control County Respondents.

Subgroup	Respondents Owning Urban Parcels	Respondents Owning Control Parcels
Median Age (Years)	57.5	55.4
Income Above $18,000 (%)	53.8	45.9
Amount of Income From Farming (%)	29.6	37.4
Median Acreage (Acres)	78.9	85.9
Percentage of Parcel In Crops	65.7	25.8
Percentage Allowing Hunting	42.0	69.3
Percentage Allowing Snowmobiling	31.4	45.1
*User Groups Allowed To Hunt (% of Valid Cases)		
Immediate Family	83.4	88.2
Friends	72.0	73.9
Relatives	68.4	72.0
Anyone Who Asks	14.0	29.9
*User Groups Allowed To Snowmobile (% of Valid Cases)		
Immediate Family	82.1	92.5
Friends	80.3	83.9
Relatives	75.1	76.4
Anyone Who Asks	14.2	28.0
Percentage Willing To Participate In Public Hunting Program	11.1	19.6
Percentage Willing To Participate In Public Snowmobiling Program	19.0	19.1

*Multiple response type question.

Table 50 (Continued)

Subgroup	Respondents Owning Urban Parcels	Respondents Owning Control Parcels
*Reasons For Not Participating In An Access Program For Hunting (% of Valid Cases)		
Prefer To Select Who Uses Land	83.4	89.5
Don't Want Govt. Interference	30.6	40.8
Too Much Work	12.4	6.9
*Reasons For Not Participating In An Access Program For Snowmobiling (% of Valid Cases)		
Prefer to Select Who Uses Land	82.6	90.7
Don't Want Govt. Interference	26.0	38.9
Too Much Work	8.7	5.6
*Reasons For Refusing Hunting Access (% of Valid Cases)		
Property Damage	50.8	45.9
Privacy	50.0	56.2
Control of Users	37.4	47.9
*Reasons for Refusing Snowmobiling Access (% of Valid Cases)		
Property Damage	61.4	66.4
Privacy	57.7	51.7
Control of Users	42.7	43.7
Willing to Participate In A Public Access Program Under Certain Conditions	40.5	41.8
*Conditions Important For Public Access Participation (% of Valid Cases)		
Protection From Lawsuits	66.0	64.6
Property Tax Reduction	52.0	29.2
Control When Land is Used	48.0	63.1

Table 50 (Continued)

Subgroup	Respondents Owning Urban Parcels	Respondents Owning Control Parcels
Willing To Allow Other Types of Recreational Activities	29.6	37.0
*Other Types of Activities Allowed (% of Valid Cases)		
Cross-country Skiing	75.4	86.6
Hiking	65.6	74.6
Picnicing	41.0	49.2
Willing to Allow Commercial Activities	29.5	21.2
*Commercial Activities Allowed (% of Valid Cases)		
Gardening	44.8	28.6
Fruit Orchard	29.3	14.3
Berry Picking	25.9	21.2
Median Charge Per Acre Required		
Hunting	$20.00	$ 5.00
Cross-country Skiing	10.00	5.00
Snowmobiling	10.00	10.00
Gardening	20.00	10.00

and their peers in the less densely populated counties of the southern Michigan study region (classified as control respondents).

Although urban and control county respondents' median age was approximately 55 years, three socio-economic differences were noted between the two respondent groups. Over half of urban respondents reported their incomes were above the 1980 state median income of $18,000 compared to less than half of control respondents. The largest portion (37.4%) of urban respondents' income was generated from non-agricultural sources, while control respondents' largest owned approximately two parcels with a median size of nearly 80 acres, but how the average parcel was used differed between the two respondent groups. Approximately two-thirds of urban respondents' land was devoted to crop production compared to control respondents' land which was evenly divided between crop production, woods and fields.

