

ATTITUDES OF LANDOWNERS AND LANDUSERS TOWARD RECREATION ON  
PRIVATE LAND IN SHEBOYGAN COUNTY, WISCONSIN

by

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## ABSTRACT

Landowners and landusers were surveyed in 2 townships in Sheboygan County, Wisconsin concerning their attitudes toward recreation on private lands. The major purpose of the study was to obtain information regarding landowner/landuser relations in Sheboygan County. The information would be used in the development of a program aimed at improving those relations that would actively involve both the landowner and the sportsman.

Sheboygan County landusers rely heavily on access to private lands in pursuit of their sport. Over 90% of the survey respondents used private land for some form of outdoor recreation. Most of the private land (76%) in Sheboygan County was not posted, although 80% of those landowners not posting had the policy that anyone not asking permission would be asked to leave. The majority of reasons (51%) given by landowners for posting their land were related to landuser behavior, primarily vandalism and disrespect. The reasons most often cited by landowners requiring permission were "...to know who is on the land" (56%) and "...to control access" (34.5%).

The majority of landowners (83%) said that their policy toward posting had stayed the same over the past 5 years while 75% of the landusers felt that posting policies had become more restrictive. Factors influencing

a landowner's decision to become more restrictive included damage caused by recreationists ( $X^2=13.54$ ,  $df=1$ ,  $P<0.001$ ) and whether the landowner hunted ( $X^2=4.85$ ,  $df=1$ ,  $P<0.05$ ). Only 9% of landowners had a previous cooperative agreement with their neighbors; but the majority of those who had (95%), did so to increase rather than restrict recreational opportunities.

Property damage caused by landusers was reported by 31% of landowners. The major types of damage involved vandalism or stolen property (35%), cut fences (24%), damaged crops (22%), and cut or damaged trees (13%). Property damage apparently had a significant effect on a landowner's decision to post his land. Fifty percent of those who posted had suffered property damage as compared to only 26% of those who did not post their land ( $X^2=10.88$ ,  $df=1$ ,  $P<0.01$ ).

Forty-two percent of the landowners and 46% of the landusers agreed with the idea of landowner compensation for allowing landusers on their property. However, nearly one-half of the landowners and 35% of the landusers remained neutral. Landowners and landusers were nearly identical in their ranking of forms of compensation; property tax credits (40%, 51%), gifts or donations of labor (25%, 35%), and signs declaring "OFF LIMIT" areas (16%, 34%) were the 3 most preferred incentives listed by landowners and landusers, respectively. It was apparent that Sheboygan County landowners were not interested in

monetary incentives. Only 16% favored cash payments as an appropriate form of compensation, and only 1% had leased their land or charged fees for hunting or other forms of outdoor recreation.

Of 13 hunting problems presented, both landowners and landusers rated disrespect for the landowner or property and failure to seek permission from the landowner as the 2 most important hunting problems. However, a sample of landusers who did not respond to the survey (non-respondents) rated those 2 problems ninth and sixth, respectively.

Twenty-one percent of Sheboygan County landusers belonged to an organized sportsmen's club; however, only 6% of landowners reported having contact with members of a sportsmen's club concerning hunting or trapping on their land. The majority of landowners (71%) felt that a landuser who belonged to an organized club was a more responsible sportsman, but only 45% of landusers shared this feeling.

Hunter education was supported by both groups as a method to instill more responsible and ethical behavior in hunters. Eighty-one percent of the landowners said that they would be more likely to give permission to someone who had completed an advanced hunter education course, which included landowner/landuser relations. In addition, 70% of the landusers said that they would be willing to take an advanced course as part of a landowner/landuser

relations program. Seventy-nine percent of the landowners and 96% of the landusers were in favor of a program to improve landowner/landuser relations, with 46% of the landowners and 69% of the landusers also willing to participate. Of 5 different types of landuser identification presented for use in the program, a wallet-sized identification card (46%, 66%) and vehicle identification (40%, 44%) were the 2 most preferred by both the landowners and landusers, respectively.

Landowners and landusers showed both a need and a desire to improve relations with the other, but also indicated a lack of understanding of how to go about it. Programs such as the one presented in this thesis can be an effective method of bringing about cooperation and involvement, thereby improving relations.

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## INTRODUCTION

Problems between landowners and outdoor recreationists have existed for a long time. Jackson and Anderson (1982) and Trainer (1982) noted that farmer/sportsman relations were an important issue dating back at least 80 years. However, with a continually increasing number of recreationists trying to use a steadily decreasing land base, the problem of landowner/landuser relations is quickly becoming a very serious one. Approximately 85% of the land in Wisconsin is in private ownership, and 80% of the game harvested in Wisconsin is taken from private land (Trainer 1982). Since 73% of Wisconsin hunters spend most of their time on private land (Klessig and Hale 1972), these private landowners potentially have a considerable effect on recreational opportunities in Wisconsin.

Many landowners who were once willing to allow hunting and other recreational activities on their land, have been plagued by trespass and vandalism until they feel that they should no longer allow landusers on their land. This is compounded by the feeling of some hunters that "...the game belongs to everyone," even if it means trespassing on private land in pursuit of that game. Many landusers do not realize the problems facing landowners who allow them the use of their land, such as liability (real or perceived), possible damage to crops

and livestock, or even the safety of their families. Thus they may not understand why landowners post their land.

In a survey of New York landowners, Brown (1974: 174) stated "Of the 42% of posting landowners, 97% indicated that a behaviorally-related reason on the part of recreationists contributed to their decision to post". In many instances, a bad experience from a landuser, or even a story of a bad experience from a neighbor, can cause a landowner to refuse access to everyone (Jackson and Anderson 1982). However, this is not the norm, as studies have shown that access can be gained to even posted lands if the landuser simply asked permission (Jackson and Norton 1980, Brown et al. 1984). In addition, Waldbauer (1966) found that 80% of the New York landowners who posted their land did so to control, rather than prohibit, access to the land.

It has been recognized that one of the major problems facing landowner/landuser relations is a lack of communication (Brown 1974, Jackson and Norton 1980, Schoenfeld and Griffin 1981, Jackson and Anderson 1982). Successful communication can only be achieved by a willingness to get involved, both on the part of the sportsman as well as the landowner. This communication link must extend not only to the agency personnel responsible for managing the resource, but also to the university researcher involved with studying the various

aspects of landowner/landuser relations (Heberlein and Klepinger 1984).

Several reports concerning landowner/landuser relations in Wisconsin indicated the need to provide incentives to landowners for allowing recreationists to use their property (Horvath 1982, Keener 1982, Hunter/Landowner Council 1983). In many western states, most notably Texas, landowners view wildlife as a marketable resource and lease their land to hunters on a per acre, per season, and even a per animal basis (Burger and Teer 1981). The success of this system in Texas is primarily due to a long tradition of lease agreements (early 1920's) and a lack of suitable public land (<2%) (Teer and Forrest 1968).

Most Midwestern landowners, however, either do not have the desire or the information necessary to pursue the wildlife resource as an economic asset (Bishop 1981, Sheriff et al. 1981). In a report on the future of fee hunting for white-tailed deer (Odocoileus virginianus) in Wisconsin, Beattie (1982) noted that only 20% of Wisconsin agriculturalists said they would consider allowing someone they did not know to hunt for a fee. In addition, Klessig and Hale (1972) reported that only 36% of Wisconsin hunters would be willing to pay landowners for the right to hunt on their land. A more recent study revealed only 39% of east-central Wisconsin hunters were in favor of a private land leasing agreement (Duffey and Stiehl 1983).

However, pilot programs in New York and Michigan have utilized cash payments to landowners for providing public access (Brown and Dawson 1977, Horvath 1982). These programs have been successful in opening over 99,150 ha (245,000 acres) for public hunting in the 2 states. In addition, 97% of New York landowners who participated, said that they would continue participating if the program were reoffered.

Researchers have stressed the importance of tailoring programs to specific areas, based on the individuality of landowner/landuser problems indigenous to those areas (Decker et al. 1979, McConnell 1981, Jackson and Anderson 1982). However, none of these programs can reach their full potential unless the landowner and the landuser communicate and become actively involved. In 1983, the Sheboygan County Chapter of the Izaak Walton League, together with representatives of the Wisconsin Department of Natural Resources, began developing a program to improve relations between landowners and landusers in Sheboygan County, and to open more private land for public recreation. The program was named GRIP (GrassRoots Ike's Program) and was designed to emphasize a broad array of recreational activities on private land, as well as a grass-roots approach.

To understand the attitudes of Sheboygan County landowners and landusers concerning recreation on private land, surveys of both groups were conducted in spring and

fall 1984. The objectives of the study were: (1) to assess the problems facing landowners and landusers concerning recreation on private land, (2) to identify workable solutions addressing the above problems that would be mutually acceptable to both groups, and (3) to aid in the development of a program based on those solutions that would actively involve the landowner and the landuser to improve overall relations.

## STUDY AREA

Sheboygan County is located in the lowlands of southeastern Wisconsin and borders Lake Michigan on the east (Figure 1). It had a 1982 population of 101,104 with nearby Milwaukee County having a population of 964,675 (Wisconsin State Atlas 1982). Total land area was 1,331 km<sup>2</sup> (506 mi<sup>2</sup>) with the principle land use being agriculture (75%) and <15% covered by trees (Collins 1972). Major agricultural crops included corn, alfalfa, oats, peas, and wheat. Livestock operations were also prevalent with dairy, beef cattle, and chickens representing the major operations.

Sheboygan County had a long history of landowner/landuser conflicts, due in part to the lack of public land together with pressures from the relatively urban cities of Sheboygan and Milwaukee. On the other hand, it also had a long history of involvement in conservation programs by sportsmen's clubs; many of these have involved private lands. There were 28 sportsmen's clubs in Sheboygan County during this study, providing an excellent potential for sportsmen involvement through club activities with private landowners.

