THE WISCONSIN LANDOWNER STUDY: LANDOWNER ATTITUDES AND VALUES TOWARD WILDLIFE MANAGEMENT ON PRIVATE LANDS, POSTING, AND HUNTER ACCESS

by

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A Thesis

submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

College of Natural Resources

UNIVERSITY OF WISCONSIN

Stevens Point, Wisconsin

May 1986

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PREFACE

This thesis consists of 2 papers presenting information on attitudes and values of Wisconsin landowners with regard to wildlife management and recreational access. The papers are written in the format of The Journal of Wildlife Management (JWM). "Assessment of demand for wildlife management on private lands in Wisconsin" will be submitted to the JWM. "Posting and hunter access by Wisconsin landowners" will be submitted to The Wildlife Society Bulletin.

ACKNOWLEDGEMENTS

I wish to acknowledge Dr. Kirk Beattie, my major professor, for his encouragement and expertise throughout the course of this project. I would also like to thank Dr. Robert Engelhard, Dr. Ray Anderson, William Horvath, Dr. Tom Heberlien, Robert Dumke, Donald Last, Lowell Klessig, and Dr. Robert Jackson for advice and critical review of the questionnaire.

I am grateful to the following for their interest in and funding of this project: National Rifle Association, Wisc. Dept. of Natural Resources, Univ. of Wisc.-Stevens Point, N. Fond du Lac Rod and Gun Club, Langlade Co. Sportsman Club, Edgerton Conservation Club, Mr. Nash Williams, Wisconsin Electric Rod and Gun Club, Shawano Co. Conservation Assoc., N. Wisconsin Rod and Gun Club, Badger Fisherman's League, Bangor Rod and Gun Club, Zackow Sportsmans Club, Izzak Walton League-Beloit Chapter, Shoto Conservation Club, Mr. Rob Sebald, Sheboygan Co. Conservation Assoc., Izzak Walton League-Watertown Chapter, Waukesha Co. Conservation Alliance, W.H.O. Club, and the Wisconsin Wildlife Federation.

My sincere appreciation is extended to Rob Bouta, members of the Wisc. Wildlife Federation, and the many Wisconsin hunter safety instructors who assisted with mailing list development.

I also wish to thank Fred Hilpert of the UW-SP computer services department for his assistance with programming and analysis and Marcia Wise of the Department of Wildlife and Fisheries at Mississippi State University for her careful proofreading and typing of this manuscript.

A special thanks to Linda for her understanding and tolerance of my graduate years.

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ASSESSMENT OF DEMAND FOR WILDLIFE MANAGEMENT ON PRIVATE LANDS IN WISCONSIN: LANDOWNER ATTITUDES AND VALUES

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Abstract: Landowner values and attitudes with regard to wildlife management on private lands were surveyed in 53 of Wisconsin's 72 counties in 1984. Most respondents (84.8%) indicated that wildlife was at least somewhat important in their landuse decisions. The importance assigned to wildlife was influenced by the landowners' perceived awareness of wildlife and wildlife habitat needs ($P < 0.01$). Time and cost involved with management also significantly influenced landowner decisions concerning wildlife on their property ($P < 0.01$). Less than one-third (31.2%) of the landowners said they would consider using a professionally prepared wildlife management plan. Not wanting to attract wildlife ($P < 0.01$) contributed to landowner reluctance in not wanting to use a plan. A hypothetical landowner cooperative was proposed as a means of improving habitat and hunter access. Most respondents (72.9%) were not willing to consider such a program, citing the access stipulation as being unfavorable. Many respondents (28.8%) said they managed nongame, although most management techniques being used by landowners are passive in nature. Of all farmers, 91% have never requested

technical assistance for wildlife management on their property. Landowners believed the University of Wisconsin-Extension offered the most reliable wildlife management information of 11 groups presented. Landowner perceptions of reliability appear to be related to a specific group's visibility within the rural community. A majority of landowners (52.0%) agreed with the idea of compensation for wildlife harvested on their property, but only 3.3% pursue the idea of leasing or charging user fees. Property tax reduction was the most preferred incentive of 7 proposed wildlife management incentives.

As agricultural and other landuse practices continue to change to meet the needs of a growing population, the land base suitable for wildlife continues to diminish. Optimum habitat is becoming scarce, and wildlife populations must occupy poorer habitat to survive. Farmers are finding it easier to employ clean farming methods rather than maintain hedgerows or food plots for wildlife simply because wildlife management does not pay from a cost/benefit standpoint. In fact, many farmers view wildlife as a liability representing little or no profit and a potential predator to their crops (Stoddard and Day 1969, Gottschalk 1977, Deknatel 1979, Higbee 1981). A study in 1975 by the Great Lakes Basin Committee determined that about 90% of the forest land base across 8 states bordering the Great Lakes

can be hunted, but only 66% of the pasture land and 25% of the cropland were available for hunting (United States Department of Agriculture 1975). The Farm Wildlife Habitat Council conducted a study in which the ring-necked pheasant (Phasianus colchicus) was selected by 12 midwestern states as an indicator species to monitor habitat losses. Significant declines have been detected in most states with Wisconsin showing a 40% drop in pheasant numbers during the period 1962-1978 (Farris and Cole 1981).

Approximately 85% of Wisconsin's land is in private ownership, and nearly 80% of all wildlife harvested in Wisconsin is taken on private lands (Trainer 1982). In addition, 73% of Wisconsin hunters surveyed indicated private land to be the type of property most often used for hunting (Klessig and Hale 1972). These facts clearly display the dependency of the sportsmen and wildlife on the landowner. Unfortunately, much of the burden of stewardship rests with the landowner. Insufficient information on cost/benefit ratios and the peculiarity of wildlife as a marketable resource tend to discourage the landowner from pursuing wildlife management as a private enterprise as in many western states (Bishop 1981, Shelton 1982). Also, the lack of adequate incentives reduce the willingness of the landowners to incorporate wildlife management into their present landuse practices.

The 2 major property-owning groups in Wisconsin are farmers (96,000 farms; 7.6 million ha.) and non-industrial

forest landowners (5.3 million ha.). The economic plight of the farmer has been highly publicized. Shellberg (1981:112-116) states "...We must make it financially feasible for the farmer to keep critical agricultural lands in production. Without profit, the farmer cannot apply soil and water conservation practices to enhance the per acre return on his best lands thereby idling marginal acres." Also, a farmer's profit will encourage wildlife management because marginal acres now in production are those usually reserved for wildlife habitat.

Wildlife management on private lands must consider not only wildlife biology and management, but also agricultural economics and landowners' attitudes and values toward wildlife on their property (Sheriff et al. 1981). Numerous studies have been conducted in Wisconsin with regard to hunter-landowner relationships (Klessig and Hale 1972, Heberlein and Laybourne 1978, Jackson and Anderson 1982), while the topic of landowner values and attitudes is just emerging as an area of legitimate concern. If an effective course of direction for the future of wildlife-related recreation is to be determined, more effort must be made to integrate all aspects of the use, management, and perceptions of the resource.

Before any program to encourage wildlife management on private lands can be implemented, we must determine attitudes and values of private landowners. During the summer and fall of 1984, I studied Wisconsin landowners and

their relationship to wildlife management. The objectives of the study were to determine the attitudes and perceptions of Wisconsin landowners with regard to wildlife management practices, and to identify factors inhibiting such management.

METHODS

A mail-back questionnaire was designed to assess the attitudes and values of Wisconsin private landowners about wildlife management on their property. The questionnaire addressed landowner perceptions of habitat quality, property attributes, recreational access, posting, leasing, importance of wildlife, management practices, landowner demographics, and other factors. The questionnaire design was based on recommendations by Dillman (1978) and comparison of previously successful questionnaires (Klessig and Hale 1972, Duffey and Stiehl 1983, Brown et al. 1984).

The sample universe consisted of rural landowners possessing a minimum of 16 ha. Rural was construed as existing outside of city, town, or village limits. Questionnaire recipients were determined by stratified-random selection based on a quota of 55 landowners per county. Unavailability of a complete listing of all landowners meeting the sample criteria made it difficult to sample at a pure random or proportionate-random level. Furthermore, mailing addresses could only be obtained from county tax records located at the county seat.