The majority of urban respondents refused to allow public access for hunting or snowmobiling if requested. conversely, a majority of control respondents allowed access for hunting and nearly half allowed snowmobiling. Both urban and control respondents who refused hunting or snow-mobiling were asked to select from eight categories their reasons for refusal. Both respondent groups cited fear of property damage and the need for privacy. The three socioeconomic differences previously noted between urban and control respondents can be a contributing factor in urban respondents' negative attitude toward public access

and government sponsored public access programs. Since urban landowners' incomes are generated from non-agricultural sources, they may have less available time to supervise public recreationists. The potential income which is generated from participation in government sponsored public access programs maybe less attractive to urban respondents who have a greater mean income than control respondents.

Urban and control county respondents who allowed hunting or snowmobiling were asked to indicate who was allowed by selecting from five user groups namely: family, friends, relatives, anyone who asks and anyone whether they ask or not. Although both respondent groups confined the majority to their acceptance to family, friends, and relatives, urban respondents were more restrictive in allowing the anyone who asks group. Only 14.0% and 14.2% of urban respondents would allow the anyone who asks user group to hunt or snowmobile respectively, compared to nearly one-third of control respondents.

Urban respondents were less likely than control respondents to participate in a government sponsored public access program. This program was defined on the questionnaire as: "paying the landowner a fee for allowing the public to use their land for hunting or snowmobiling." Only 11.1% and 19.1% of urban respondents who allowed hunting or snowmobiling respectively would participate in a government sponsored public access program for hunting or snowmobiling. Those respondents who allowed hunting or snow-

mobiling access for free but refused to participate in a public access program which would reimburse them for the same service were asked to state their reasoning. Eighty percent or more of urban respondents cited the need to control when their land was used and to avoid government interference. The urban respondents' need for privacy is a contributing factor in urban landowners generally negative attitude toward allowing hunting or snowmobiling access. Urban respondents allow public access only to individuals they know such as family and friends. These user groups require a lower level of supervision by the landowner than strangers. Family and friends of the landowner are also aware of any special parcel requirements such as crop production which constitutes a large portion of the average urban county farm. Finally, the number of these individuals is small and probably viewed as manageable by urban county landowners.

Urban landowners' attitudes towards government sponsored access programs can be improved. Given certain conditions over forty percent of this studies' urban respondents would participate in a government sponsored public access program. The condition most frequently cited by urban respondents include protection from lawsuits (68.0%), property tax reduction (52.0%) and control over when the land is used (48.0%). Only 29.3% of urban respondents would participate in a government sponsored public access program under the condition that they "make a profit". Public access programs

designed solely on monetary incentives would have a lower acceptance level to urban respondents than programs with varied incentives.

The monetary fee that would be acceptable to landowners who allow hunting and snowmobiling access was asked of all respondents. This question was designed so that respondents would suggest a fee that landowners in general should receive per acre per season, who allow hunting, snowmobiling, cross-country skiing or gardening. Urban respondents median suggested fee was at least twice as large as control respondents for each activity except snowmobiling. Urban respondents' suggested fee ranged from an average low of 10 dollars per acre, per person for cross-country skiing to a high of 20 dollars for hunting and gardening.

A primary goal of this study was the comparison of the urban county landowner's attitude toward allowing public access with a selected sample of control county landowners. Six hypotheses were formulated to study urban landowners. The hypotheses were divided into two categories, with the first category classifying respondents according to the location of their parcel (i.e. urban county or control county). These respondents were further classified based on their parcel's distance in mileage zones from one of eleven selected urban cities in southern Michigan. All respondents of this category were then questioned as to their attitude toward: a) allowing public access for hunting or snowmobiling (Hypothesis 1), b) who is allowed access

to hunt or snowmobile (Hypothesis 2) and c) the charge suggested for those landowners who do allow hunting or snowmobiling (Hypothesis 3).

The second category of hypotheses, involved dividing respondents based on the size of their parcel (i.e. large parcels or small parcels). As previously noted several types of recreational activities require a large area for performance. Thus, the size of parcel owned may influence the landowner's ability to allow certain types of recreational access. Owners of large or small parcels were also questioned as to: a) their attitude toward allowing public access for hunting or snowmobiling (Hypothesis 4), b) who is allowed access to hunt or snowmobile (Hypothesis 5) and c) the charge suggested for those landowners who do allow hunting or snowmobiling (Hypothesis 6).