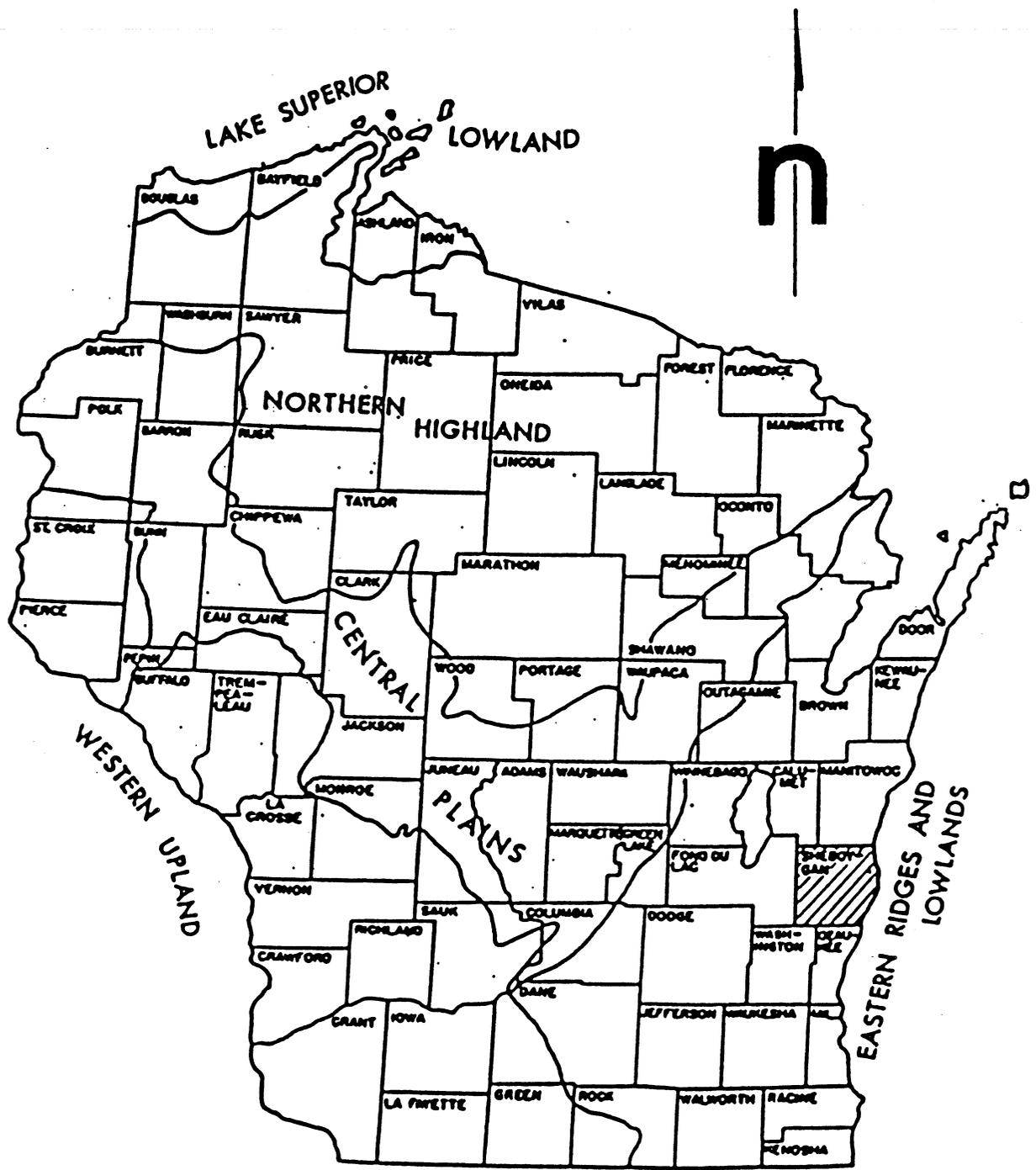


Figure 1. Location of Sheboygan County and the 5 geographic provinces of Wisconsin (from Hole, 1980).

## METHODS

### Questionnaire design

Two questionnaires were developed to assess the attitudes of both landowners and landusers in Sheboygan County regarding public recreation on private land (Appendicies 1 and 2). The questionnaire design utilized recommendations by Dillman (1978) and was also based on questionnaires used in previous studies (Jackson and Norton 1980, Duffey and Stiehl 1983).

### Landowner survey

Two townships in Sheboygan County were chosen for the landowner survey: the Township of Lima, containing 171 landowners, and the Township of Hermann, containing 166 landowners. The townships differed on the basis of recreational potential with the Township of Lima being more intensively farmed, thus making it less attractive to recreationists than the Township of Hermann. The townships were originally to be surveyed entirely by personal interviews, but due to time and manpower constraints the Township of Hermann landowners were interviewed and the Township of Lima landowners received a mail questionnaire. This also provided the opportunity to compare the effectiveness and efficiency of a mail

survey as opposed to a personal interview survey. All landowners in both townships were surveyed (N=337).

During March 1984, all landowners were sent an introductory letter 2 weeks in advance of the questionnaire explaining the objectives of the study and requesting their cooperation. Within the following 2 weeks a cover letter, questionnaire, and stamped, self-addressed return envelope were mailed to each landowner in the Township of Lima. During that same period, interviewers conducted surveys of each landowner in the Township of Hermann using the same questionnaire format. Personal interviews were conducted by local members of the Izaak Walton League who had been briefed by the researcher on interview techniques using recommendations from the Survey Research Center (1976). Due to the high combined (both mail and personal) return rate (83%), no follow-up mailings or non-respondent surveys were conducted for either survey method. Questions addressed property characteristics, posting and access policies, landowner compensation, attitudes toward landusers, importance of hunting problems, interest in GRIP, and other factors.

#### Landuser survey

A sample of 1200 landusers was selected randomly from all big game, small game, sportsman (combination gun deer/small game/fishing), archery, and trapping licenses

purchased in Sheboygan County in 1983. This represented approximately 10% of all licenses purchased in the County. During September 1984, an introductory letter similar to that used in the landowner survey was sent to all selected landusers. This was followed in 2 weeks by a cover letter, questionnaire, and stamped, self-addressed return envelope sent in the mail. Due to budget constraints no follow-up mailings were used. However, a follow-up telephone survey of 46 randomly selected non-respondents was conducted to address the possibility non-response bias. The entire questionnaire was used in the non-respondent survey.

To better aid in understanding the attitudes of landowners and landusers regarding similar issues, selected questions from the landowner survey were also incorporated into the landuser survey. These questions addressed posting policies, landowner compensation, the importance of hunting problems, and interest in the GRIP program, among other factors. Data from both questionnaires were analyzed with the aid of the Statistical Package for the Social Sciences (SPSS) computer program (Nie et al. 1975). Students t-tests were used to determine if statistical differences existed between question responses from the mail and personal interview surveys in the landowner study, and between respondents and non-respondents from the landuser survey.

## RESULTS AND DISCUSSION

### Survey Response

The response rate of the 2 methods used in the landowner survey indicated a difference in effectiveness (response rate) but not in overall accuracy of responses (comparability). Of the 171 landowners surveyed by mail, 118 (69%) returned usable questionnaires. This was somewhat higher than other landowner surveys concerning recreation on private land: 53% (Kitts and Law 1974), 49% (Duffey and Stiehl 1983), and 52% (Guynn and Schmidt 1984). However, Brown (1974) reported a 75% response rate in a study of New York landowners.

The personal interview survey resulted in a much higher response rate over the mail survey method. Of the 166 landowners interviewed personally, 163 (98%) completed usable questionnaires. However, the manpower required for the personal interview survey was much greater than that of the mail survey, although in this case the overall cost was less due to the recruitment of volunteer interviewers (Izaak Walton League members) and the lack of postage. A governmental agency, however, cannot always be expected to obtain volunteer help such as in this study, thus the overall cost of a personal interview survey performed by a state agency would most likely exceed that of a mail survey.

Based on the results of the t-test, no difference existed between the results of the 2 methods for 83% of the questions at  $P > 0.05$ . This suggested that a mail survey could be used in place of a personal interview survey (or vice-versa), depending on the cost of each method, with similar results. Combining the results of the 2 survey methods yielded an overall response rate of 83% (281 returned of 337 distributed). Such a high response rate indicated interest in trying to improve relations between the landowner and the landuser.

However, this same degree of concern did not seem to exist within the landuser group, as indicated by a lower response rate. Of the 1200 landusers surveyed by mail, 564 (47%) responded with usable questionnaires. Forty-six non-respondents were selected randomly and interviewed by telephone in the evenings. To better aid in understanding the differences between respondents and non-respondents, the entire questionnaire was utilized in the non-respondent survey. The results of the t-tests indicated no difference existed between respondents and non-respondents for 73% of the questions at  $P > 0.05$ . However, several important differences did exist which will be addressed below.

#### Landowner profile

The majority of landowners (58%) in both townships were actively engaged in farming and 86% of those owned

their land. Hobby farmers and absentee landowners made up 15% of the total while an additional 26% owned and lived on the property but did not farm. The average property size was 47.9 ha (118.4 acres) with 41.6% of the landowners renting an average of 10.3 ha (25.4 acres) to others and 34.3% renting an average of 12.2 ha (30.1 acres) from others. This was approximately one-half the size of the average farm in Wisconsin (92.5 ha (228.6 acres)) as reported by Zekor (1985). The average length of residency by landowners who lived on their land was 34.2 years.

A relatively small number of Sheboygan County landowners participated in hunting (22%) when compared with landowners throughout the state (50%, Zekor 1985). Eighty-three percent of landowners who hunted did so on their own land, although 68% indicated that they hunted on other private lands; 53% also hunted on public land. Thus, while most landowners who hunted used their own land, they also utilized other lands as well, both public and private.

#### Landuser Profile

Since the landuser sample was chosen solely from hunting and trapping licenses, all of the respondents indicated that they hunted. Nearly all (94%) of the respondents indicated that they hunted deer in Wisconsin while a somewhat smaller number (87%) hunted other game

as well. Participation in other activities included fishing (89%), hiking (46%), snowmobiling (33%), berry and/or nut picking (21%), and trapping (9%). Twenty-four percent of the respondents reported they also participated in activities other than those listed, with the majority of respondents participating in cross-country skiing.

The average age of Sheboygan County landusers was 34.5 years. When compared with the landowners' average length of residency (34.2 years) it is possible that a generation gap may contribute to a lack of communication between landowners and landusers. Many of today's landusers are city-dwellers who no longer have ties with the rural communities. Thus, many may be unaware of the landowner's problems and concerns, and may not understand what the landowner expects from a landuser. Age also played a factor in the participation rates of some activities, with younger landusers more likely to participate in snowmobiling ( $t=-7.94$ ,  $df=713$ ,  $P<0.001$ ) and trapping ( $t=-1.97$ ,  $df=713$ ,  $P<0.05$ ).

#### Land Productivity

Landowners were asked to rate the ability of their land to produce income from wood, agricultural crops, and natural resources, including wildlife. A 5-position Likert scale was used with a rating of (1) as "poor" and (5) as "excellent" (Appendix 1: Question 4). Agricultural

cropping was a main source of income for most Sheboygan County landowners ( $\bar{x}=4.2$  on Likert scale) while only 13% rated their land's ability to produce income from wood products as good to excellent ( $\bar{x}\geq 4.0$ ). Approximately 70% of the landowners rated their land's ability to produce natural resources  $\leq 3$  ( $\bar{x}=2.7$ ). Factors associated with a landowner's rating of his land's agricultural income ability were amount of land owned ( $r=0.27$ ,  $P<0.001$ ) and length of residency ( $r=0.22$ ,  $P<0.005$ ). The greater the amount of land owned by the landowner and the longer the length of residency, the higher the rating given to the ability of the land to produce income from agriculture.

#### Use of Private Land By Recreationists

Very little public land which could be used for hunting, trapping, and snowmobiling existed in Sheboygan County. Landusers had to rely primarily on access to private lands for these forms of recreation. This was evident in that 91% of the respondents used private land for some form of outdoor recreation and 51% indicated that they used private land for more than 50% of their activities. A significant difference existed between respondents and non-respondents regarding use. Non-respondents tended to use private land for recreation to a lesser extent than respondents with only 78% using private land ( $t=2.77$ ,  $df=607$ ,  $P<0.01$ ) and only 24% of

those using it for more than 50% of their activities ( $t=2.39$ ,  $df=543$ ,  $P<0.05$ ). This difference did not only concern use but also extended to attitudes toward landowners, which will be noted later.

Snowmobilers used private land more often than did other recreationists ( $t=2.37$ ,  $df=607$ ,  $P<0.05$ ). This can create problems for landowners due to the noise of the machines and the possible damage they can cause. Brown (1974) also found that snowmobilers were a problem for New York landowners. The increased popularity of snowmobiling at that time put greater pressures on the use of private land and led to more widespread posting. In Sheboygan County, however, snowmobilers banded together to form clubs that policed their own ranks. This has improved relations with landowners, and has increased access to private land for snowmobiling.