This portion of sampling was completed by volunteers which further facilitated the need for this selection process. It was assumed that the number of landowners meeting the sample criteria in each county was approximately equal. Therefore, the data were not weighted.

The sample consisted of 3,304 landowners from 53 of Wisconsin's 72 counties (Fig. 1). Funding constraints prevented a statewide survey. Therefore, 17 counties were randomly eliminated in addition to Milwaukee County, which is primarily urban, and Menominee County, which is primarily in the ownership of Native Americans. At the request of the Wisconsin Department of Natural Resources (WDNR), an additional 478 questionnaires were delivered to an 8-county region that is considered to be the state's best potential pheasant habitat (Fig. 2). During July 1984, all selected landowners received a letter of introduction requesting their cooperation with the survey and alerting them to its delivery. A questionnaire, cover letter, and business reply return envelope were mailed during the first week of August, and a follow-up reminder was mailed in September. The last response was received on 17 December.

Non-response bias was addressed by conducting a telephone survey of 40 randomly selected non-respondents representing 2% of the total 1,783 non-respondents. Data were obtained from 9 questionnaire items and compared statistically with the main survey response using Student's t-test. Respondents and non-respondents did not differ in

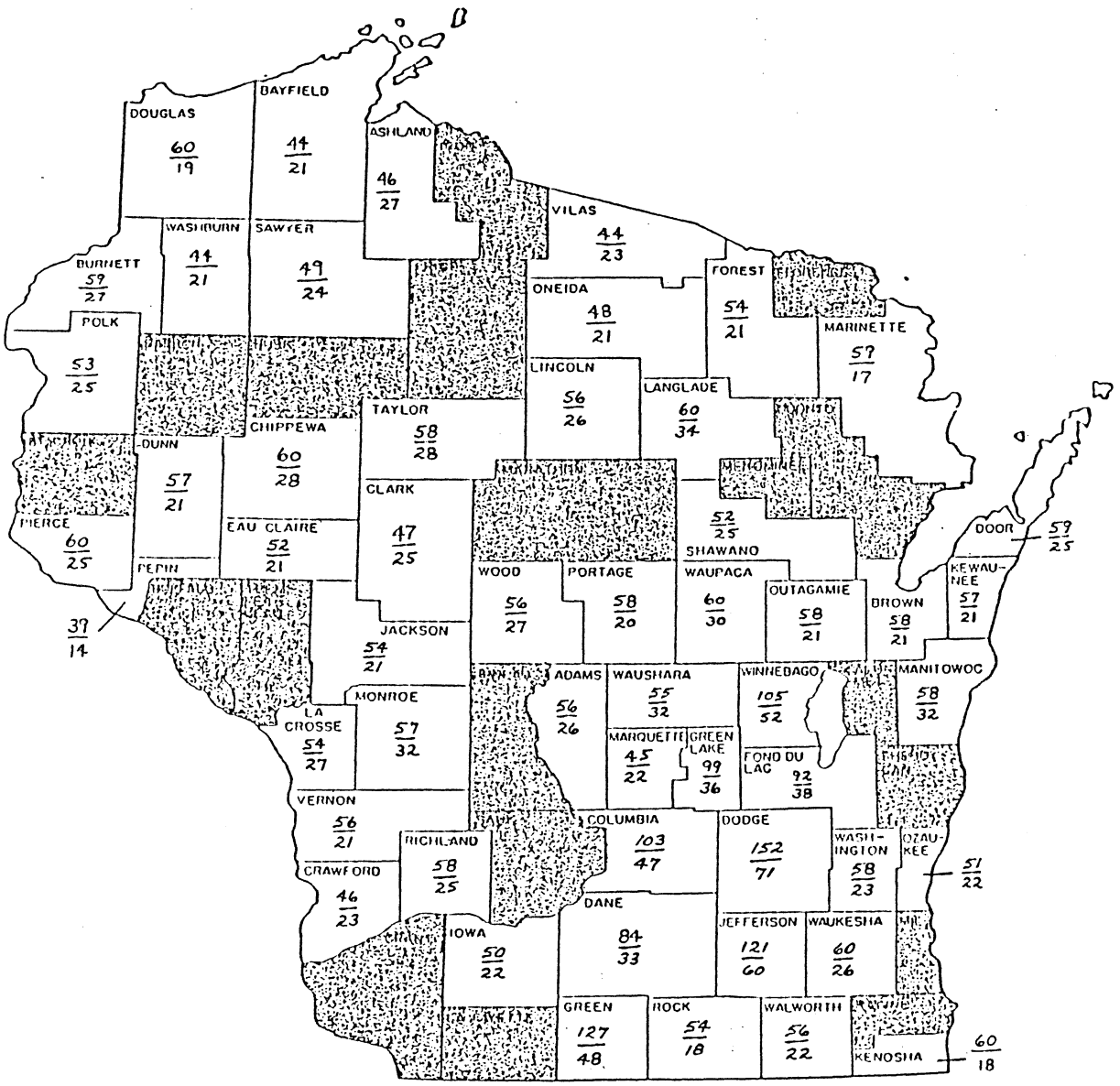

Fig. 1. Wisconsin counties sampled in this study. The top number are questionnaires mailed, the bottom number are useable returns. Shaded areas were not surveyed.

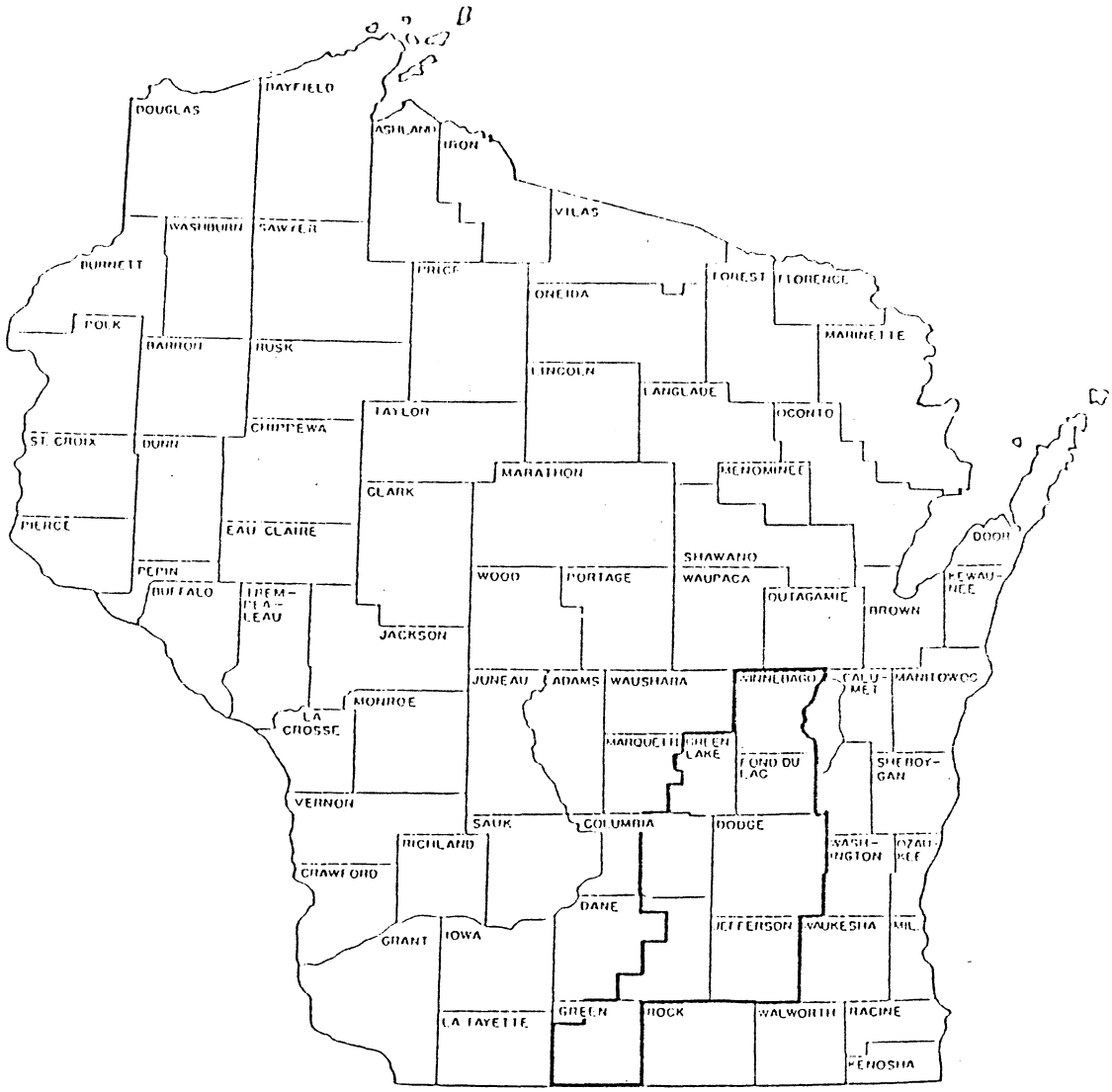

Fig. 2. Area of intensive sampling in Wisconsin's best potential pheasant habitat.