The cross-tabulation of parcel location with if the landowner allowed public access (Hypothesis 1), indicated that urban respondents were significantly (less than 0.05) less likely to allow hunting or snowmobiling. This relationship was linear, with the opportunity for the general public to gain access least likely on parcels near major urban areas but increasing as distance increased from major urban areas. As previously mentioned, urban respondents were less likely to allow public access because they feared property damage and preferred to control when their parcels were used.

The cross-tabulation of parcel location with allowing the anyone who asks user group (Hypothesis 2), indicated

urban respondents were significantly less likely to allow hunting access to this user group. As previously noted, urban respondent limited public access to the family or friends user groups. These user groups require less supervision by the landowner. Urban respondents suggested a significantly higher paying to those landowners who allowed public access (Hypothesis 3) than did their more rural peers. The mean fee suggested by urban respondents was twice as large as that suggested by control respondents for four recreational activities including: hunting, snowmobiling, cross-country skiing and gardening. As previously noted, monetary incentives offered by government sponsored public access programs are less important to urban respondents than incentives such as control over the number of users and liability protection.

Respondents owning parcels classified as small were significantly less likely to allow hunting than respondents who owned parcels in the large acreage group (Hypothesis 4). Although no other significant relationships were found for Hypotheses 5 or 6, two respondent tendencies were noted. Respondents owning small parcels were less likely to allow access for snowmobiling than respondents who owned large parcels. Owners of small parcels also suggested a higher payment to landowners who allowed hunting or snowmobiling. As previously noted, owners of small parcels have less available land for recreational activities such as snowmobiling. Recreationists who use small parcels may also

compete with the owners' ability to produce crops.

Policy Recommendations

Dr. Donald F. Holecek (1983), in an address to the Forty-Eighth North American Wildlife Conference, noted that government programs which lease private lands for public recreation have several advantages. The greatest advantage, cites Dr. Holecek is the low cost to the government agency per recreation day provided. As previously noted, government leasing of private lands also permits a quick response to changing public recreational demands and allows the recreation budget to be appropriated in other areas such as construction and maintenance rather than to recreation land acquisitions. This author believes the results of this study have several implications for government sponsored public access programs. Three recommendations for public access programs are suggested including: 1) increased emhasis by government agencies on leasing of private urban lands, 2) additional incentives to landowners who participate in public access programs, and 3) improvement of public access program marketing strategies. All of the recommndations are designed to increase the accessibility of government sponsored public access programs to private urban landowners and thus provide expanded recreational opportunities for the public.

As previously noted, recreational authorities have called for government sponsored public access programs to

emphasize the leasing of private lands near metropolitan areas. Private urban lands located near cities may be the only open space available for public recreation for some segments of the population. Yet, less than 20% of this study's urban county landowner respondents wished to participate in a government sponsored public access program for hunting or snowmobiling. The directors of government sponsored public access programs are faced with the two-fold dilemma of obtaining participation from a relatively small number of urban county landowners compared to control landowners, and these owners have a generally more negative attitude toward public access programs. The success of public access programs in urbanized counties depends on a greater understanding of the urban landowner's attitude toward public access. A better understanding of the urban landowners' needs would produce attractive program modifications and extensions such as liability and crop protection. Program modifications which match the needs of the urban landowner will increase landowner participation rates.

Government sponsored public access programs can be modified by the number and types of incentives offered to participants. Monetary reimbursement to participating landowners is the general incentive of public access programs. Yet, of the eight incentive categories suggested to urban respondents in this study, the ability to make a profit was ranked last. Protection from lawsuits and control over

when the lands are used were two incentive categories most frequently indicated by urban respondents which they considered important for participation in a government sponsord public access program. The types of incentives which offer the urban landowner greater autonomy should be incorporated into public access programs. The incentives should be designed within reasonable parameters allowing user access but giving the participating landowners authority to protect themselves, property and crops.