### Posting and Trespass

#### Current posting policies

The posting of private land to restrict access for hunting and other forms of outdoor recreation has become a major problem in many areas of the United States. Brown and Thompson (1976) found that the rate of posting in New York increased from 25% in 1963 to 42% in 1973, a 68% increase over the 1963 rate. It was estimated that if

posting continued at that rate, all private lands in New York would be posted by 1993 (Brown et al. 1984). In Wisconsin, Thompson (1968) reported a posting rate of 22.8% in a statewide survey of landowners. In a more recent study of Wisconsin landowners, Zekor (1985) found that the statewide posting rate was 52.5%. Assuming that these figures are representative of the entire state, the posting rate has increased by a factor of 2.3 in the past 17 years. However, most landowners would allow access to their land provided that landusers ask permission (Zekor pers. comm.).

Sheboygan County landowners were more lenient in their posting policies, with only 20% indicating that they posted their land. Of those landowners who posted, 35% allowed absolutely no hunting or trespassing, 30% allowed family and friends to use the land, and 35% allowed access with permission. Seventy-six percent of the landowners surveyed indicated that they did not post their land at all, although over 80% of those responded that anyone not asking permission would be asked to leave. The remaining landowners who did not post indicated that anyone was welcome to use their land anytime without asking permission.

Hobby farmers and absentee landowners have sometimes been unfairly criticized by landusers of buying up land and then posting it for their own use and excluding others. Although studies have shown this to be the case

in some areas of the state (Jackson and Norton 1980), it does not seem to be the situation in Sheboygan County. Hobby farmers did not post their land at a higher rate than landowners who were actively engaged in farming as a livelihood. In fact, hobby farmers and absentee owners who hunted were more likely to hunt on public lands than landowners who were actively farming ( $t=3.60$ ,  $df=55$ ,  $P<0.01$ ).

Many reasons were given by landowners for their particular posting policies. Of those landowners who posted, over 50% of their reasons were related to landuser behavior, most notably vandalism and disrespect. These findings were similar to Blackmer's (1984) in which 51% of Minnesota landowners refused access due to unethical behavior of hunters. Remaining reasons most often cited by both posting and non-posting landowners requiring permission were "...to know who is on the land" (56%) and "...to control access" (34.5%).

Little relationship existed between land use characteristics and posting rates. However, those landowners who had lived on their land 10 years or more were more likely to post than landowners residing on their land less than 10 years ( $t=-2.26$ ,  $df=225$ ,  $P<0.05$ ). This could be due in part to landowners living on their land more than 10 years having had more negative experiences with landusers. In addition, landowners who rated the agricultural potential of their land as low

were more likely to post than landowners giving their land a high rating ( $t=-3.57$ ,  $df=253$ ,  $P<0.001$ ). This suggested that landowners more intensively engaged in agriculture either did not receive the same amount of recreationist pressure due to the lack of wildlife habitat, or they did not post because their land was cultivated and by law they were not required to post. However, this latter factor was addressed by Zekor (1985) who found that only 4.1% of Wisconsin landowners did not post because their land was cultivated and thereby considered posted. In addition, none of the Sheboygan County landowners in this study indicated that their land was not posted because it was under cultivation.

#### Changes in posting policy

When asked if their posting policies had changed over the previous 5 years, the majority of landowners (83%) said that their policy had stayed the same with 16% reporting that their posting policy had become more restrictive (Appendix 1: Question 10). Only 1% said that their policy had become less restrictive in the last 5 years.

The 2 main factors influencing a landowner to become more restrictive were: incurring damage by recreationists ( $X^2=13.54$ ,  $df=1$ ,  $P<0.001$ ) and whether the landowner hunted ( $X^2=4.85$ ,  $df=1$ ,  $P<0.05$ ). Landowners suffering property damage by recreationists were much more likely to

restrict access. Approximately 55% of those who had suffered damage became more restrictive compared to 26% of those who had not suffered property damage. Whether the landowner was a hunter also seemed to affect the posting policy, with 35% of hunting landowners becoming more restrictive as opposed to 20% of non-hunting landowners. Brown et al. (1984) found that New York landowners who hunted were more likely to post their land than those who did not hunt. Although Sheboygan County landowners who hunted did not post more than non-hunting landowners, the increasing pressures put on the use of private land and the resulting abuses could force some hunting landowners to restrict use for themselves.

Landusers similarly were asked how they perceived posting policies to have changed during the previous 5 years (Appendix 2: Question 4). Only 23% felt that posting policies had remained the same, while 75% thought that posting had become more restrictive. Such a difference in actual vs. perceived posting policies indicated a lack of communication between landowners and landusers. Landowners indicated that most of the land was available for use by recreationists, provided they ask permission and respect the property; yet most landusers felt that access had become more restricted. One-on-one communication with the landowner is probably one of the best methods a landuser can use to secure places to hunt, yet the results indicated that most

landusers did not make the effort to contact landowners. A related area of concern and one which Decker et al. (1979) suggested should be studied is the effect of perceived access problems on hunting recruitment and desertion rates.

One problem with direct interpretation of findings such as these is that "becoming more restrictive" is a relative term that depends on the landowners' previous posting policy. It could imply going from "NOT POSTED: ANYONE WELCOME" to "NOT POSTED: PERMISSION REQUESTED", or from "POSTED: WITH PERMISSION" to "POSTED: ABSOLUTELY NO HUNTING OR TRESPASSING". Its actual effect on recreational access is therefore difficult to determine. However, any indication that landuser access is becoming more restricted (whether from the landowner or the landuser) should be taken into consideration.

When asked if they expected to change their posting policies in the years ahead, 83% of landowners said that they did not, and 88% of those had the same posting policy during the last 5 years (Appendix 1: Question 11). Of the 17% who expected to change their policies, 85% were not posting at the time, and 60% had not changed their posting policy in the previous 5 years. This was indicative of a growing intolerance to landusers who abuse their privileges on private land. This was evidenced by 76% of landowners citing landuser disrespect, irresponsibility, or continued failure to ask permission

as reasons for changing their policy. These findings coincided with those of Jackson and Norton (1980) who found that landowners planning to change their posting policies cited problems with landusers, specifically hunters, as their main reason for doing so.

The remaining 24% of landowners expecting to change said that their posting policies would be dependent on the new laws. The 2 laws specified were both in the proposal stage at the time of the survey. One was Wisconsin's new trespass law, which more clearly explained a landowner's liability exemption for injuries received by landusers on his property. The other was the recently adopted group hunting law for white-tailed deer, which made it legal for 1 member of a hunting party to shoot as many deer as there were unfilled tags. This law received considerable negative input from landowners who felt that it would not only lead to an overharvest of deer, but also create a safety problem because of what they felt would be excessive shooting. Whether these claims are valid makes little difference because landuser access can be restricted in either case. Both of these laws are currently in effect but the impact they have had on posting rates is yet unclear.

Other factors associated with a landowner's expectation to change his posting policy were the land's ability to produce income from wood products ( $r=0.21$ ,  $P<0.005$ ) and the amount of deer hunting pressure ( $r=0.20$ ,

$P < 0.005$ ). Landowners who rated their land's ability to produce income from wood products as high were more likely to change their posting policy as were landowners who had experienced heavy use by deer hunters on their land. These 2 factors seem interrelated since land with a greater ability to produce income from wood products might be more desirable to deer hunters than cultivated land. In addition, Jackson and Norton (1980) found that landowners who did not post were more likely to rate their land as more suitable to produce income, and more likely had a higher use by deer hunters. This suggests that landowners who currently do not post their land have experienced an increase in usage by recreationists and are more likely to consider changing their policy in the future. One possible effect of an increase in posting would be to concentrate more landusers on unposted land, thus putting a heavier burden on the landowner who does not post. This landowner may change his policy to control hunter numbers, consequently leading to more posted land.

#### Access for deer hunting

In many areas of the eastern United States the opening of the deer hunting season causes a great deal of anxiety for landowners. Many of the problems between landowners and landusers stem from the deer hunting season and the hunter concentrations that accompany it. Thus,

many landowners attempt to control access by posting their land or in some other way changing their policy to restrict hunter numbers. To determine if this was the case in Sheboygan County, landowners were asked if their policy toward allowing access for deer hunting was different from other types of hunting and recreation (Appendix 1: Question 12). Most (92%) reported that their posting policies did not change prior to the deer season while the majority of the remaining 8% stated that either they only allowed friends and family to hunt or they discouraged large parties of deer hunters. Thus, while some became more restrictive during deer season, it seems that the majority felt that either they did not receive enough use to warrant a change in policy, or that their policy was adequate to control the increased hunter pressure.

#### Cooperative agreements

The desire to control access has taken a number of forms in many areas of the United States. One of these is the formation of cooperative agreements between neighboring landowners. These range from a mutual agreement to hunt on each other's land to entire blocks of land being posted to restrict access. Only 9% of Sheboygan County landowners reported having a cooperative agreement with their neighbors. The majority (95%)

reported either having a mutual agreement to hunt each other's land or providing large blocks of land for snowmobile club use. Only 5% of those who utilized cooperative agreements did so to post large blocks of land. Jackson and Norton (1980) found that landowners who posted their land were more likely to have cooperative agreements with their neighbors concerning deer hunting. However, only 33% of Sheboygan County landowners who had utilized cooperative agreements posted their land. This suggests that although cooperative agreements were used infrequently by Sheboygan County landowners, their main purpose has been to increase recreational opportunities rather than restrict them. Therefore, there is a potential to promote cooperative agreements among neighboring landowners for the purpose of providing access to landusers, particularly sportsmen's clubs.

#### Use and trespass

To determine which landuser groups were responsible for the most use of private land, landowners were asked to characterize the total amount of use their land received in 1983 by individual activities (Appendix 1: Question 15). Landowners reported that deer hunting, snowmobiling, and small game hunting characterized the majority of usage on their lands, with 45%, 39%, and 35% of the landowners reporting at least moderate use from these activities, respectively.

Landowners were also asked to report approximately the number of times their land was used without their permission in 1983 for the same 8 landuser activities (Appendix 1: Question 16). Deer hunting represented the heaviest use and also had the most trespass associated with it, with 40% (N=109) of landowners reporting an average of 6.2 trespass occurrences by deer hunters. Small game hunters were the second largest group of trespassers with 33% (N=91) of the landowners citing an average 4.6 incidents of trespass. Although snowmobilers represented the second largest user group, they ranked fourth in the amount of trespass with only 9% (N=25) of landowners reporting an average of 4.9 incidents of trespass. This was most likely due to the recent increase in Sheboygan County snowmobile clubs that policed themselves and worked at improving relations with local landowners. This type of cooperation is needed within the ranks of hunters, particularly deer hunters, to develop positive relationships with private landowners.

#### Property damage by landusers

Property damage by landusers was one of the major reasons cited by Sheboygan County landowners for posting their land. Thirty-one percent of the landowners surveyed had suffered some sort of property damage due to the use of their land by recreationists. Types of damage included:

vandalism or stolen property (35%), cut fences (24%), crop damage (22%), and trees cut or damaged by hunters (13%). The effect property damage had on the posting rate was obvious: 50% of the landowners who posted suffered property damage compared to only 26% of those who did not post ( $X^2=10.88$ ,  $df=1$ ,  $P<0.01$ ). In addition, landowners who suffered damage were more likely to be more restrictive in their posting policies ( $t=3.96$ ,  $df=261$ ,  $P<0.001$ ) and were more likely to change their policy in the future ( $t=4.21$ ,  $df=246$ ,  $P<0.001$ ).