their responses on any of the 9 questions ($p < 0.05$). Data were analyzed with the aid of the Statistical Package for the Social Sciences (SPSS) computer program (Nie et al. 1975). Discriminant function analysis with stepwise inclusion of variables was used to determine which variables statistically separated the responses of selected dependent variables. The method of entry of the variables was Rao's V (Klecka 1980). The stepwise variable selection was based on the largest increase in V when added to previously selected variables. This criteria amounts to the greatest separation of the groups and an optimal set of variables selected.

RESULTS AND DISCUSSION

Survey results

Of the original 3,304 questionnaires distributed, 1,521 (46%) were returned and 1,456 (44%) were deemed useable. This response was somewhat lower than other similar landowner surveys: 49% (Duffey and Stiehl 1983), 62% (Sheriff et al. 1981), 65% (Henry 1981), and 69% (Tuttle and Kelley 1981). An additional follow-up letter may have generated another 10% response. Over the first 3 weeks following the initial mailing, the response rate averaged 48.4 questionnaires/day. An additional 12% in returns was generated over the next 3-week period after mailing out the follow-up reminder. Only 120 questionnaires were returned during the next 90 days. Late summer/early fall is a busy time for farmers, and this probably reduced the response rate.

The typical Wisconsin landowner is 46 years old or older ($\bar{x}$=54.1, SD=13.2), has at least a high school education, is usually a farmer (39.9%), and has a gross income of $10,000-$30,000 annually. The average property size is 92.5 ha with cropland being the most cited landuse ($\bar{x}$=63.4 ha, N=1,107), followed by woodland ($\bar{x}$=28.8 ha, N=1,027), pasture ($\bar{x}$=21.3 ha, N=731), marshland ($\bar{x}$=13.1 ha, N=636), treefarm ($\bar{x}$=31.4 ha, N=338), and brush or fallow field ($\bar{x}$=14.0 ha, N=265).

Wisconsin landowners are active participants in the harvesting of the state's wildlife. Forty-nine percent are hunters and 6% are trappers. Of those landowners who hunt, 95% use their own land for this purpose, and 65% indicated they hunt on other privately owned lands.

Importance of wildlife

Landowners were asked to evaluate the importance of wildlife in their landuse decisions. A 5-point Likert scale was used to evaluate importance. Scale choices were as follows: extremely important (1), very important (2), important (3), somewhat important (4), and not important at all (5). Most respondents (84.8%) indicated that wildlife was at least somewhat important in their landuse decisions ($\bar{x}$=3.0). Similar findings were revealed in a study of Missouri landowners. Most (83.0%) said wildlife was at least slightly important in their farm management, and only 20% said wildlife was extremely important (Sheriff et al.

1981). Landowner perceptions of the importance of wildlife were significantly influenced by their perceived awareness of wildlife and wildlife habitat needs (X^2=323.01, df=12, $P < 0.01$). As the landowners' perceived awareness decreased, the importance of wildlife also decreased (Yule's Q=0.44). Respondents who believe they have little time to manage wildlife (X^2=246.13, df=16, $P < 0.01$) or believe that wildlife management is too costly (X^2=248.74, df=16, $P < 0.01$) also were less likely to give wildlife a high degree of importance in landuse decisions. Landowners who are actively farming on a scale greater than that of a hobby farm also were less likely to consider wildlife to be highly important (X^2=79.31, df=4, $P < 0.01$), although 56.1% did consider wildlife to be somewhat important ($\bar{x}$=3.5, N=543). These findings tend to agree with Kellert's (1980) study of American attitudes toward wildlife where farmers tended to rank last on both the naturalistic and ecologistic scales and high on the dominionistic and utilitarian scales.

The age of respondents did not influence perceptions of the importance of wildlife in landuse decisions. However, of the 15% of all respondents who indicated that wildlife was not at all important in their landuse decisions, 47% were over 55 years old. Physical health or strength limitations were cited as a major constraint on the implementation of wildlife management by 15% of New York landowners (Tuttle and Kelley 1981). In that study, 33% of the landowners were 60 years old or older. Wisconsin

hunters rated the importance of wildlife higher than non-hunters (X^2=121.8, df=4, $P < 0.01$). The mean score was 2.6 for hunters and 3.3 for non-hunters.

Responsibility for wildlife management

Resident wildlife is public property held in trust by the state. Wildlife habitat is, for the most part, under private control, yet confusion seems to persist with regard to responsibility. Landowners were asked if they felt the responsibility of habitat management on private lands should belong to the WDNR. Most (67.9%) disagreed while 17.6% remained neutral. Many landowners commented that the management of private lands should be a joint effort between the landowner and the state, but skepticism remains in the minds of many landowners. Apparently many individuals fear the "fine print" of any cooperative agreements between themselves and the WDNR, and they fear the loss of rights with regard to control of their property.

Management plan use

State foresters and the Soil Conservation Service (SCS) have long used management plans to help landowners achieve specific forest and soil management goals and objectives, but the use of wildlife management plans by private landowners is a relatively new concept. Less than one-third (31.2%) of landowners said they would consider using a wildlife management plan to help achieve their goals

with regard to wildlife on their property. Factors influencing landowner reluctance were a desire not to attract wildlife ($r=-0.35$, $P < 0.01$) and the perception that wildlife management is too costly ($r=-0.25$, $P < 0.01$). Not wanting to attract wildlife may be a function of not wanting to attract hunters ($r=0.18$, $P < 0.01$). Farmers may also view wildlife as a liability with regard to crop depredation (Higbee 1981).

Landowners' desires for a wildlife management plan were related to the perceived importance of wildlife ($r=0.29$, $P < 0.01$). Education ($r=-0.26$, $P < 0.01$) and age ($r=0.25$, $P < 0.01$) were also related, with younger, more educated landowners willing to use a management plan. Those landowners who indicated that they would use a plan also were more likely to have requested some sort of technical assistance for managing wildlife ($X^2=68.32$, $df=1$, $P < 0.01$), as were those landowners who used government supports for wildlife management over the past 10 years ($X^2=21.36$, $df=1$, $P < 0.01$). Landowners who hunt in Wisconsin were slightly more inclined to consider the use of a management plan than non-hunters ($X^2=39.18$, $df=1$, $P < 0.01$). No significant difference was found between trappers and non-trappers.