Dr. Holecek in the same address to the North American Wildlife Conference, noted that the Michigan Public Access Stamp program provided a market service which linked a producer (private landowners) and consumers (hunters). This author recommends that the market service which Dr. Holecek noted, be developed into marketing strategy for use in government sponsored public access programs. The goal of the marketing strategy would be an increased and improved awareness of the access program among potential private landowner participants. The perspective urban respondents generally held of government sponsored public access programs was of goverment interfering into their private lives. Improvement of urban landowners' opinion of government's role in public access programs is essential for increased urban county landowner participation.

The questionnaire used in this study provided a section where respondents could write general comments. Two respondents' comments are presented as examples of where public

access programs can be improved. First, information about public access programs should be disseminated through local agencies. Landowners may be more inclined to participate in public access programs if they sign up through local agencies which they know and trust such as the Cooperative Extension Service of the Agriculture Stabilization and Conservation Service. Secondly, government sponsored public access programs should include a public education component to sensitize recreationists to the needs of landowners for personal safety and property protection. Such educational programs added to hunter safety classes is one method for expanding public awareness of their responsibilities if granted access to private property.

Research Recommendations

As previously noted, recreational authorities have called for more research on public access to private urban lands. This study of respondents owning lands in Southeastern Michigan was exploratory in design and meant to increase the knowledge of public access to private lands. This author recommends that three aspects of the relationship between owners of urban lands and their interest in public access be further studied. These aspects include: 1) continued research of the effect urbanization has on private urban landowners, 2) incentives to urban landowners which will open now-closed lands to public access, and 3) users' perspective of government sponsored public access programs.

Future researchers should examine the effects that urban areas have on private landowners. Several socio-economic characteristics of private urban landowners should be studied. Do urban landowners always have higher incomes, higher education levels and lower ages than non-urban landowners? What percentage of urban lands are operated by men or women? What are the percentage of absentee landowners, and what percentage of lands are owned by corporations? Crop production was the main land use of the average urban farm in this study. Do urban landowners concentrate the use of their land into crop production because of higher tax rates in urban areas? If urban landowners were offered lower tax assessments would they necessarily set aside land for recreational use?

A general examination of why some private lands in urbanized counties are closed to public access was one objective of this study. Researchers should continue to examine in greater detail why the majority of private urban lands are closed. Urban respondents of this study refused to participate in a government sponsored access program because of a fear of government interference. What specifically does the government do to interfere with private urban landowners? Taxes, control over the number of users, regulation and information requests could be types of interference. The major reasons why private urban lands are closed to public access need greater clarification. Future respondents could use rank order comparisons among a group

of given reason for refusing public access.

Urban landowners who allow public access should be studied. A minority of urban landowners included in this study allowed hunting or snowmobiling for free and apparently expected no monetary returns. By determining why these landowners allowed public access, now closed lands could possibly be opened. The urban county landowner respondents in this study generally restricted acceptance to family or friends. What characteristics does a stranger need to exhibit before he is allowed access? A personal interview survey could be used to determine owners' reasons for allowing or not allowing unrelated members of the general public to use their lands for recreational purposes.

A small but significant fraction of closed lands can be opened to the public by offering landowners desired incentives. Although monetary incentives are the most common in government access programs, this study found that respondents were more interested in several other types of incentives. Which incentives are the most important to landowners? As previously noted, landowners included in this study considered control over the number of users as an important incentive for them to participate in a government sponsored access program. What is the role of monetary incentives in landowners' acceptance of public access? Will increasing the payment offered to landowners in a public access program necessarily increase participation rates and is this relationship linear? Could incentives

such as liability protection and tax abatement substitute for direct cash payments?

An evaluation of government sponsored access programs should be conducted from the users perspective. Public users of private lands should be profiled to determine their socio-economic backgrounds. For example, public users of private lands differ if they are from urban or rural backgrounds? Public users of private lands should be surveyed concerning their views of government sponsored public access programs. What role do users expect of a public access program, and what role do they see for themselves? What rights do public users of private lands believe the landowner has, and what do they expect of the landowner? Public users could be surveyed for the type of recreation experience they expect on private lands. Comparisons between how a landowner views recreationists and how recreationists view landowners could be constructed.