The results suggested that although there were many factors which influenced a landowner's decision to post or change his posting policy, the majority were the result of landuser behavior which might be addressed through education and a stronger alliance among hunters. In areas where they are active, sportsmen's clubs can be an effective tool for improving relations with landowners through agency programs (e.g. pheasant stocking) or projects of their own (e.g. stocking, habitat improvement). This not only brings sportsmen together, but also allows them the opportunity to work with private landowners, thereby creating an atmosphere to improve relations.

#### Incentives For the Landowner

Incentives have been an integral part of many private lands programs throughout the United States.

While most incentives are directed toward integrating wildlife habitat on farmlands, several have addressed the aspect of providing access for hunting and other forms of outdoor recreation. Pennsylvania's Cooperative Farm Game Program is a prime example with an involvement of nearly 19,000 farms totaling over 900,000 ha (2.25 million acres) (Horvath 1982). The program utilizes safety zones around buildings, preference to cooperators in the stocking program, increased patrols by Game Protectors, free wildlife plantings, and other incentives. Other states, such as Michigan, have utilized cash payments to landowners through the purchase of an access stamp by hunters. This program has been successful in raising over \$500,000 to pay landowners an average of \$5.11/ha (\$2.07/acre) for leases (Horvath 1982).

Much ambiguity surrounds the prospect of fee hunting however, both in the eastern United States, where it is relatively new, and even in some western states where fee hunting has been a long-standing tradition. Guynn and Schmidt (1984) reported that although fees were a desirable incentive to Colorado landowners and that 57% of the deer hunters were willing to pay a fee, only 14% of the private land in Colorado was open to fee hunting in 1977. This has increased only slightly, reasons for which were related primarily to a lack of landowner information on fee hunting.

Eastern and Midwestern landowners have been less receptive to fee hunting, with only 10% of New York landowners willing to adopt a fee system (Brown 1974) and more than 99% of Ohio landowners stating that they would not charge a fee (Henry and Graw 1981). Wisconsin landowners have also shown a reluctance to utilize a fee policy. Just over 3% of Wisconsin landowners currently charge a fee or lease their land (Zekor pers. comm.) and Duffey and Stiehl (1983) found that monetary incentives were not favored by most east-central Wisconsin landowners. Sheboygan County landowners showed a similar disinterest in adopting a fee system with only 1% of the landowners indicating that they leased or charged a fee. Some possible reasons for this might include the long established system of "free" hunting, or a lack of information on how to develop a fee arrangement (Zekor 1985). Another possible reason may be that landowners receiving over \$500/year in lease fees would be subject to an increase in liability for landusers who are injured on their land. Other factors may enter into this as well. Beattie (1982) emphasized the need for a supply and demand study in Wisconsin to determine the barriers to a fee hunting system for deer.

Wisconsin has tried to provide the landowner with some incentive to manage for wildlife on his property through several programs. Programs such as Acres for Wildlife, the Woodland Tax and Forest Crop Laws, and more

recently the Dodge County Wildlife Project have all tried to employ sound wildlife and forest management practices on private lands while providing incentives such as tax breaks, free wildlife plantings, technical assistance, and signs declaring project property.

Few projects, however, have focused on the landowner/landuser relations aspect of private lands management. One in particular, Project Respect, has been successful in some northern counties but in southern counties where access to private land is more of a problem, it has met with limited success (Katsma pers. comm.). Part of the problem is due to lack of manpower to initiate contacts with landowners and a general lack of information promoting the program. Duffey and Stiehl (1983) found that 58% of hunters and 74% of landowners surveyed were not familiar with Project Respect. Another problem could be that any program associated solely with a regulatory agency such as the Department of Natural Resources will inherently encounter rejection by landowners simply due to that association (Jackson and Anderson 1982). The extent of that rejection will depend heavily upon the working relationship of the agency employees with the landowner. Incentives offered through Project Respect include: signs to designate project property, written permits issued to hunters, control over numbers of hunters on the land, a free wildlife habitat plan, and free wildlife trees and shrubs. However, all the work

such as posting the signs, controlling hunter numbers, issuing permits, and planting trees and shrubs must be done by the landowner. The Hunter/Landowner Council (1983) recommended that Project Respect be expanded to include Departmental assistance on such things as posting signs and controlling hunter numbers to take some of the burden off the landowner.

Both Sheboygan County landowners and landusers were asked if they believed landowners should receive compensation for allowing hunters or other recreationists on their property (Appendix 1: Question 19 and Appendix 2: Question 5). Many landowners agreed but nearly half remained neutral, suggesting that many landowners were themselves unsure if compensation was warranted (Table 1). Since it was not stated in the questionnaire where the compensation would come from (state or landuser), it cannot be determined how landowners would react to differential payment schemes. However, some landowners felt that if they received compensation from a state agency like the DNR, there would be "strings" attached which might reduce some of their control over the number of landusers they allow (Kirby et al. 1981). This reason was cited by several landowners in this survey.

Landusers were also in favor of compensation with a large percentage of both respondents and non-respondents in agreement with the idea of incentives (Table 1). However, even though a significant difference did not

Table 1. Attitudes of Sheboygan County landowners and landusers toward landowner compensation for allowing landusers on their land.

Attitude	Landowner (%) N=265	Landuser (%) N=557	Landuser NR (%) <sup>a</sup> N=46
Strongly agree	13	9	7
Agree	29	37	43
Neutral	48	35	20
Disagree	7	13	26
Strongly disagree	3	5	4

<sup>a</sup>NR= non-respondent group

exist between respondents and non-respondents, a much larger proportion of non-respondents disagreed with landowners receiving compensation. Non-respondents used private land to a lesser extent than respondents, suggesting that they also had different attitudes toward landowners than did respondents. This may be further emphasized by the fact that they did not originally respond to the survey.

Respondents were asked to indicate the forms of compensation which they felt would be appropriate (Appendix 1: Question 19A and Appendix 2: Question 6). Landowners and landusers (respondent group) were nearly identical in their ranking of incentives (Table 2). A property tax credit was the most preferred form of compensation. A gift or donation of labor from the landuser, and provision of safety zone signs were the second and third most preferred forms of compensation, respectively. Landowners also ranked cash payments as third compared to landusers who ranked it fifth, although the actual percentages were very similar.

In the Northeast, Decker et al. (1979) noted that increased law enforcement efforts were among the most beneficial and practical incentives used to enhance cooperative landowner agreement programs. Decker et al. (1979: 3) stated...."The sense of security and peace of mind cooperative landowners acquire by more frequent law enforcement patrols may be worth much more to them than

Table 2. Ranking of possible forms of compensation by Sheboygan County landowners and landusers for allowing landusers on private land.

Incentives	Landowner N=243	Landuser N=522	Landuser NR <sup>a</sup> N=46
Property tax credit	40 <sup>b</sup> (1) <sup>c</sup>	51(1)	61(4)
Gift or donation of labor	25(2)	35(2)	72(2)
Signs declaring "OFF LIMIT" areas, danger zones, etc.	16(3)	34(3)	89(1)
Cash payment	16(3)	14(5)	17(6)
Increased law enforcement patrols	11(5)	18(4)	72(2)
Increased license fee for landowner compensation	NQ <sup>d</sup>	10(6)	39(5)

<sup>a</sup>NR= non-respondent group

<sup>b</sup>percentage responding

<sup>c</sup>( )= rank of each incentive

<sup>d</sup>NQ= not on questionnaire

financial remuneration." Sheboygan County landowners evidently do not share these same feelings, however, as they rated "increased law enforcement patrols" last of 5 suggested incentives. These results were similar to those of Zekor (1985) who found that Wisconsin landowners did not favor increased warden patrols as an incentive to encourage wildlife management practices on their land.

The non-respondent landusers were much less definite about which forms of compensation they identified as being appropriate, with 4 of the 6 incentives suggested being favored by >60% of the group. The only 2 incentives not favored by the majority of non-respondents were increased license fees and cash payments, which were also the least preferred incentives by the original respondents. These findings coincided with those of Duffey and Stiehl (1983) who found that although most hunters were in favor of landowner compensation, they preferred that it come from some other source rather than direct payments.

#### Attitudes Toward Hunters, Hunting, and Wildlife

Landowner attitudes toward hunters and hunting play a major role in how they react to access programs. The behavior of fellow hunters in the field has been shown to greatly affect the overall experience of hunters (Jackson et al. 1979). Both landowners and landusers were asked to rate the overall behavior of other hunters and recreationists as they had observed them. A 5-point

Likert scale was used with (1) representing "poor" and (5) representing "excellent" behavior (Appendix 1: Question 20 and Appendix 2: Question 7). Eighty-seven percent of landowners and 89% of landusers rated the behavior of other hunters as at least somewhat good ( $>3$ ) ( $\bar{x}=3.5$ ). However, 19% of landowners rated hunter behavior as excellent compared to only 10% of landusers. One possible explanation for this could be that hunters themselves are in a better position to observe the behavior of other hunters than are most landowners. Regarding the behavior of other recreationists, landowners gave a similar rating whereas only 79% of the landusers said that the behavior of recreationists other than hunters was at least somewhat good ( $\bar{x}=3.2$ ).

Factors associated with a landowners' rating of hunter behavior given by landowners were: suffering property damage ( $r= -0.34$ ,  $P<0.001$ ), changes in posting over the last 5 years ( $r=-0.26$ ,  $P<0.001$ ), and current posting policy ( $t=-3.42$ ,  $df=253$ ,  $P<0.01$ ). Whether a landowner had suffered property damage due to recreationists seemed to be a major influence on that landowner's generalized perceptions of hunter behavior. Nearly 30% of landowners suffering damage rated hunter behavior as relatively poor ( $<3$ ), compared to only 7.6% of landowners not reporting damage ( $X^2=28.45$ ,  $df=4$ ,  $P<0.001$ ). In addition, 33% of landowners whose posting policy had become more restrictive rated hunter behavior

<3 as did 32% of landowners who posted their land. This was compared to 9% who had not become more restrictive and 9% who did not post ( $\chi^2=21.21$ ,  $df=4$ ,  $P<0.001$  and  $\chi^2=26.44$ ,  $df=4$ ,  $P<0.001$ , respectively). These results coincided with those of Jackson and Norton (1980) and further supported the interpretation that posting was closely related to landuser behavior.

Respondents were asked to indicate the importance of 13 hunting problems on a 5-point Likert scale with (1) representing "least important" and (5) representing "most important" (Appendix 1: Question 21 and Appendix 2: Question 8). Numerous studies have shown that most landowners are concerned primarily with knowing who is using their land and simply request that landusers obtain permission and respect the land (Stoddard and Day 1969, Decker et al. 1979, Jackson and Anderson 1982, Duffey and Stiehl 1983, Brown et al. 1984). From the results of this survey it was evident that Sheboygan County landowners shared these concerns. Both the landowner and the landuser respondents felt that disrespect for the landowner or his property and failure to seek permission were the 2 major hunting problems (Table 3). These findings differed from those of Jackson and Norton (1980) who found that although landowners rated failure to seek permission as the major problem, hunters ranked it only sixth. This suggests that Sheboygan County landusers were more aware of the problems that concern landowners

Table 3. Hunting problems ranked (by importance) by Sheboygan County landowners and landusers.