Variables that discriminated between landowners who would use a wildlife management plan and those who would not are listed in order of importance (Table 1). The best discriminating variable asked landowners to describe their feelings about personal effort to improve and maintain

Table 1. Discriminant function analysis of landowners willing to use a wildlife management plan. Variables are listed in order of importance.[a]

Variable	Wilk's[b] Lambda	Change in V	Discriminant[c] function coefficients
Personal effort to improve wildlife habitat	0.905	148.90	0.434
Don't care about wildlife	0.845	111.11	-0.370
Education	0.818	56.23	-0.360
Have requested technical assistance	0.804	30.52	0.245
Importance of wildlife in landuse planning	0.794	21.61	0.255
Age	0.785	21.39	0.230

[a]Groups correctly classified = 70.75%.
[b]Only variables included $P < 0.001$.
[c]Standardized canonical coefficient.

wildlife habitat. One of every 5 landowners reported that they should put forth more effort. Another 40.2% felt they were doing as much as they could, and 40.7% believed that wildlife habitat would maintain itself and that they need not do anything to improve conditions. Similar feelings were expressed by New York landowners where 60% felt they should allow whatever wildlife that could live on their property to do so without putting forth any major effort at management, and 35% felt they should actively manage their land to improve the wildlife situation (Tuttle and Kelley 1981). In their study of landowners and gray partridge (Perdix perdix) management in east-central Wisconsin, Duffey and Stiehl (1983) also found a low level of interest with regard to improving wildlife habitat because many landowners believed that habitat conditions were stable. When Wisconsin landowners were asked to indicate the suitability of their property to support various wildlife species, 37.4% rated their property excellent to good. This value increases to 48.6% if the only species considered are the 4 major farm-game species: white-tailed deer (Odocoileus virginianus), pheasant, Hungarian partridge, and cottontail rabbit (Sylvilagus floridanus).

Management/access programs

Landowner cooperatives are currently being used in some states to promote wildlife habitat management and hunter access. A hypothetical wildlife management/hunter

access program was proposed to Wisconsin landowners. Landowners were told that the program would be voluntary, enrollment would be for some set period of time, hunter access would be mandatory, and certain management practices would have to be initiated. Most respondents (72.9%) were not willing to consider such a program if it were offered in Wisconsin. Not wanting to attract hunters ($r=-0.29$, $P < 0.01$) and not caring about wildlife on their property ($r=-0.20$, $P < 0.01$) were the main factors contributing to landowner reluctance to enroll in this type of program. Landowners who hunt were more likely to enroll than non-hunters ($X^2=11.32$, $df=1$, $P < 0.01$). Of the hunting landowners, 31.3% said they would enroll in the program. The best discriminating variables are listed in order of significant discriminating power (Table 2). Respondents willing to enroll in the management/access program were also more likely to consider using a wildlife management plan than those not willing to enroll ($X^2=130.53$, $df=1$, $P < 0.01$). A small positive relationship existed between program enrollment and responsibility for private lands wildlife management ($r=0.16$, $P < 0.01$). Landowners who believed they were responsible for wildlife management on their lands were more willing to join the management/access program. Of the various landowner groups, absentee landowners whose land is farmed were inclined to enroll ($X^2=20.61$, $df=1$, $P < 0.01$). No significant relationship existed for absentee landowners with idle lands.

Table 2. Discriminant function analysis of landowners willing to enroll in a wildlife management cooperative. Variables are listed in order of importance.[a]

Variable	Wilk's[b] Lambda	Change in V	Discriminant[c] function coefficients
Would use a wildlife management plan	0.903	148.80	0.601
Don't want to attract hunters	0.841	111.70	-0.540
Responsibility of management belongs to the WDNR	0.827	27.06	-0.295
Absentee owner - land is worked	0.819	16.95	0.304

[a]Groups correctly classified = 73.19%.
[b]Only variables included $P < 0.001$.
[c]Standardized canonical coefficient.

Management of non-game

Many respondents (28.8%) said they were actively managing for non-game species, but the main management techniques were passive in nature. Preservation of cavity trees (72.6%) and maintenance of cover (71.0%) were the 2 methods most often cited. Approximately 40% of all habitat improvements made by Ohio landowners were also "improvements by omission" (Henry 1981). Missouri farmers were similarly interested in management practices that involved the least amount of overall effort (Kirby et al. 1981). Other techniques used by Wisconsin landowners were providing feeding stations for songbirds (58.8%), preserving wetlands (50.0%), establishing nesting cover (41.5%), maintaining water stations (36.7%), and providing food plots (36.0%). Factors that negatively influenced management of non-game were not having sufficient available time ($r=-0.33$, $P < 0.01$), a high assigned importance to wildlife on private lands ($r=0.30$, $P < 0.01$), and not caring about wildlife ($r=-0.30$, $P < 0.01$). Similarly, major reasons provided by landowners in Ohio for not making habitat improvements were lack of time and interest; only 45% of all landowners actually made improvements for wildlife on their property (Henry 1981).

Technical Assistance

Technical assistance or cost-sharing for wildlife habitat improvement is available through the Agricultural

Conservation Program (ACP), but many counties do not participate because many farmer-elected committees do not consider habitat quality a high priority. Therefore, funds are not allocated for this purpose (Dumke and Frank 1982). Only 10.4% of the respondents have requested technical assistance for managing wildlife on their property. A positive relationship was found between whether a landowner had requested technical assistance and how important wildlife was to the landowner ($r=0.21$, $P < 0.01$). Of all farmers responding, 91% indicated they had never requested any technical assistance for wildlife management on their property. Wisconsin landowners also indicated time ($r=-0.22$, $P < 0.01$) and cost ($r=-0.17$, $P < 0.01$) to be the major factors influencing their willingness to manage wildlife and, hence, their willingness to seek technical assistance. Landowner groups did not differ in their willingness to seek technical assistance. Farmers, absentee owners, and property owner-residents displayed an overall lack of interest or inability to seek out assistance.

Respondents in the professional occupation category were most likely to seek assistance than other occupational groups ($X^2=25.74$, $df=5$, $P < 0.01$). Possible reasons for this increased likelihood to seek assistance are increased willingness to manage for wildlife by a group that does not earn their primary income from the land, higher disposable income, and more leisure time to pursue such endeavors. Individuals managing non-game species were more likely to

have requested technical assistance (X^2=92.52, df=1, $P < 0.01$). Discriminating variables are listed in order of importance (Table 3).

Sources of wildlife information

Wildlife management information can be obtained from a variety of government and non-government sources. Landowners were presented with a list of potential sources of information and were asked to evaluate the reliability of wildlife management information from these groups of individuals (Table 4). The University of Wisconsin-Extension (UW-Ext.) was considered to offer the most reliable wildlife information. The UW-Ext. is a highly successful and visible organization with a number of professionals employed in most disciplines related to rural and agricultural communities. The county agent also ranked very high. In many cases the county agent is synonymous with the UW-Ext. Therefore, many landowners probably do not distinguish between these two sources. The state forester, state conservation warden, and the Agricultural Stabilization and Conservation Service (ASCS) ranked third, fourth, and fifth, respectively. All three are highly visible and active groups in Wisconsin, but the amount of specific wildlife management information available from these groups is limited. Kelley (1981) reported that most Vermont farmers (90%) had personal contact with ASCS or extension agents, had never been contacted by Fish and Game

Table 3. Discriminant function analysis of landowners' willingness to seek technical assistance. Variables are listed in order of importance.[a]

Variable	Wilk's[b] Lambda	Change in V	Discriminant[c] function coefficients
Do you manage non-game	0.949	77.07	0.403
No time to manage wildlife	0.921	45.45	-0.359
Education	0.904	30.05	-0.339
Importance of wildife	0.895	16.39	0.181

[a]Groups correctly classified = 75.07%.
[b]Only variables included $P < 0.001$.
[c]Standardized canonical coefficient.

Table 4. Landowner ratings of the reliability of wildlife management information from various groups, in order of importance.[a]

	Very reliable	Reliable	Unreliable	Very Unreliable	Undecided
UW-Ext.	11.2	39.9	4.3	1.7	43.5
County agent	9.3	41.1	5.1	2.0	42.5
WDNR forester	12.0	35.6	5.7	3.8	42.8
Game warden	10.5	34.6	6.2	3.7	45.0
ASCS	7.1	33.8	5.8	2.1	51.1
Close friend	6.2	33.3	10.5	2.6	47.4
Sportsmen's club	6.1	31.2	7.3	2.6	52.8
UW-Wildlife professor	8.7	27.0	4.8	2.3	57.3
Neighbors	4.9	28.5	12.2	2.4	51.9
SCS	5.8	27.0	5.0	1.9	60.2
Private consultants	3.3	22.2	6.2	1.7	66.6

[a]Values are percentages adjusted for item non-response.

Department biologists, but knew the names of local game wardens. Evidently, the probability of contact with a particular group is related to the visibility of that group within the area, and the landowners' perceptions of reliability are probably related to a specific group's visibility.