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Appendix A

MICHIGAN STATE UNIVERSITY

FARMLAND OWNERSHIP AND USE STUDY

Dear owner,

As you may know Michigan State University, through its Cooperative Extension Service and Agricultural Experiment Station, has a long history of research activity which is designed to help meet the needs of the State's citizens. This work covers a wide variety of topics including agriculture, home economics, natural resources, recreation and so on. We are presently engaged in a study of recreational land use.

The reason we are writing to you is to ask your cooperation in this recreation project. Fellow landowners have assisted us in making this questionnaire as brief and clear as possible. Please take a few minutes of your time now to complete and return the questionnaire.

It is essential that the person that makes the decisions about the land fill out the questionnaire. If you are a manager and do not make the decisions about who uses the land, pass the questionnaire on to the owner.

We should add that your name was selected at random. All responses will be treated as confidential information. We have purposely selected a very small number of landowners to question. Thus, it is especially important that we have your help.

It is very important to follow directions carefully. If you have any questions about the study or your role in it please feel free to call collect either Mark LeGendre (research assistant) or Dr. Donald Holecek (project leader) in the Park and Recreation department at Michigan State University. (ph. 517-353-0823)

Thank you for your cooperation.

Recreation Research and Planning Unit
Michigan State University

Our records indicate that you own one or more parcels of land larger than 29 acres in size within KENT county Michigan. If this is not accurate please check the appropriate box below and return the questionnaire in the stamped self-addressed envelope. If you own more than 29 acres of land in this county please go on to question one.

- ☐ I have never owned such a parcel of land in this county.
- ☐ I have owned land in this county but have sold the land.
- ☐ Other (specify) _____.

1. Do you own more than one parcel in the county listed above, where a parcel of land is defined as a "plot of land larger than 29 acres in size or several adjoining smaller plots of land with a total acreage larger than 29 acres.

Yes ___ No ___

If YES, how many seperate parcels do you own? ____
and what is their total acreage? ____ acres

2. What is the size in acres of your single and or largest parcel? ____ acres

Please go on to the next series of questions but first read instruction A carefully.

A. IF YOU OWN MORE THAN ONE PARCEL, PLEASE ANSWER ALL REMAINING QUESTIONS FOR ONLY YOUR LARGEST PARCEL. IF YOU OWN ONLY ONE PARCEL CONTINUE ANSWERING FOR THAT PARCEL.

3. Is there an occupied residence on or near your parcel which you own?

Yes ___ No ___

If YES, is it occupied year-around? Yes ___ No ___

4. Approximately how many acres of your property is in the following land types? The total of your entries below should equal your answer to question 2.

A. Crops ____ acres
B. Pasture ____ acres
C. Open fields and brush ____ acres
D. Woods
   1. Natural ____ acres
   2. Plantation and orchards ____ acres
E. Buildings ____ acres
F. Marsh ____ acres
G. Ponds and lakes that hold water all year ____ acres
H. Other (specify) _____ ____ acres

5. Do you expect to sell all or a portion of your parcel within the next five years?

Yes ___ No ___ (PLEASE GO TO QUESTION 7.)

If YES, approximately how many acres? ___ acres (PLEASE GO TO QUESTION 6.)

6. What are the most important reasons for selling your parcel? (Please check all that apply)

A. Have a need for money ( )
B. Farming becoming less profitable ( )
C. Moving to another area ( )
D. Plan to retire ( )
E. Tax burden becoming excessive ( )
F. Foresee other investments becoming more profitable ( )
G. Other (specify) _____ ( )

7. Check the metropolitan area closest to your parcel.

___ Ann Arbor
___ Battle Creek
___ Detroit
___ Flint
___ Grand Rapids
___ Jackson
___ Kalamazoo
___ Lansing/E. lansing
___ Muskegon
___ Saginaw
___ Pontiac

Estimate the driving time and distance from your parcel to its city limits. Also estimate the distance from your parcel to the nearest paved road. (Zero if your land borders a paved road.)