Hunting problem	Landowner N=220	Landuser N=556	Landuser NR <sup>a</sup> N=46
Disrespect for landowner or property	4.49 <sup>b</sup> (1) <sup>c</sup>	4.39(2)	3.96(9) <sup>d</sup>
Failure to seek permission from landowner	4.45(2)	4.44(1)	4.11(6) <sup>d</sup>
Usage of alcohol while hunting	3.96(3)	4.26(4)	4.31(3)
Unsafe gun handling	3.91(4)	4.25(6)	4.32(2)
Indiscriminant shooting	3.86(5)	4.03(8)	3.73(10)
Littering	3.69(6)	4.26(5)	4.07(7)
Shooting illegal game and letting it lay	3.57(7)	4.24(7)	4.31(4)
Hunting in large parties (10 or more)	3.33(8)	3.08(12)	3.07(12)
Poaching	3.32(9)	4.33(3)	4.36(1)
Taking more than legal limit	3.27(10)	3.90(9)	4.14(5)
Failure to retrieve wounded game	2.98(11)	3.67(10)	4.00(8)
Poor marksmanship (lack of practice)	2.90(12)	3.15(11)	3.50(11)
Group bag (hunting for party)	2.84(13)	2.74(13)	2.74(13)

<sup>a</sup>NR= non-respondent group

<sup>b</sup>group mean for each problem

<sup>c</sup>( )= rank for each problem

<sup>d</sup>significant difference between landuser respondents and non-respondents (P<0.05)

who allow access to their property than those in the 1980 study. Consequently, there may be a greater potential to bring about a change within their own ranks. However, the attitudes of the non-respondents more closely parallel those of the hunters in the 1980 study, ranking failure to seek permission as sixth and disrespect as ninth. These results were significantly different than those of the original respondents ( $P < 0.05$ ) and suggest that the non-respondents had different attitudes concerning private landowners than the respondent group. However, it is difficult to determine exactly what effect those attitudes might have on the overall landowner/landuser relationship.

Landowners were given a chance to relate their experiences with landusers without the aid of predetermined categories by citing both the positive and negative characteristics they had observed in hunters and other recreationists. Of the 22% who cited positive aspects, 35% indicated that landusers had asked permission to use the land and an additional 25% stated that landusers had either shown respect or good sportsmanship. However, a greater number of landowners (30%) stated that they had observed negative behavior, with the majority (65%) citing either disrespect or failure to seek permission. Other problems observed included disregard for safety (17%), littering (10%), and drinking (4%). In addition, landowners were asked what landusers could do to help them and what they expected from a person whom

they allow to use their land (Appendix 1: Questions 34-35). In both cases, respect for the landowner and his property was the major response (46% and 72%, respectively). While many of these observations were reiterated from the previous question regarding hunting problems, it emphasized the importance of showing respect to the landowner and his property and to always ask permission to use the land.

One question that can be asked regarding this problem is: If landusers know these things are important to landowners, why do they continue to trespass and show disrespect? Part of the answer lies in the fact that although the majority of landusers were aware that these problems were important, many landusers were not, as evidenced from the non-respondent survey. In addition, Jackson and Norton (1980: 21) addressed the question of why hunters do not ask permission and found 5 major reasons given by hunters themselves: (1) fear of being rejected, (2) lack of time, (3) difficulty in determining ownership of land, (4) pursuing wounded game, and (5) feeling that the game belongs to the hunter and that any land not being farmed was open to hunters. Many of these are legitimate problems which might be corrected by hunter education and better communication with landowners. However, hunters having no concept of private land ownership are more difficult to educate and pose one of the greatest threats to landowner/landuser relations.

Self-policing of snowmobilers by snowmobile clubs has been effective in Sheboygan County at reducing snowmobile trespass on private land and improving relations with local landowners. Whether this method can be effective on a larger scale with hunters is not clear. However, Montana had limited success with this method through recommendations encouraging the use of "peer pressure" and a toll-free hotline to report violations, which were sent to all sportsmen and agricultural groups in the state (Poston 1981). Jackson et al. (1979) also noted the potential to use peer pressure to reduce violations since most hunters stated that fines did not bother them, but were very concerned about being identified in the newspaper as violators. Thus the potential exists to use exposure of trespassers and vandals as a method to improve landuser behavior on private land.

In order to determine the perceptions of Sheboygan County landowners and landusers toward wildlife ownership, respondents were asked 2 questions regarding whether wildlife belonged to the public or to the private landowner. Included with each question was a 5-position Likert scale with (1) representing "no" and (5) representing "definitely" (Appendix 1: Questions 26-27 and Appendix 2: Questions 11-12). Most landowners and landusers were in agreement that wildlife did not belong to the private landowner, with 68% of the landowners and 60% of the landusers responding <3 on the scale.

Landusers, however, felt that wildlife belonged more to the public ( $\bar{x}=4.1$ ) than did the landowners ( $\bar{x}=3.3$ ) with 73% of the landusers responding  $\geq 4$  compared to only 49% of the landowners. Furthermore, 22% of landowners felt that wildlife did not belong to the public at all, although only 9% felt that wildlife definitely was the property of the landowner. These results suggest that while most landowners agreed that they did not own the wildlife, many were unsure as to just where that ownership lies. This could possibly be a suppressant to the adoption of fee hunting strategies by landowners due to the question of ownership. One partial solution to this problem could be the incorporation of state wildlife ownership policies into information pamphlets concerning farm wildlife programs, particularly those involving hunter access or fee strategies.

#### Participation in Sportsmen's Clubs

Twenty-one percent of Sheboygan County landusers belonged to an organized sportsmen's club. These findings were similar to those of Klessig and Hale (1972) in which 22% of the Wisconsin hunters surveyed belonged to some sportsmen's or conservation club. Factors associated with participation were age ( $t=4.85$ ,  $df=713$ ,  $P<0.001$ ) and use of private land ( $X^2=4.36$ ,  $df=1$ ,  $P<0.05$ ). Older landusers were more likely to belong to a club than

younger ones. In addition, 10.2% of those who did not use private land belonged to a club compared with 21.8% of those who did use private land. No significant difference was found between respondents and non-respondents concerning club participation although fewer non-respondents (15%) belonged to a club.

Sheboygan County sportsmen's organizations have had a long history of participation in DNR programs concerning private landowners, particularly the pheasant (Phasianus colchicus) stocking program. However, only 6% of the landowners reported that they had been contacted by a sportsmen's group concerning hunting or trapping on their land. Thus, while sportsmen's clubs have been active in programs that supply game, they have evidently not explored the possibilities of securing access to private land for use by the club. Leasing arrangements with landowners by sportsmen's clubs have been effective at improving relations in the Manitowoc area of eastern Wisconsin (Jackson and Norton 1980). These agreements have been successful because the clubs took responsibility for their members, thereby reducing landowner anxiety.

Respondents were also asked if members of a sportsmen's group were more responsible recreationists than non-members. A 5-position Likert scale was used with (1) representing "probably not" and (5) representing "very likely" (Appendix 1: Question 24 and Appendix 2: Question 10). Seventy-one percent of the landowners felt that a

landuser who belonged to a sportsmen's group was more responsible ( $\geq 4$ ) ( $\bar{x}=4.1$ ). On the other hand, most landusers did not agree, with only 45% responding  $\geq 4$  ( $\bar{x}=3.2$ ). Landusers who were members of a sportsmen's club were more likely to feel club members were more responsible ( $t=8.76$ ,  $df=714$ ,  $P<0.001$ ).

These results indicate that landowners tended to consider club members as more responsible landusers, and would be more likely to grant permission to a club member simply on the basis of that association. This suggests a strong potential to improve relations between landowners and landusers through increased sportsmen's club involvement. Information regarding the opportunities in clubs and how to become involved must be made more available to non-club members. Sportsmen's club membership could be stressed in hunter education courses as a method of becoming more involved with the private landowner, provided of course, that the clubs are actively involved with landowners. Other possibilities include newspaper advertisements and personal contact by club members, which could be productive methods to increase membership in sportsmen's clubs.

#### Hunter Education

Hunter education courses have long been used by states to initiate young hunters into the sport by teaching them firearms safety, wildlife management, good

sportsmanship, and ethical behavior. Wisconsin certified over 236,000 young hunters in its first 17 years of operation from 1966 to 1983 (Hunter/Landowner Council 1983). In addition, the program recently became mandatory for all hunters born after 1 January 1973. While this was perceived as a major step in the right direction, some researchers have emphasized the need to expand hunter education programs in other ways as well (Jackson et al. 1979, Duffey and Stiehl 1983, Hunter/Landowner Council 1983). One in particular is that of adult or advanced hunter education. Many Wisconsin hunters have never taken a hunter education course, and the problems between hunters and landowners indicate there are still areas where improvements are needed.

Whether these problems can be solved (at least in part) through advanced hunter education is a question that remains unanswered. Jackson et al. (1979) reported that hunters who committed wildlife law violations were often more deeply involved with the sport than those who did not violate, and Winstead (1983) found that graduates of hunter safety courses actually had higher accident rates than non-graduates, although the higher accident rate of graduates was believed due to more time spent in the field.

These results seem to indicate that hunters who have been more educated in safety and species identification and are more involved, are more likely to violate and be

involved in hunting accidents. Whether the advanced hunter education graduates would exhibit these same tendencies toward trespass and vandalism is unknown. However, Jackson et al. (1979) felt that if hunters became directly involved with wildlife programs, rather than just the specific aspects of hunting a certain species, they would be less inclined to violate. This is the main focus of the advanced hunter education course to be used in the GRIP program: to involve the hunter directly with the landowner and private lands programs. In addition, since the hunter depends on the private landowner for a place to hunt, once he is made aware of the problems facing landowners and how to go about solving them, he may increase his chances of finding more places to hunt.

Both landowners and landusers were asked if a hunter who had participated in a hunter education course was a more responsible and ethical hunter than one who had not. A 5-point Likert scale was used with (1) designating "probably not" and (5) designating "very likely" (Appendix 1: Question 25 and Appendix 2: Question 9). Most landowners (82%) felt that hunter education led to more responsible and ethical behavior ( $\geq 4$ ) while only 64% of landusers had similar feelings ( $\bar{x}=4.1$  and 3.8, respectively). In addition, 81% of the landowners said they would be more likely to give permission to a hunter who had successfully completed an advanced hunter

education program which included landowner/landuser relations.

When asked if advanced hunter education should be required for hunters to participate in the GRIP program, 60% of respondents felt that it should be. However, differences existed between landowners who hunted and those who did not. Nearly 65% of non-hunting landowners felt the advanced hunter education course should be a requirement compared to only 48% of the landowners who did hunt ( $X^2=5.08$ ,  $df=1$ ,  $P<0.05$ ). Although some landusers had doubts about the effectiveness of hunter education (36% indicating  $\leq 3$ ), 70% said that they would be willing to participate in an advanced hunter education program on a continuing basis if it would mean more private land being opened for hunting and other recreation. These results reveal strong possibilities for hunter education to open up the lines of communication between the landowner and the hunter by identifying the landowner's problems and concerns and how to go about improving relations. Jackson et al. (1979) felt that the primary solution for improving hunter responsibilities was in education and that communication and involvement were the key.

Factors associated with a willingness to take an advanced hunter education course were age ( $r=-0.16$ ,  $P<0.001$ ) and attitude toward landowner compensation ( $X^2=11.31$ ,  $df=1$ ,  $P<0.001$ ). Younger landusers tended

to be more willing to take the hunter education course than older ones, as were those who agreed with landowner compensation. Seventy-eight percent of those in agreement with compensation were willing to take the course compared with 61% of those disagreeing with landowner compensation. Surprisingly, over 50% of the landusers who said they would not take the course also responded that a hunter who had taken a hunter education course was more responsible and ethical ( $\geq 4$ ).