Neighbors and friends were perceived as providing the most unreliable information, and private consultants ranked last in reliability but first in the undecided category. State wildlife biologists were not included in this list because the primary responsibility of these individuals has been the management of public lands. Only recently has the role of the state biologist been expanded to emphasize private lands management.

Incentives

Private landowners can be motivated to manage wildlife on their property if the wildlife is viewed as a product of the land with a commodity value. When landowners were asked if they should receive money or other forms of compensation for wildlife harvested on their property, 52.0% agreed and 29.4% were neutral. Only 3.3% of the respondents indicated they lease or charge a fee for the use of their property during hunting or trapping seasons. Most Ohio landowners ($>99\%$) do not charge fees for recreational use of their property (Henry 1981). This suggests that although landowners may be receptive to the concept of monetary gain

for wildlife harvested or for providing access, few are collecting fees. Possible reasons for low involvement with fees may be the strong tradition of free hunting or not knowing exactly how to set up and manage such a system. Brown and Thompson (1976) believed this disinterest in user fees was because landowners had no monetary investment in developing the recreational value of their land and believed that a fee was unwarranted.

Many incentives have been considered to motivate the private landowner to take a more active role in wildlife management. Wisconsin landowners were asked to rank their preference for seven incentives (Table 5). Property tax reduction was the most preferred of the offered incentives. Free technical assistance and free or low-cost trees, shrubs, and seed were the 2nd and 3rd most preferred, respectively, based on percent ranking. Missouri farm operators ranked seed for food plots and technical assistance as being most desired (Kirby et al. 1981). Tax considerations ranked 4th but were the most cited form of monetary assistance.

RECOMMENDATIONS

Most past effort to improve the wildlife situation on private lands has been implemented with the hunter in mind. Only 50% of the respondents in this survey indicated that they hunted during the 1983 season. As a result, much of the wildlife management information effort available may go

Table 5. Potential incentives to encourage wildlife management.

Incentive	%[a]	Mean score
Property tax reduction	47.3	2.06
Free technical assistance	20.8	3.04
Free or low-cost trees, shrubs, and seed	17.8	2.86
Direct cash payments	15.1	3.74
Wildlife damage control	11.1	4.04
Pheasants for stocking	7.9	4.52
Increased warden patrols	7.4	5.19

[a]Percentages are adjusted for item non-response.

unnoticed by a great many of the non-hunting landowners. Most respondents suggested that wildlife was at least somewhat important in their landuse decisions, but apparently the importance of wildlife to the landowner was related to many factors. Many of these influencing factors were tangible: time, cost, and the availability of wildlife management information and resources. Others were less tangible and much more variable: awareness of wildlife and habitat, perceptions of habitat conditions, and attitudes toward wildlife.

To promote the management of wildlife on private lands more effectively, a diversified approach to information dissemination and program development should be considered. Factors to be considered are traditional methods of promoting game species and hunter access, and the non-hunting landowner with emphasis on management of non-game species of wildlife.

Education

Educating landowners to understand there is a need to improve habitat will be difficult. Many different methods of information dissemination will need to be used to meet the varying levels of interest landowners exhibit. Methods should include workshops, continuing education classes, information packets, brochures, and popular articles. Also, the potential of video cassettes should not be overlooked. Some management ideas may be better understood by use of

visual aid. Specially produced video cassettes demonstrating management techniques and benefits could be made available through public libraries or WDNR offices.

All information should consider landowner objectives and highlight reasonable expectations with regard to management success. Moreover, emphasis should be put on lost opportunity to view or hunt wildlife and on income earning potential (i.e., hunting fees or leases). Wildlife information should also be included with other types of landuse information (i.e., forestry and agricultural) as often as possible. This broad-based approach to education will better reach the various landowner groups.

Technical assistance

One of the most proven methods used in the development of any agricultural or conservation-related program is the availability of technical assistance. Until recently, Wisconsin wildlife managers have spent most of their time and effort in the management of the public lands. If a successful private lands program is to be implemented, the exposure of the wildlife manager in the rural community must increase. In a report to the Wisconsin Natural Resources Board by the Hunter Landowner Council (1983), a major recommendation was that the WDNR budget for the addition of one wildlife manager per county and that all new efforts emphasize working with private landowners. Although it may be quite some time before this recommendation is actually

realized, objectives of this kind are a positive step. Among the duties needed to be included would be achieving more personal contacts with all landowner groups, especially farmers. For the agricultural community, the best time for contacts would be late fall and winter. Identifying the non-farmer and absentee owner group can be accomplished during the summer months when many of the absentee landowners are using their property for recreation (Wilkins and Brown 1973).

Technical assistance can come in many forms, whether it be over-the-phone advice or management plan development. The formation of a management plan has a distinct advantage in that the landowner can be given a "cookbook" approach to managing wildlife on his or her property and can refer to it as time and money allow implementation. In addition, many aspects of the plan may be standardized (e.g., hedgerow development, nest box design and placement) and used as needed with individual landowners (Anderson, pers. comm.).

Existing programs

Many programs that entail some aspect of habitat manipulation already exist. A higher degree of integration is needed between wildlife management and existing agricultural/natural resource programs. Soil conservation through no-till or cover crops and set-aside programs for increasing wood fiber production are popular in Wisconsin. Unfortunately, wildlife usually is far removed from these

programs or is addressed by someone with a limited background in wildlife management. A well-developed network of contacts between landowner and agency already exists within various state and federal offices. Therefore, the need is for the WDNR to seek a working agreement with those agencies that share this ability to affect change over potential or existing habitat (Hunter Landowner Council 1983). Most existing programs also tend to be more farm oriented. Non-farmers have few programs to help them with wildlife management, and those programs that do exist offer very little beyond trees and shrubs as wildlife plantings. Cost sharing is available but is allotted and distributed by agricultural groups. Wildlife management programs and cost-sharing need to be made available to the non-farmer. Existing programs need to be more widely publicized and cost-sharing funds should be established specifically for non-farm situations. Sources of funding for cost-sharing could come from the sale of habitat stamps, non-game/endangered species tax check-off funds, and a possible state excise tax on items that are related to the non-consumptive uses of wildlife. The Acres for Wildlife program could meet some of the need if broadened to include technical assistance. Conceptually, the Acres for Wildlife program was developed to promote management of resident wildlife species on private lands. Management involved offering free seed for food plot development and brochures giving general information. Conceptually, this program is

good, but its use in Wisconsin has been inadequate. Although not meant to be an intensive effort, this program should be expanded to include specific wildlife management information on habitat needs of various species, woodlot management, nest boxes, and expectations with regard to managing wildlife on private property. In addition, social incentives could be offered, such as local and state awards or recognition. Once developed, these social incentives may draw attention to the need to improve wildlife habitat on private lands.

Project Respect is a landowner cooperative designed to enhance the landowner-hunter relationship. The emphasis of the program is on hunter access. Technical assistance and planting materials are available but few landowners request them (Dumke and Frank 1982). Landowners in this study reacted negatively toward the access stipulation in the hypothetical program presented to them. A possible alternative may be to replace mandatory access with mandatory implementation of habitat improvement practices based on technical advice and tailored management plans. This approach may work best where large active rod and gun clubs are present to supply labor and help control access.

Probably the most successful of the Wisconsin programs was the Quail Management Program. Between 1975 and 1980, the WDNR implemented habitat restoration on 100 properties for bobwhite quail (Colinus virginianus). Efforts concentrated on improving hedgerows, riparian corridors,

woodland edge, brush piles, and food plots. The typical cost for these improvements was $1,610/property. The key elements to this program's success were as follows: (1) personal contact, (2) support by community leaders, (3) flexible cooperative agreements, (4) an acceptable agreement, and (5) interagency cooperation (Dumke 1982). Minnesota has recently embarked on a pheasant habitat improvement program using money from a pheasant habitat stamp. The emphasis of this program is the implementation of habitat improvement as stated in an agreement established between the landowner and the Minnesota Department of Natural Resources. Hunter access is not required and cost sharing is available to cover the cost of the practices (Tuszynski, pers. comm.). Again, the key to success is personal contacts and adequate incentives.