Driving time ____ (minutes) and distance ____ (miles)
Distance to nearest paved road ___ (miles)

Please go on to the next series of questions but first read instruction B carefully.

B. THIS SERIES OF QUESTIONS DEALS WITH YOUR ATTITUDES TOWARDS TWO POPULAR RECREATION ACTIVITIES. FOLLOW DIRECTIONS CAREFULLY. WE HAVE TRIED TO DIRECT YOU AROUND QUESTIONS THAT DON'T APPLY.

HUNTING

8. Do you or would you allow hunting on your parcel? Please check yes or no and answer all questions within the yes or no columns.

Yes ___

IF YES, who do or would you allow to hunt on your parcel? Check all that apply.

A. Immediate family ( )
B. Relatives ( )
C. Friends and neighbors ( )
D. Anyone who asks ( )
E. Anyone whether or not they ask permission ( )

(PLEASE GO TO QUESTION 9.)

9. Presently the government is offering a payment to landowners who allow the public to use their land for hunting. In addition the owner has liability protection and control over the number of users. Would you be willing to place your parcel in this type of program?

Yes ___ (PLEASE GO TO QUESTION 12.)

No. ___ (PLEASE GO TO QUESTION 10.)

10. Why will you permit individuals to hunt but not participate in a government sponsored program? Please check all that apply.

A. Prefer to select who uses my land ( )
B. Don't like to become involved with government ( )
C. Too much work involved ( )
D. Other (specify) _____ ( )

(PLEASE GO TO QUESTION 12.)

No ___

If NO, why don't or wouldn't you allow hunting? Please check no more than three of the following items which you consider most important.

A. Prefer to protect privacy ( )
B. Too difficult to control number of users ( )
C. Fear of property damage ( )
D. Liability damage ( )
E. Family safety ( )
F. Don't believe in hunting ( )
G. Want game for personal use ( )
H. To avoid complaints from neighbors ( )
I. Other (specify) _____ ( )

(PLEASE GO TO QUESTION 11.)

11. Presently the government is offering a payment to landowners who allow the public to use their land for hunting. In addition the owner has liability protection and control over the number of users. Would you be willing to place your parcel in this type of program?

Yes ___

No ___

(PLEASE GO TO QUESTION 12.)

SNOWMOBILING

12. Do you or would you allow snowmobiling on your parcel? Please check yes or no and answer all questions within the yes or no columns.

Yes ___

If YES, who do or would you allow to snowmobile on your parcel? Check all that apply.

A. Immediate family ( )
B. Relatives ( )
C. Friends and neighbors ( )
D. Anyone who asks ( )
E. Anyone whether or not they ask permission ( )

(PLEASE GO TO QUESTION 13.)

13. Presently the government is offering a payment to landowners who allow the public to use their land for snowmobiling. In addition the owner has liability protection and control over the number of users. Would you be willing to place your parcel in this type of program?

Yes ___ (PLEASE GO TO QUESTION 16.)

No ___ (PLEASE GO TO QUESTION 14.)

14. Why will you permit individuals to snowmobile but not participate in a government sponsored program? Please check all that apply.

A. Prefer to select who uses my land ( )
B. Don't like to become involved with government ( )
C. Too much work involved ( )
D. Other (specify) _____ ( )

(PLEASE GO TO QUESTION 16.)

No ___

If NO, why don't or wouldn't you allow snowmobiling? Please check no more than three of the following items which you consider most important.

A. Prefer to protect privacy ( )
B. Too difficult to control number of users ( )
C. Fear of property damage ( )
D. Liability damage ( )
E. Family safety ( )
F. Want area for personal use ( )
G. To avoid complaints from neighbors ( )
H. Other (specify) _____ ( )

(PLEASE GO TO QUESTION 15.)