#### Interest in GRIP

A willingness to become involved in a program such as GRIP is dependent upon many factors. Interest, attitudes, time, and resources all play a role in the decision of a landowner or landuser to participate. When asked if they would be in favor of a program designed to help improve landowner/landuser relations, 79% of the landowners and 96% of the landusers indicated that they were in favor of the program. However, when asked if they were willing to participate in the program, the percentages dropped dramatically. Only 46% of the landowners and 69% of the landusers said they were willing to participate. Although respondents and non-respondents to the landuser survey seemed to differ in their attitudes toward private landowners, they did not differ in their support of or willingness to participate in the program with actually

slightly more of the non-respondents in favor of the program and willing to participate.

Several factors were associated with whether or not a landowner was in favor of the program (Table 4), although few similar factors existed for the landusers. These findings suggest that landowners who were apathetic toward the program had little interest in providing places to hunt and fish and generally had more restrictive access policies than other landowners.

Landowners have continually emphasized that one of the main things they are interested in is knowing who is using their land. Respondents were presented with a list of 5 different types of hunter or recreationist identification for use in the GRIP program and asked to select the ones they thought would be most appropriate. For both groups, a wallet-sized ID card was the most preferred form of identification (Table 5). Vehicle identification and a back tag were the second and third most preferred types of identification, respectively. The Hunter/Landowner Council (1980) also felt a back tag for small game hunters would be an effective method to control trespass. A colored arm band and cap were the least favored forms of identification with both landowners and landusers. Many landowners stated that a cap or arm band would be too difficult to identify at a distance and that they could be easily used by someone else whereas the other forms of identification would identify specific

Table 4. Factors for which significant differences existed between Sheboygan County landowners in favor of GRIP versus those not in favor of the program.

Characteristics of landowners not in favor of GRIP	X <sup>2</sup> or t value	df	P<
Less likely to give hunter education grad permission	7.73	253	0.001
Less likely to feel wildlife belongs to public	4.08	249	0.001
Less likely to allow stranger to use land	2.61	252	0.05
Less likely to feel landowner should receive compensation	-2.43	257	0.05
Indicates lighter use by hunters	8.35	3	0.05
More likely to post land	4.36	1	0.05

Table 5. Ranking of forms of recreationist identification for use in the GRIP program by Sheboygan County landowners and landusers.

Form of identification	Landowner N=274	Landuser N=541
Wallet-sized ID card	46 <sup>a</sup> (1) <sup>b</sup>	66(1)
Vehicle identification	40(2)	44(2)
Back tag	39(3)	37(3)
Contrasting colored arm band	15(4)	25(4)
Blaze orange cap with special logo	15(5)	12(5)

<sup>a</sup>percentage responding

<sup>b</sup>( ) = rank of each form of identification

persons. This is much more beneficial to the landowner in that it gives him a way to trace down a landuser if problems should occur.

Time can play a major role in a landowner's willingness to participate in a program such as GRIP. To determine if this was a factor, landowners were asked if they would be willing to take the time to check identification of hunters or recreationists who contact them to use their land. Seventy-two percent of the respondents said they would be willing to take the time. However, of those landowners who were in favor of the program but not willing to participate, willingness to take the time to check ID was the major factor differentiating them from landowners who were willing to participate (Table 6). In addition, time also seemed to be a factor in differentiating landusers who were in favor of GRIP but either willing or not willing to participate. Landusers not willing to become involved were less willing to take the advanced hunter education course and less likely to belong to a club, both of which are time consuming activities (Table 7). They were also less likely to fish, hike, snowmobile, and hunt game other than deer which further suggests a lack of time commitment.

Overall, both landowners and landusers indicated a need and a desire to improve relations with the other, but also showed a lack of understanding of how to go

Table 6. Factors for which significant differences existed between Sheboygan County landowners in favor of the GRIP program and willing to participate versus those in favor of the program but not willing to participate.

Characteristics of landowners in favor of program but not willing to participate	t-value	df	P<
Less likely to take time to check hunter ID	-3.15	184	0.005
Less likely to hunt	-2.71	180	0.01
Less likely to consider allowing a stranger to use land	-2.61	179	0.05
Indicates more trespass	2.30	141	0.05

Table 7. Factors for which significant differences existed between Sheboygan County landusers in favor of the GRIP program and willing to participate versus those in favor of the program but not willing to participate.

Characteristics of landusers in favor of program but not willing to participate	t-value	df	P<
Less willing to take advanced hunter education course	-12.75	643	0.001
Less likely to belong to club	-4.78	657	0.001
Less likely to hunt on private land	-4.03	642	0.001
Less likely to hunt game other than deer	-3.98	637	0.001
Rates "littering" as less important	-3.88	650	0.001
Less likely to hike	-3.57	657	0.001
Rates "failure to seek permission" as less important	-2.67	650	0.01
Rates hunter behavior higher	2.52	632	0.05
Less likely to fish	-2.51	657	0.05
Less likely to snowmobile	-2.47	657	0.05
Less likely to use private land	-2.47	657	0.05

about it. By working together (through advanced hunter education and personal contact), landowners and landusers can understand each others' problems, thereby creating an atmosphere to effectively improve relations.

## PROGRAM IMPLICATIONS

Landusers in Sheboygan County and most other areas of the United States are heavily dependent upon private land for hunting and other forms of outdoor recreation. Posting by landowners is due to many factors, but the majority are related to problems with landusers. However, many landowners will allow access if permission is asked. Nearly 60% of Sheboygan County landowners said they would consider allowing someone they did not know personally to use their land with permission. Most posting was done to control access rather than to restrict hunting, thus improvement in landuser behavior could significantly increase the amount of private land open to public use. These improvements in landuser behavior can only come about through direct involvement with the private landowner, particularly through sportsmen's clubs.

Many landowner/landuser problems are unique to certain areas, as evidenced by numerous discrepancies with results from other studies. Programs must be tailored to address those specific problems. This has been one of the primary factors in the success of the GRIP program to date. Jackson and Anderson (1982: 11) identified several guidelines for state agencies to follow to individualize landowner/landuser relations programs: ...."1) create general awareness among landowners and hunters in particular; 2) locate and motivate the movers and

catalysts who can create programs and communication at the local level (sportsmen's clubs, wardens, farm organizations, etc.); and finally, 3) identify and communicate a variety of workable models that have been tested elsewhere in the state or other states."

Cooperative agreements between landowners and sportsmen's clubs to provide hunting and other recreational opportunities is a relatively untapped resource in Wisconsin and several other Midwestern states. These agreements could be beneficial not only to the club, in that it is provided with a place to hunt, but also to the landowner, so he can feel more secure in knowing who is using the land and who to call if problems develop. In addition, members of the club could police the property for trespassers and could also become involved with conservation projects to benefit the landowner. Incentives could even be offered to the clubs to work more closely with private landowners (Hunter/Landowner Council 1983).

Many incentives have been used to motivate private landowners to increase public access on their lands, some successful and others unsuccessful. Monetary incentives are generally not favored by most Midwestern landowners, although Michigan has a private land lease program that has been successful. Property tax credits, on the other hand, have been favored by many landowners as an incentive to set aside land for wildlife or to allow hunting and

other forms of recreation on their land. The problem with tax considerations, however, is that it takes a long time for them to be enacted, and they are often difficult to justify. Other popular incentives include safety zone signs, wildlife plantings, and recognition days, all of which could be incorporated into sportsmen's club activities. However, popularity of incentives can vary among states or even regions within a state, thus planned incentives should be checked for previous acceptability in the areas they are to be used.

There are many reasons why habitat and access programs have not received the support hoped for by state agencies. Attitudes toward wildlife, landusers, the agency involved, time and cost factors, and adequate incentives are just a few and all play a role in a landowners' willingness to participate in a private lands wildlife or hunter access program.

Adequate distribution of information regarding the project is another area of concern and should be considered carefully. This was one of the problems noted for Project Respect's lack of support. Many landowners and landusers simply were not familiar with it. The Hunter/Landowner Council (1983) recommended an increase in the number of wildlife managers to work mainly with private landowners. This would allow managers to more actively enlist landowner support for programs such as Project Respect and would strengthen relationships

between the agency and the landowner. Other methods of information distribution include: presentations by agency personnel at agricultural group meetings, information pamphlets (which could be made available at locations other than just the state wildlife agency field office), and contact with key individuals in the community (e.g. farm group leaders) who have an influence on other landowners.

Hunter education has been a tool used extensively by state agencies to promote safety and ethical behavior in the field. Most hunter education courses, however, are geared mainly to the young, first-time hunter. Few have been used to instill ethical behavior in the older, more experienced hunters, many of whom have never had a hunter safety or education course. Both landowners and hunters in Sheboygan County showed an interest in an advanced hunter education course which included landowner/landuser relations as part of the GRIP program. This may lead to a decrease in trespass and vandalism, and also to improved communication between the landowner and the landuser from a better understanding of each other's problems.

The results of this and other similar studies showed that landowners were mainly concerned with knowing who was on their land. Several forms of landuser identification were selected by both landowners and landusers as being the most preferred for use in the GRIP

program. One of these, a wallet-sized ID card, has been printed by the Sheboygan County Chapter of the Izaak Walton League and will be distributed to license outlets throughout the County, along with information regarding the GRIP program. Space is provided on the front of the card for the landuser's name, address, phone number, vehicle description and license number, the number of people in the party, and the use for which permission is given. On the back of the card is a short paragraph on responsible behavior, the County Sheriff's Office phone number to report trespass, and the phone number of the Conservation Hotline to report game violations.

Two other strategies will be used in the GRIP program to promote better landowner/landuser/agency relations. One will be the use of small (10-20 acre) parcels of land as wildlife habitat demonstration areas to encourage landowners to set aside unproductive or marginal cropland for wildlife. Another will be the use of a series of situation films, short films depicting various situations concerning landowner/landuser relations such as trespassing, vandalism, and posting. The films will be distributed throughout the County to various sportsmen's club and landowner group meetings and will also be available for use by other groups such as schools and 4-H. These films may lead to more responsible behavior concerning the use of private land.

Although little has been mentioned regarding the wildlife aspect of private lands management, it is indeed a closely related subject. Landowner/landuser relations is probably one of the major barriers to the successful implementation of wildlife management practices on private lands. Some landowners would rather give up wildlife than put up with unethical and irresponsible landusers. Zekor (pers. comm.) found that the major reason given by Wisconsin landowners for not managing for wildlife on their land was that they did not want to attract hunters. Interagency projects such as Wisconsin's Dodge County Wildlife Project have utilized an array of state and federal agencies familiar to the landowner, such as SCS and ASCS, to implement wildlife management and soil conservation practices on private land. Such projects could also incorporate landowner/landuser relations aspects to create a better atmosphere to promote wildlife. The future of hunting and other forms of outdoor recreation depends upon the availability of private land and it is in the hands of the landuser to secure that future by strengthening relations with the private landowner.