Incentives can take many forms, including tax considerations. Most respondents in this survey preferred a reduction in property taxes as an incentive to encourage wildlife management. One situation where tax considerations could be used is where critical areas are involved (e.g., riparian habitats, wetlands, natural prairies, and other unique areas). Unique areas in Wisconsin that are heavily influenced by the practices of private landowners would be the prairie chicken (Tympanuchus cupido) habitat in the central part of the state and the wild turkey (Meleagris gallopavo) habitat of west-central Wisconsin.

MANAGEMENT IMPLICATIONS

The attitudes and values of landowners are influenced by many factors, and whether a landowner manages for wildlife is a function of these attitudes and values. Landowners are as diverse as the habitats they influence. Therefore, the methods that are used to encourage wildlife management on private lands must also encompass a broad range of programs and incentives. Landowners must be made aware of wildlife needs and they must make the necessary improvements. Professional wildlife managers can no longer be content with possessing knowledge of wildlife species and management. We must also be able to understand the landowner and factors that influence his or her decisions toward wildlife and habitat. Only then will we be able to bridge the gaps between managers, producers, and consumers of the wildlife resource.

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POSTING AND HUNTER ACCESS BY WISCONSIN LANDOWNERS

Poor relationships between landowners and hunters has been well documented (Leopold 1930, Stoddard and Day 1969, Kitts 1975, Henry 1981, Stone 1981, Trainer 1982, Duffey and Stiehl 1983, Hunter Landowner Council 1983). A major point of contention is posting and restricting access to private lands. Klessig and Hale (1972) reported that over 90% of Wisconsin's hunters felt landowners have the right to prohibit hunting on their lands. Ten years later, Jackson and Anderson (1982) reported that landowners believed that failure of hunters to seek permission to hunt is the number-one problem affecting the landowner-hunter relationship. In addition, the poor relationship between landowners and hunters has the potential of affecting wildlife management programs. A major tool of wildlife management is the harvest. If access to private lands becomes more restrictive, a reduction in hunters may ensue followed by a reduction in hunting-related revenue, a major funding source for wildlife programs. The quandary is how can game harvest and other recreational activities take place on private lands in a way that will be acceptable to both the recreationist and the landowner (Decker et al. 1979, Haldeman 1982). Controlling access, rather than preventing access, appears to be the primary motivation behind posting (Beattie 1982, Brown et al. 1984). In New York, 97% of posting landowners cited poor recreationist

behavior as a major reason for posting; they post to control access rather than to prohibit hunting (Brown and Thompson 1976). As a result, posting is not necessarily an accurate measure of lands closed to hunting but rather a measure of landowner tolerance of recreationists and associated problems (Brown et al. 1984).

This study examines posting and hunter access on private lands in Wisconsin. An effort was also made to describe the types of posting used and the availability of private lands to other recreational activities.

METHODS

A mail-back questionnaire was designed to assess the attitudes and values of Wisconsin private landowners about wildlife management on their property. The questionnaire addressed landowner perceptions of habitat quality, property attributes, recreational access, posting, leasing, importance of wildlife, management practices, landowner demographics, and other factors. The questionnaire design was based on recommendations by Dillman (1978) and comparison of previously successful questionnaires (Klessig and Hale 1972, Duffey and Stiehl 1983, Brown et al. 1984).

The sample universe consisted of rural landowners possessing a minimum of 16 ha. Rural was construed as existing outside of city, town, or village limits. Questionnaire recipients were determined by stratified-random selection based on a quota of 55

landowners per county. Unavailability of a complete listing of all landowners meeting the sample criteria made it difficult to sample at a pure random or proportionate-random level. Furthermore, mailing addresses could only be obtained from county tax records located at the county seat. This portion of sampling was completed by volunteers which further facilitated the need for this selection process. It was assumed that the number of landowners meeting the sample criteria in each county was approximately equal. Therefore, the data were not weighted.

The sample consisted of 3,304 landowners from 53 of Wisconsin's 72 counties. Funding constraints prevented a statewide survey. Therefore, 17 counties were randomly eliminated in addition to Milwaukee County, which is primarily urban, and Menominee County, which is primarily in the ownership of Native Americans. During July 1984, all selected landowners received a letter of introduction requesting their cooperation with the survey and alerting them to its delivery. A questionnaire, cover letter, and business reply return envelope were mailed during the first week of August, and a follow-up reminder was mailed in September. The last response was received on 17 December.

Non-response bias was addressed by conducting a telephone survey of 40 randomly selected non-respondents representing 2% of the total 1,783 non-respondents. Data were obtained from 9 questionnaire items and compared statistically with the main survey response using Student's

t-test. Data were analyzed with the aid of the Statistical Package for the Social Sciences (SPSS) computer program (Nie et al. 1975).

RESULTS AND DISCUSSION

Of the original 3,304 questionnaires distributed, 1,521 (46%) were returned and 1,456 (44%) were deemed usable. Assuming that our sample of non-respondents was representative of the total, respondents and non-respondents did not differ ($p < 0.05$).

Slightly more than one-half (53%) of the landowners posted their property. An additional 4% did not post because their land was cultivated or fenced. Entering cultivated or fenced property without the landowner's permission is unlawful in Wisconsin. Craven (1982) reported a somewhat lower percentage (36%) among Wisconsin agricultural producers. This lower percentage can probably be accounted for by the lack of absentee and forest landowners in the Craven study. No statistical difference was found between incidence of posting and the various landowner groups (i.e., farmers, hobby farmers, absentee landowners), nor was there any detectable relationship between posting and the number of ha in various crop and non-crop situations. Age of respondents was not related to landowners' propensities to post. However, a slight relationship was found to exist between posting and education ($r = 0.15$, $p < 0.001$). As the education of

respondents increased, so did the incidence of posting. Respondents with at least a bachelor's degree posted their property at a rate 17% higher than those with less education (67% versus 50%). The highest rate of posting was exhibited by landowners possessing advanced degrees (i.e., Ph.D. or equivalent). No difference was found between posting and the size or type of community where respondents resided. Brown et al. (1984) found that incidence of posting was generally not related to socioeconomic factors or land use but simply to whether the landowner had some bad experience with recreationists. Landowners who hunted in Wisconsin during 1983 were more likely to post than non-hunters ($x^2 = 29.25$, $df = 2$, $p < 0.001$), possibly reflecting landowners' desire to restrict hunting opportunities for themselves. Sixty-one percent of those who hunt on their own property posted their property. Craven (1982) found no statistical difference between the proportion of hunters and non-hunters who posted their land. Possible reasons for this difference are a recent decrease in farm game, resulting in a decrease in hunting pressure; the unique legal standing of agricultural lands in production (i.e., no need to post if cultivated); and the questionable effectiveness of posting as expressed by many of the respondents in this study.

An effort was made to look at the relationship between posting and the landowners' perceptions of habitat quality for 12 wildlife species. A relationship was found between

the incidence of posting and landowners' perceptions of habitat suitability in 9 of 12 wildlife species (Table 1). Posting rates were highest for those landowners who believed waterfowl habitat to be good to excellent on their property. Jackson and Anderson (1982) also found that landowners who posted saw their property as being better suited to produce game than those landowners who did not post. Although the accuracy of landowner evaluations of habitat quality may be questionable, these findings suggest that landowners may recognize the relationship between presence of good habitat and increased demand for access. If landowners become intolerant of trespass or demand for access, presence of habitat may be viewed as problematic; hence, something to be restricted or eliminated.

Trends in posting

Messages most often used in posting were "No hunting or trespass" (59%) and "No trespass" (43%). "Hunting by permission" signs were used by only 17% of landowners who posted their property. Over a 12-year period (1956-1968) in Wisconsin, Thompson (1957, 1968) found an increase in the rate of posting (16% to 23%) on private lands. Most of this increase was accounted for by an increase in access-by-permission posting. If a comparison of numbers is made between Thompson (1968) and this study, the rate of increase for access posting has remained nearly the same (7%). If the 1984 access-by-permission rate is added to the

Table 1. Relationship between posting and landowner perceptions of habitat quality for various species.

	r value[a]	% Posting[b]
Deer	0.19	60
Grouse	0.14	64
Pheasant	0.10	61
Duck	0.16	69
Goose	0.11	68
Rabbit	0.12	57
Squirrel	0.21	62
Woodcock	0.11	64
Songbirds	0.14	59

[a]All values are significant at $p < 0.001$.