15. Presently the government is offering a payment to landowners who allow the public to use their land for snowmobiling. In addition the owner has liability protection and control over the number of users. Would you be willing to place your parcel in this type of program?

Yes ___

No ___

(PLEASE GO TO QUESTION 16.)

16. It has been suggested that the government should consider sponsoring a program whereby private landowners would receive a financial payment for allowing the public to use a portion of their parcel for gardening. Payments would be negotiated with individual landowners and would include compensation for any special services which the owner is willing to provide. Do you think you would favor placing your parcel in this type of program.

Yes ___ No ___ (SPECIFY WHY NOT) _____.

17. If asked would you allow any of the following activities on your parcel?

	YES	NO		YES	NO
A. Cross-country skiing	( )	( )	D. Hiking	( )	( )
B. Camping	( )	( )	E. Picnicking	( )	( )
C. Fishing	( )	( )	F. Motor biking	( )	( )

18. For any activity you do not currently allow, under what conditions might you be willing to allow public use of your parcel for recreation. Check no more than three of the following items which you consider most important.

A. Under no condition ( )
B. If I am compensated for damage which results on my property ( )
C. If I can make money ( )
D. If I have control over who uses my parcel ( )
E. If I am protected from lawsuits ( )
F. If my property taxes are reduced ( )
G. If I can control when people use my parcel ( )
H. Other (specify) _____ ( )

19. Would you be interested in establishing any of the following commercial (for a profit) recreation activities? Check all that apply and circle any in which you are currently involved commercially.

A. Hay rides ( )
B. Berry picking (U-pick) ( )
C. Fruit orchards (U-pick) ( )
D. Horseback riding ( )
E. Fish ponds ( )
F. Christmas trees (U-cut) ( )
G. Campgrounds ( )
H. Firewood sale (U-cut) ( )
I. Gardening by individuals ( )
J. Other (specify) _____ ( )

20. Past experience has suggested that government sponsored recreation programs are most successful upon larger acreages. Check the following statement which best describes your attitude towards cooperating with neighbors to make a larger acreage available for public recreation.

A. I have no interest in public programs of this nature ( )
B. I am willing to initiate such a cooperative lands program ( )
C. I would be willing to place my land in such a program but am not interested in assuming a coordination role ( )

21. What is your age? 225

22. Is your annual income above or below the state median of $18,000

Above ___ Below ___

23. During the last year what percentage of this income came from these sources?

A.	Farming	____ %
B.	Non-agricultural employment (i.e. professional and factory)	____ %
C.	Retirement income (i.e. pension)	____ %
D.	Other (specify) _____	____ %
	TOTAL	100 %

24. Whether or not you would be interested in participating in such programs, what amount per acre, per season, do you feel landowners should be offered to permit the public to use private land for each of the following activities. Enter 0 if you feel no payment should be offered to landowner participants.

Hunting $ ____ Cross-country skiing $ ____ Snowmobiling $ ____ Gardening $ ____

25, Please write any additional comments you may have in the space provided below.

_____

_____

_____

_____

(THANK YOU FOR YOUR TIME AND COOPERATION)

If you accidently misplaced the return envelope provided, please mail to:

Parks and Recreation Department
Recreation Research and Planning Unit
131 Natural Resources Buildging
Michigan State University
East Lansing Michigan 48823

Appendix B

Dear landowner:

Two weeks ago we sent you a questionnaire requesting some information about the land you own in Michigan. If you have already returned the questionnaire, please consider this a special "THANK YOU" for your promptness.

If, as we often do ourselves, you have put the questionnaire aside to finish it later, please take 10-15 minutes now to complete and return it to us. Since we could only send questionnaires to a small number of landowners, your responses are vital to its success.

If you have misplaced the questionnaire and wish another please call collect the Department of Park and Recreation Resources ph. 517-353-0823 and leave your name and address with the secretary.

Thank you for your time and cooperation.

Sencerely,

Mark J. LeGendre
Project Coordinator

Donald F. Holecek
Project Director