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**Appendix 1. Landowner questionnaire**

LANDOWNER - LANDUSER QUESTIONNAIREGRIP (Grass-Roots Ike's Program)

1. How many acres do you currently own?  $\bar{x}=118.4$  . N=269, range=15-800
- A. How many acres do you rent to others?  $\bar{x}=25.4$  . N=114
- B. How many acres do you rent from others?  $\bar{x}=30.1$  . N=94
2. Which of the following best describes your situation? N=253
- |            |   |
|------------|---|
| <u>50%</u> | A. ACTIVELY FARMING (OWN THE LAND)            |
| <u>8%</u>  | B. ACTIVELY FARMING (RENT THE LAND)           |
| <u>5%</u>  | C. HOBBY FARM (OWN THE LAND)                  |
| <u>1%</u>  | D. ABSENTEE LANDOWNER (LAND IS NOT WORKED)    |
| <u>9%</u>  | E. ABSENTEE LANDOWNER (LAND IS WORKED)        |
| <u>26%</u> | F. OWN AND LIVE ON THE PROPERTY (DO NOT FARM) |
| <u>2%</u>  | G. OTHER (PLEASE EXPLAIN: _____)              |
3. If a resident, how many years have you lived on your land?  $\bar{x}=34.2$  . N=237, range=1-99
4. Please indicate on the following scale your land's ability to produce income.
- |                               |  |             |        |        |                  |        |               |       |
|-------------------------------|--|-------------|--------|--------|------------------|--------|---------------|-------|
|                               |  | <u>POOR</u> |        |        | <u>EXCELLENT</u> |        |               |       |
| A. WOOD PRODUCTS              |  | 1(45%)      | 2(15%) | 3(24%) | 4(10%)           | 5(6%)  | $\bar{x}=2.2$ | N=231 |
| B. FROM AGRICULTURAL CROPPING |  | 1(2%)       | 2(1%)  | 3(15%) | 4(47%)           | 5(39%) | $\bar{x}=4.2$ | N=268 |
| C. BY OTHER MEANS             |  | 1(40%)      | 2(7%)  | 3(27%) | 4(7%)            | 5(20%) | $\bar{x}=2.6$ | N=15  |
|                               | (PLEASE EXPLAIN: <u>hogs (50%), tree plantations-</u> (50%)) |             |        |        |                  |        |               |       |
5. Please indicate on the following scale your land's ability to produce natural resources:
- |  |  |             |        |        |                  |        |               |       |
|--|--|-------------|--------|--------|------------------|--------|---------------|-------|
|  |  | <u>POOR</u> |        |        | <u>EXCELLENT</u> |        |               |       |
|  |  | 1(32%)      | 2(13%) | 3(24%) | 4(18%)           | 5(14%) | $\bar{x}=2.7$ | N=262 |
6. Have you had contact with any organized sportsmen's group concerning hunting or trapping on your land? N=274
- |            |   |
|------------|---|
| <u>94%</u> | A. NO   |
| <u>6%</u>  | B. YES (IF YES, PLEASE EXPLAIN <u>hunting-general</u><br><u>(85%), Wisc. Bowhunters (15%)</u> ) |
7. Which of the following best describes your policy toward the use of your land by others? N=261
- |            |   |
|------------|---|
| <u>15%</u> | A. NOT POSTED (ANYONE WELCOME TO USE LAND ANY TIME WITHOUT ASKING PERMISSION) |
| <u>61%</u> | B. NOT POSTED (BUT ANYONE NOT ASKING PERMISSION WILL BE ASKED TO LEAVE)       |
| <u>7%</u>  | C. POSTED: WITH PERMISSION  |
| <u>6%</u>  | D. POSTED: ALLOW FAMILY AND FRIENDS TO USE                                    |
| <u>7%</u>  | E. POSTED: ABSOLUTELY NO HUNTING OR TRESPASSING                               |
| <u>0</u>   | F. POSTED: ONLY TO PROTECT CROPS UNTIL HARVESTED                              |
| <u>5%</u>  | G. OTHER _____  |
8. What are your reasons for this policy? see page 74
- 
-

9. Are all the members of your immediate family familiar with this policy?

4% A. NO  
96% B. YES N=262

10. Has your policy towards use of your land by others changed over the last five years?

83% A. STAYED THE SAME  
16% B. BECAME MORE RESTRICTIVE N=265  
1% C. BECAME LESS RESTRICTIVE

11. Do you expect to change your policy towards posting in the years ahead?

83% A. NO N=250  
17% B. YES

11a. If yes, what would lead you to change? disrespect(37%); continued failure to ask permission(26%); depends on new laws(21%); irresponsibility(13%); group deer hunting(3%)

12. Is your policy towards allowing access for hunting deer different from other types of hunting and recreation?

92% A. NO N=266  
8% B. YES

12a. If yes, please explain: discourage large parties(45%); allow only family or friends(24%); prefer to ask(17%); other(14%)

13. Have you ever had a cooperative agreement with your neighbors to provide opportunities for hunting and recreation?

91% A. NO N=267  
9% B. YES

13a. If yes, please explain: allow neighbors to hunt(55%); snowmobile trails for clubs(36%); posting with neighbor(9%)

14. Do you hunt?

78% A. NO N=267  
22% B. YES

If yes, please answer the following questions. If no, skip to question 15.

14a. Do you hunt deer in Wisconsin?

13% A. NO N=63  
87% B. YES

14b. Do you also hunt other game?

27% A. NO N=62  
73% B. YES

14c. Do you hunt on your own land?

17% A. NO N=63  
83% B. YES

14d. Do you also hunt on private lands other than your own?

32% A. NO  
68% B. YES N=63

14e. Do you also hunt on public lands?

47% A. NO  
53% B. YES N=62

15. Please characterize the total amount of use your land has received in the past year (1983) for the following types of recreation.

ACTIVITY		AMOUNT OF USE			
		NONE	LIGHT (1-5 persons)	MODERATE (6-10)	HEAVY (over 10)
DEER HUNTING	$\bar{x}=2.5$ , N=259	<u>21%</u>	<u>34%</u>	<u>22%</u>	<u>23%</u>
WATERFOWL HUNTING	$\bar{x}=1.5$ , N=240	<u>60%</u>	<u>29%</u>	<u>10%</u>	<u>2%</u>
SMALL GAME HUNTING (rabbit, squirrel, pheasant, etc.)	N=252, $\bar{x}=2.3$	<u>16%</u>	<u>40%</u>	<u>28%</u>	<u>7%</u>
HIKING	$\bar{x}=1.4$ , N=234	<u>74%</u>	<u>18%</u>	<u>14%</u>	<u>6%</u>
TRAPPING	$\bar{x}=1.6$ , N=237	<u>51%</u>	<u>43%</u>	<u>5%</u>	<u>1%</u>
FISHING	$\bar{x}=1.3$ , N=233	<u>76%</u>	<u>17%</u>	<u>5%</u>	<u>2%</u>
SNOWMOBILING	$\bar{x}=2.3$ , N=243	<u>37%</u>	<u>23%</u>	<u>9%</u>	<u>30%</u>
BERRY PICKING	$\bar{x}=1.1$ , N=233	<u>90%</u>	<u>9%</u>	<u>1%</u>	<u>0</u>
OTHER	$\bar{x}=1.4$ , N=72	<u>75%</u>	<u>18%</u>	<u>3%</u>	<u>4%</u>

(Please specify: \_\_\_\_\_)

16. Approximately how many times in 1983 did you find evidence that your land was being used WITHOUT your permission for the following recreational activities.

_____ DEER HUNTING	$\bar{x}=6.2$ , N=109, range=1-60
_____ WATERFOWL HUNTING	$\bar{x}=4.6$ , N=28, range=1-20
_____ SMALL GAME HUNTING	$\bar{x}=4.6$ , N=91, range=1-35
_____ HIKING	$\bar{x}=6.1$ , N=11, range=1-20
_____ TRAPPING	$\bar{x}=1.9$ , N=10, range=1-5
_____ FISHING	$\bar{x}=4.3$ , N=11, range=2-10
_____ SNOWMOBILING	$\bar{x}=4.9$ , N=25, range=1-40
_____ BERRY PICKING	$\bar{x}=2.0$ , N=3, range=1-2
_____ OTHER (PLEASE SPECIFY: _____)	

17. Have you suffered any property damage due to the use of your land by hunters and/or recreationists?

69% A. NO  
31% B. YES N=272

- 17a. If yes, please indicate types of damage and appropriate amount: vandalism or stolen property(35%); fences cut(24%); crop damage(22%); trees cut or damaged by hunters(13%); littering(5%)

18. Do you offer a leasing or fee arrangement to provide hunting or trapping opportunities?

99% A. NO  
1% B. YES N=272

- 18a. If yes, during what seasons do you use this arrangement? N=3

33% A. DEER GUN SEASON  
0 B. DEER BOW SEASON  
33% C. WATERFOWL SEASON  
0 D. SMALL GAME SEASON  
33% E. TRAPPING SEASON

19. Do you believe landowners should receive compensation or incentive for allowing hunters and recreationists on their property?

13% A. STRONGLY AGREE  
29% B. AGREE  
48% C. NEUTRAL  $\bar{x}=2.6, N=265$   
7% D. DISAGREE  
3% E. STRONGLY DISAGREE

- 19a. What forms of compensation or incentive do you feel would be most appropriate? (Check all that apply) N=243

40% A. PROPERTY TAX CREDIT  
16% B. CASH PAYMENT  
11% C. INCREASED LAW ENFORCEMENT PATROLS  
25% D. GIFT OR DONATED LABOR FROM USER  
16% E. SIGNS DECLARING "OFF LIMIT" AREAS, DANGER ZONES AROUND DWELLINGS, ETC.  
7% F. OTHER (PLEASE SPECIFY: plant trees shrubs(20%); respect)-(20%))

20. Please indicate on the following scale, the behavior of hunters and recreationists as you have observed them as a whole.

	POOR	EXCELLENT					
A. HUNTERS	1(5%)	2(9%)	3(35%)	4(33%)	5(19%)	$\bar{x}=3.5, N=266$	
B. RECREATIONISTS	1(8%)	2(7%)	3(26%)	4(40%)	5(19%)	$\bar{x}=3.5, N=217$	

21. According to the following scale, please indicate the importance of each hunting problem as you see it. (Circle number)

	LEAST IMPORTANT				MOST IMPORTANT
A. DISRESPECT FOR LANDOWNER OR PROPERTY.....	1 (2%)	2 (3%)	3 (10%)	4 (16%)	5 (70%)
$\bar{x}=4.49, N=249$					
B. FAILURE TO RETRIEVE WOUNDED GAME.	1 (29%)	2 (10%)	3 (22%)	4 (13%)	5 (26%)
$\bar{x}=2.98, N=232$					
C. FAILURE TO SEEK PERMISSION FROM LANDOWNER.....	1 (4%)	2 (2%)	3 (9%)	4 (15%)	5 (70%)
$\bar{x}=4.45, N=252$					
D. GROUP BAG(HUNTING FOR PARTY).....	1 (27%)	2 (15%)	3 (27%)	4 (12%)	5 (20%)
$\bar{x}=2.84, N=225$					
E. HUNTING IN LARGE PARTIES(10 OR MORE).....	1 (19%)	2 (13%)	3 (19%)	4 (13%)	5 (36%)
$\bar{x}=3.33, N=232$					
F. INDISCRIMINATE SHOOTING.....	1 (12%)	2 (9%)	3 (14%)	4 (11%)	5 (54%)
$\bar{x}=3.86, N=238$					
G. LITTERING.....	1 (15%)	2 (9%)	3 (16%)	4 (13%)	5 (47%)
$\bar{x}=3.69, N=239$					
H. POACHING.....	1 (28%)	2 (7%)	3 (12%)	4 (10%)	5 (42%)
$\bar{x}=3.32, N=220$					
I. POOR MARKSMANSHIP(LACK OF PRACTICE)	1 (31%)	2 (14%)	3 (17%)	4 (7%)	5 (30%)
$\bar{x}=2.90, N=223$					
J. SHOOTING ILLEGAL GAME AND LETTING IT LAY.....	1 (22%)	2 (8%)	3 (9%)	4 (14%)	5 (47%)
$\bar{x}=3.57, N=229$					
K. TAKING MORE THAN LEGAL LIMIT.....	1 (25%)	2 (9%)	3 (16%)	4 (14%)	5 (31%)
$\bar{x}=3.27, N=228$					
L. UNSAFE GUN HANDLING.....	1 (16%)	2 (4%)	3 (10%)	4 (14%)	5 (57%)
$\bar{x}=3.91, N=230$					
M. USAGE OF ALCOHOL WHILE HUNTING...	1 (15%)	2 (5%)	3 (11%)	4 (8%)	5 (61%)
$\bar{x}=3.96, N=235$					