[b]Percentage of landowners posting that rate habitat as excellent to good.

1968 overall posting rate of 23%, the expected overall posting rate for 1984 would be 30%. This figure falls short of the actual rate for 1984 (53%) as determined by this study. If these numbers are assumed to be relatively accurate despite sampling differences, landowner posting has tended to become more restrictive over the past 16 years.

Past studies have shown that posting is often a result of a landowner having a negative experience with recreationists (Wauldbauer 1966, Brown et al. 1984), and that these negative experiences are the cause of poor landowner-hunter relationships (Decker et al. 1979, Sheriff et al. 1981, Henry 1981). Hunter access was allowed by 79% of the respondents in this survey, and of those who allowed hunter access, 49% also posted their property. Approximately one-half (42%) of the respondents indicated that they have experienced property damage due to the presence of recreationists on their property. Of those experiencing damage, 55% posted their land. Landowners experiencing damage also were more inclined to post ($x^2 = 101.4$, $df = 2$, $p < 0.001$) than those not having experienced property damage. These data suggest that although the majority of landowners allow hunter access, landowners may be highly selective as to who gains access.

Hunter Access

Friends, neighbors, and relatives were generally well received in all recreational areas, with gun deer hunters

(81%), bow deer hunters (69%), and small game hunters (68%) standing the best chance of gaining access to private lands (Table 2). Landowners that posted their property did not tend to view hunter access much differently from those that did not post. Again, friends, neighbors, and relatives had a good chance of gaining access, and in some cases, landowners that posted appeared to be less restrictive with this particular group. A possible explanation for this less restrictive attitude toward friends, neighbors, and relatives on posted lands may be that posting is done simply to protect recreational opportunities for this group. Jackson and Anderson (1982) also found that property owners were more tolerant of trespass if the intruder was a neighbor, partly in fear of retaliation.

Strangers requesting permission for access were not as likely to gain access as the previous group. The 3 major hunting groups demonstrated the greatest potential for gaining access. Landowner willingness to allow access favored gun deer hunters (35%), small game hunters (33%), and bow deer hunters (33%). These percentages were somewhat reduced when considering only posted lands. Other Wisconsin studies (Craven 1982, Duffey and Stiehl 1983, Kiefer 1985) also have reported a high degree of acceptability toward hunter access if permission is first obtained.

Table 2. Percentage of landowners allowing access to various recreationists under selected circumstances.

RECREATIONISTS	Friends, Neighbors, Relatives		Strangers with Permission	
	Posting landowners	All landowners	Posting landowners	All landowners
Gun deer hunter	81.6	80.6	24.1	34.5
Bow deer hunter	69.6	68.7	24.1	32.5
Waterfowl hunter	31.9	29.6	12.4	14.6
Small game hunter	68.2	68.2	25.6	33.2
Trapper	40.9	42.1	15.6	20.1
Anglers	25.4	22.6	11.4	12.0
Hiker	39.1	38.9	19.6	23.7
Snowmobiler	43.0	42.8	22.5	26.7
Cross-country skier	43.2	42.8	22.5	26.7
Camper	23.4	20.9	8.3	8.6
Berrypicker	42.8	41.1	17.3	20.4

Requests for access

Landowners were asked to estimate the number of requests for access they received during 1983 for 8 recreational activities. Hunters requested permission most often with 68% of the landowners indicating that they had between 1-15 requests for access. Approximately 7% said they had more than 15 requests. Slightly more than 70% of all requests for hunting were approved. About 25% of the respondents had no requests for hunter access. Landowners who posted their land were more likely to receive requests from hunters for access than landowners who did not post ($x^2 = 28.5$, $df = 2$, $p < 0.05$). No difference was detected between incidence of posting and requests for hunter access that were approved.

Landowners were asked to estimate the total amount of use their land received during 1983 by the various recreational groups. Use was equated to recreation days and defined as one person using the property for an activity for as little as one-half hour. Hunters accounted for the greatest percentage of use days on private lands. Approximately 35% said they had hunter use days of 1-10, 19% had 11-20, and 22% had over 30 use days.

CONCLUSIONS AND RECOMMENDATIONS

The propensity of landowners to post their property does not seem to be influenced by socioeconomic factors or landuse practices. Rather, posting appears to be related to

whether the landowners have had some negative experience with recreationists on their property or not. Posting also is related to whether the landowners are hunters or not and if they hunt on their own property. Although a majority of landowners allow hunter access, most access is limited to friends, relatives, and neighbors. This partisanism, combined with posting, may serve the landowners by protecting their property from disrespectful hunters and by preserving recreational opportunities for the landowners and favored individuals. Allowing access to known individuals extends the presence of the landowner to the property more frequently, thereby offering better control over trespassing.

Although landowners that posted did not approve significantly more requests for access than non-posting landowners, posting did influence whether a hunter would first seek permission. Therefore, posting does seem to modify hunter behavior effectively with regard to trespass. Landowners who are not adverse to allowing access to strangers may wish to further the use of access-by-permission posting. Presently, access-by-permission posting is not extensively used in Wisconsin. Kitts (1975) reported that Utah landowners, when restricting access, primarily used the access-by-permission form of restriction. This form of restriction allowed compliance with group pressure (i.e., adjoining landowners also restricting access) while still providing relatively

unrestricted access (i.e., traditional free hunting). Therefore, the present use of this form of posting in Wisconsin may merely be a friendly rejection that is less offensive, thus reducing property damage from disgruntled hunters.

One option available to landowners as a means of controlling access is the leasing of recreation rights to hunters and other groups. Over $8.5 billion was spent in the United States on hunting-related expenditures in 1980, but only about 4% of this amount went for user fees and the purchase of hunting lands (United States Fish and Wildlife Service 1982). Klessig and Hale (1972) reported that 36% of all Wisconsin hunters were willing to pay for hunting privileges. However, only about 3% of the respondents are using some form of fee hunting (Zekor 1986). Henry (1981) reported a low level of involvement with user fees in Ohio (1%). Utah landowners also strongly objected to the concept of fee hunting for profit (Kitts 1975). Exact reasons for this low involvement are unclear. Brown and Thompson (1976) believed that landowners felt it unwarranted to charge a fee because of the lack of legitimate investments in wildlife habitat. Other reasons may be the strong tradition of free hunting or the difficulty in operating a user fee system on small acreages (Stoddard and Day 1969). Kitts (1975) believed that some landowners may acquire a "psychic income" by maintaining the tradition of free hunting.

Although leasing is not used to any great degree in Wisconsin, it should be explored as an alternative. Possible benefits of leasing would be (1) a reduction of hunting pressure by controlling the number of hunters, (2) landowner awareness of who is using the property and when, (3) additional income generated through leasing, although leasing may change a landowner's responsibilities with regard to liability, (4) a certain degree of trespass control due to the presence of the leasee, and (5) an opening up of lands that are normally closed or highly restricted, thereby dispersing hunters more evenly over the area. Moreover, the combination of these factors may help to improve the overall quality of hunting in Wisconsin.

Should landowners begin investing in wildlife habitat improvements, fee hunting may increase but posting may increase as well. Therefore, improved hunter-landowner relationships and stricter enforcement of trespass laws may be the key to improving habitat as well as improving hunter access. Improving hunter-landowner relationships will be the most difficult to achieve. Sportsmen's groups are probably in the best position to initiate change and improvement in hunter-landowner relations. First, sportsmen's groups may elevate their own status by developing a higher community profile. This might be accomplished by promoting hunter safety, adopting and enforcing a strict code of ethics within their own ranks, and promoting family activities rather than male-dominated

activities. Secondly, the bond between the sportsmen's club and the landowner should be strengthened by including the landowner in clubhouse activities. Periodic outreach of this kind before, during, and after hunting seasons will help improve sportsmen and landowner awareness, the first step in problem solving.

The high degree of acceptance toward consumptive forms of recreation (i.e., hunting) by landowners is probably rooted in tradition. However, 50% of the landowners in this study do not hunt. Non-participants could be the least understanding and most difficult obstacle to overcome in the future. Therefore, it behooves the hunter to initiate change rather than become a victim of change.