22. What positive things have you observed in hunters and recreationists?asked permission(35%); most good(35%); showed respect(14%); good sportsmanship (11%); other(4%) N=63

23. What negative things have you observed?failure to ask permission(33%); disrespect(32%); disregard for safety(17%); littering(10%); drinking(10%); other(4%) N=83

24. Is a hunter or recreationist who belongs to a sportsman's group more responsible than the one who does not? N=259

PROBABLY NOT		VERY LIKELY			
1 (2%)	2 (7%)	3 (20%)	4 (27%)	5 (44%)	$\bar{x}=4.1$

25. Is a hunter who has participated in a hunter education course a more responsible and ethical hunter than one who has not? N=255

PROBABLY NOT		VERY LIKELY			
1 (1%)	2 (2%)	3 (15%)	4 (35%)	5 (47%)	$\bar{x}=4.2$

26. Does wildlife belong to the public? N=259

<u>NO</u>		<u>DEFINITELY</u>			
1 (22%)	2 (5%)	3 (25%)	4 (16%)	5 (33%)	$\bar{x}=3.3$

27. Does wildlife belong to the private landowner? N=257

<u>NO</u>		<u>DEFINITELY</u>			
1 (48%)	2 (12%)	3 (26%)	4 (5%)	5 (9%)	$\bar{x}=2.2$

28. Would you be in favor of a program designed to help improve landowner-landuser relationships?

<u>21%</u>	A. NO	N=263
<u>79%</u>	B. YES	

29. Would you be willing to participate in such a program?

<u>54%</u>	A. NO	N=246
<u>46%</u>	B. YES	

30. Would you consider allowing a hunter or recreationist you don't know, personally, to use your land?

<u>41%</u>	A. NO	N=261
<u>59%</u>	B. YES	

31. What type(s) of hunter or recreationist identification do you feel would be appropriate? (Check all that apply)

<u>46%</u>	WALLET-SIZED I.D. CARD	N=127
<u>39%</u>	BACK TAG	N=107
<u>15%</u>	CONTRASTING COLORED ARM BAND	N=41
<u>15%</u>	BLAZE ORANGE CAP WITH SPECIAL LOGO	N=41
<u>40%</u>	VEHICLE IDENTIFICATION	N=109
<u>2%</u>	OTHER (PLEASE SPECIFY: _____)	N=6

32. Would you be willing to take the time to check identification of hunters or recreationists who contact you to use your land?

<u>28%</u>	A. NO	N=264
<u>72%</u>	B. YES	

33. Would you be more likely to give permission to hunters who have successfully completed an advanced hunter education program, which included landuser-landowner relationships?

<u>19%</u>	A. NO	N=262
<u>81%</u>	B. YES	

33a. Should this be a requirement for hunters to participate in this program?

<u>40%</u>	A. NO	N=254
<u>60%</u>	B. YES	

34. What can hunters and recreationists do to help you, the landowner? show respect(46%); ask permission(23%); work together(10%); abide by landowner's rules(6%); stay off(4%); plant trees and shrubs(4%)
35. What do you expect from a person whom you allow to use your land? respect(72%); abide by rules(7%); thanks(6%); ask permission(4%); safety(3%)
36. What final suggestions or comments would you like to offer for improving landowner-landuser relationships? show respect(22%); ask permission(17%); education needed(17%); increase penalties(4%); keep government out(4%); other(36%)

Breakdown of Question 8 (Landowner questionnaire)

8A.	1 - no problems	64%	
	2 - want to know who is on land	12%	N=25
	3 - use other's land	12%	
	4 - too much trouble	2%	
8B.	1 - want to know who is on land	45%	
	2 - keep damage to a minimum	23%	
	3 - what they would expect using other's land	19%	
	4 - safety	5%	N=123
	5 - if it's worth hunting, it's worth asking	5%	
	6 - liability	2%	
	7 - some people don't abide by signs anyway	2%	
8C.	1 - want to know who is on land	67%	N=12
	2 - damage	33%	
8D.	1 - damage or posting in past	50%	N=14
	2 - restrict usage	50%	
8E.	1 - vandalism, disrespect	38%	
	2 - safety	38%	N=13
	3 - maintain a few acres for wildlife	23%	
8G.	1 - not posted, family only	80%	N=5
	2 - posted to protect trees	20%	

**Appendix 2. Landuser questionnaire**

## LANDUSER QUESTIONNAIRE

## GRIP (Grass-Roots Ike's Program)

1. Do you participate in some form of outdoor recreation? N=610

100% Yes      If yes, please answer the following  
0 No            questions - If no, skip to question #3.

1a. Please indicate which activities you participate in. (Check all that apply).

<u>100%</u> Hunting	N=609
<u>9%</u> Trapping	N=609
<u>89%</u> Fishing	N=609
<u>46%</u> Hiking	N=609
<u>33%</u> Snowmobiling	N=609
<u>21%</u> Berry and/or nut picking	N=609
<u>24%</u> Other (Please Specify) <u>cross-country skiing(38%); camping</u> <u>(21%); wildlife observation or photography(13%); other</u> <u>(28%)</u>	N=608

1b. Do you use private land for these forms of outdoor recreation?

91% Yes      N=562  
9% No

1c. If yes, what percentage of these activities occur on private land other than your own?

<u>25%</u> 1-25%	$\bar{x}=2.5, N=511$
<u>24%</u> 26-50%	
<u>25%</u> 51-75%	
<u>26%</u> 76-100%	

2. Do you hunt? N=608

100% Yes      If yes, please answer the following questions 2a-2d.  
0 No            If no, skip to question #3.

2a. Do you hunt deer in Wisconsin?

94% Yes  
4% No  
 N=607

2b. Do you also hunt other game?

87% Yes  
13% No  
 N=603

2c. Do you hunt on private land?

90% Yes  
10% No  
 N=561

2d. If yes, approximately what percentage of your hunting activities occur on private land other than your own?

26% 1-25%  
18% 26-50%  
25% 51-75%  
31% 76-100%  
 $\bar{x}=2.6$ , N=549

3. Do you belong to an organized club?

21% Yes  
79% No  
 N=608

4. How have you perceived landowner's policies toward posting and trespassing over the last five years?

A. Stayed the same 23%  
 B. Become more restrictive 75% N=597  
 C. Become less restrictive 2%

5. Do you believe landowners should receive compensation for allowing land-users on their property?

A. Strongly agree 9%  
 B. Agree 37%  
 C. Neutral 35%  $\bar{x}=2.7$ , N=557  
 D. Disagree 13%  
 E. Strongly disagree 5%

6. What forms of compensation or incentive do you feel would be most appropriate? (Check all that apply).

A. Property Tax Credit	51%	N=568
B. Cash Payment	14%	N=568
C. Increased law enforcement patrols	18%	N=522
D. Gift or donation of labor	35%	N=522
E. Signs declaring "Off Limit" areas - danger zones around dwellings, etc.	34%	N=522
F. Increase license fee for landowner compensation	10%	N=522
G. Others (Please specify) <u>user fees(21%); ask permission(17%); part of</u> <u>game to landowner(15%); comp. for damage(10%)</u>	9%	N=522

7. Please indicate the behavior of hunters and other recreationists as you have observed them. (Circle the number you feel applies).

	<u>Poor</u>					<u>Excellent</u>	
Hunters	1(4%)	2(7%)	3(34%)	4(45%)	5(10%)	$\bar{x}=3.5$ , N=601	
Recreationists	1(5%)	2(15%)	3(37%)	4(34%)	5(8%)	$\bar{x}=3.2$ , N=542	

8. According to the following scale, please indicate the importance of each hunting problem as you see it. (Circle the number you feel applies).

		<u>Least Important</u>					<u>Most Important</u>	
A. Disrespect for landowner or property	N=556	1	2	3	4	5	$\bar{x}=4.39$	
B. Failure to retrieve wounded game	N=598	1	2	3	4	5	$\bar{x}=3.67$	
C. Failure to seek permission from landowner	N=556	1	2	3	4	5	$\bar{x}=4.44$	
D. Group bag (hunting for others in the party)	N=598	1	2	3	4	5	$\bar{x}=2.74$	
E. Hunting in large parties (10 or more)	N=599	1	2	3	4	5	$\bar{x}=3.08$	
F. Indiscriminate shooting	N=595	1	2	3	4	5	$\bar{x}=4.03$	
G. Littering	N=602	1	2	3	4	5	$\bar{x}=4.25$	
H. Poaching	N=600	1	2	3	4	5	$\bar{x}=4.33$	
I. Poor marksmanship (lack of practice)	N=598	1	2	3	4	5	$\bar{x}=3.15$	
J. Shooting illegal game and letting it lay	N=601	1	2	3	4	5	$\bar{x}=4.24$	

		<u>Least Important</u>					<u>Most Important</u>
K. Taking more than the legal limit	N=593	1	2	3	4	5	$\bar{x}=3.90$
L. Unsafe gun handling	N=592	1	2	3	4	5	$\bar{x}=4.25$
M. Usage of alcohol while hunting	N=593	1	2	3	4	5	$\bar{x}=4.26$

9. Is a hunter who has participated in an advanced hunter education course a more responsible and ethical hunter than one who has not? (Circle the number you feel applies).

Probably Not Very Likely

1 (8%) 2 (8%) 3 (20%) 4 (27%) 5 (37%)  $\bar{x}=3.8$ , N=600

10. Is a landuser who belongs to an organized club more responsible than one who does not? (Circle the number you feel applies)

Not Likely Very Likely

1 (21%) 2 (8%) 3 (26%) 4 (21%) 5 (24%)  $\bar{x}=3.2$ , N=598

11. Does wildlife belong to the public?

No Definitely

1 (11%) 2 (3%) 3 (13%) 4 (14%) 5 (59%)  $\bar{x}=4.1$ , N=596

12. Does wildlife belong to the private landowner?

No Definitely

1 (56%) 2 (12%) 3 (16%) 4 (7%) 5 (8%)  $\bar{x}=2.0$ , N=601

13. Would you be in favor of a program designed to help improve landowner - landuser relationships?

96% Yes  
N=600

4% No

14. Would you be willing to participate in such a program?

69% Yes  
N=573

31% No

15. If you are a hunter would you be willing to participate in an advanced Hunter Education Training on a recurring basis, if it would mean more private land being opened for hunting and recreation?

70% Yes  
N=585

30% No

16. What type(s) of hunter or recreationist identification do you feel would be appropriate to allow you to use private property?  
(Check all that apply).

<u>66%</u>	Wallet-sized I.D. Card	N=541
<u>37%</u>	Back Tag	N=541
<u>25%</u>	Contrasting colored arm band	N=541
<u>12%</u>	Blaze orange cap with special logo	N=541
<u>44%</u>	Vehicle identification	N=541
<u>9%</u>	Other (Please specify) <u>written permission/contact(69%); patch(15%)</u>	N=541

17. What is your age?

$\bar{x}$ =34.5, N=599, range=12-82