Acknowledgements - We thank the National Rifle Association, Wisconsin Department of Natural Resources, University of Wisconsin Stevens Point, and the many Wisconsin sportsmen's clubs that funded this study. We also thank the Wisconsin Wildlife Federation for their support and assistance.

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APPENDIX A

Item responses from survey.

Appendix A. Item responses from questionnaire. All values are adjusted frequencies unless otherwise stated.

1. Acres owned statewide.	N=1,434	x=231.18

2. Ownership situation.

	N	%
Actively farming (own the land).	1,416	44.8
Actively farming (rent the land).	1,416	18.6
Hobby farm (own the land).	1,417	7.9
Absentee landowner (land is worked).	1,413	10.1
Absentee landowner (land is not worked).	1,413	13.9
Own and live on property (do not farm).	1,413	20.5
Other.	1,410	5.7

Appendix A. (continued).

3. Estimated acres in:

	N	x
Crops.	1,108	158.50
Pasture land.	731	53.22
Tree plantation.	338	78.58
Woodland (no grazing).	1,028	72.04
Marsh or wetland.	636	32.74
Low brush or fallow field.	265	35.10
Other.	257	18.68

4. Acres enrolled in:

	N	x
Forest crop law.	44	211.82
Woodland tax law.	109	65.84
Farmland preservation act.	157	218.32
Acres for wildlife.	44	95.86
Project Respect.	5	239.60
Other.	27	50.89

Appendix A. (continued)

5.	Stream or river present.	N=1,417	%=38.0
5a.	How many feet of stream or river front.		
	N=496 Feet=3,060.74		
5b.	Contains game fish.	N=524	%=49.4
5c.	Waterfowl hunting.	N=522	%=43.1

6.	Lake present.	N=1,405	%=10.2
6a.	Public access.	N=143	%=44.8
6b.	Waterfowl hunting.	N=146	%=54.1

7.	Is your property used by a sportsmens club?	N=1,426	%=6.4

Appendix A. (continued).

8. Activities for which access is permitted.

	N	%
Hunting	1,441	78.8
Fishing	1,442	17.6
Hiking	1,442	22.0
Camping	1,442	8.7
Trapping	1,442	34.2
Snowmobiling	1,442	42.5
Cross-country skiing	1,442	22.8
Berry pickers, etc.	1,442	27.0

Appendix A. (continued).

9. What recreationists do you or would you allow access (adjusted freq. %).

	Friends Neighbors Relatives	Strangers with Permission	Strangers without Permission
Gun deer hunters	80.3	34.4	7.7
Bow deer hunters	68.4	32.3	7.0
Waterfowl hunters	29.8	14.5	4.2
Small game hunters	68.0	33.1	6.3
Trappers	42.1	20.2	4.2
Fishermen	22.7	12.0	5.0
Hikers	38.5	23.4	7.0
Snowmobilers	48.0	27.8	8.7
Cross-country skiers	42.4	26.4	7.8
Campers	20.7	8.5	2.1
Berry pickers, etc.	40.8	20.2	5.7

Appendix A. (continued).

10. How many requests did you have for the use of your property during 1983? (adj. freq. %).

	0	1-9	10-15	15+
Hunting	25.2	59.6	8.4	6.9
Fishing	88.8	8.8	1.3	1.2
Trapping	67.2	32.4	0.3	0.1
Hiking	89.9	9.0	0.5	0.6
Snowmobiling	70.6	22.4	1.8	5.3
Cross-country skiing	88.5	10.7	0.2	0.6
Camping	93.4	5.8	0.5	0.3
Berry picking, etc.	81.3	17.3	0.8	0.6

Appendix A. (continued).

10a. How many of the requests did you approve? (adj. freq. %).

	0	1-9	10-15	15+
Hunting	29.9	60.3	5.3	4.5
Fishing	89.5	8.5	0.9	1.1
Trapping	71.9	27.8	0.3	0.1
Hiking	90.7	8.3	0.5	0.5
Snowmobiling	72.9	20.5	1.5	5.1
Cross-country skiing	89.0	10.2	0.1	0.6
Camping	94.4	4.8	0.4	0.4
Berry picking, etc.	83.0	16.1	0.5	0.4

Appendix A. (continued).

11. Please estimate the total amount of use your property received by the following recreationists during 1983 (recreation days/year). (adj. freq. %).

	0	1-10	11-20	21-30	30+
Hunters	15.4	34.5	19.1	8.6	22.3
Trappers	66.1	17.0	8.3	3.8	4.8
Fishermen	80.9	8.2	3.5	1.5	5.9
Hikers	75.1	13.1	4.5	1.5	5.8
Snowmobilers	58.7	17.3	6.2	4.2	13.6
Cross-country skiers	79.6	12.0	3.4	1.5	3.5
Campers	91.0	6.6	0.6	0.6	1.2
Berry pickers, etc.	67.1	23.7	3.9	1.5	3.8

Appendix A. (continued).

12. What is the maximum number of recreationists your property can accomodate at one time without having a crowded condition? (adj. freq. %).

	0	1-5	6-10	11-20	21-30	30+
Deer gun hunters	9.1	51.0	26.4	9.3	1.5	2.6
Deer bow hunters	11.9	52.7	23.8	7.6	1.2	2.7
Waterfowl hunters	46.2	40.3	9.6	2.4	0.1	1.3
Small game hunters	11.1	55.7	22.9	7.4	1.2	1.7
Fishermen	57.9	25.0	8.3	4.5	1.2	3.1
Hikers	23.9	25.8	21.2	13.2	3.6	12.3
Snowmobilers	23.5	35.1	19.2	9.0	3.0	10.2
Cross-country skiers	24.9	24.3	24.3	11.6	3.4	11.5
Berry pickers, etc.	27.4	39.4	17.5	6.9	1.3	7.4

Appendix A. (continued).

13. Have you suffered property damage from recreationists on your property?

Yes	41.9%
No	58.1%

14. Is any of your property posted?

Yes	52.5%
No	43.4%
Don't need to post because land is cultivated.	4.1%

14a. Which of the following signs are used? (adj. freq. %).

No trespass	42.6
No hunting or trespass	59.0
Hunting by permission	16.6
No hunting or fishing	3.3
Shooting preserve	0.8
Game farm	2.3
Other	7.2

Appendix A. (continued).

14b. Who posted the property? (adj. freq. %).

Owner	92.1
Sportsmen club	2.0
Tenant	4.6
Other	5.1

15. Do you lease or charge a fee for the use of your property during hunting or trapping seasons?

Yes	3.3%
No	96.7%

15a. During what seasons do you use a lease or fee agreement? (adj. freq. %). N=42

Deer gun (shotgun)	57.8
Deer bow	52.4
Waterfowl	33.3
Small game	42.9
Trapping season	28.6

Appendix A. (continued).

15b. What leasing arrangement best typifies the one you use? (adj. freq. %).

	Day	Week	Season	Individual	Group	Acre
Deer gun	---	--	57.1	7.1	16.7	7.1
Deer bow	---	--	42.9	7.1	11.9	7.1
Waterfowl	9.5	--	23.8	7.1	4.8	2.4
Small game	4.8	--	31.0	4.8	9.5	4.8
Trapping	---	--	33.3	9.5	7.1	---

Appendix A. (continued).

15c. How much gross income is generated per year from these lease arrangements? (adj. freq. %).

$ 1 - 50	36.6	
51 - 100	17.1	
101 - 200	12.2	
201 - 300	7.3	$\bar{x}$ = $101 - 200
301 - 400	7.3	N = 41
401 - 500	4.9	
501 - 1,000	9.8	
1,000+	4.9	

16. Do you believe landowners should receive money or other forms of compensation for wildlife harvested on their property? (adj. freq. %).

Strongly agree	25.5%	
Agree	26.5%	
Neutral	29.4%	$\bar{x}$ = 2.47
Disagree	12.0%	N = 1,421
Strongly disagree	6.6%	

Appendix A. (continued).

17. The responsibility of wildlife habitat management on private lands belongs to the landowner. (adj. freq. %).

Strongly agree	26.2%	
Agree	43.4%	
Neutral	18.3%	$\bar{x}$ = 2.20
Disagree	8.7%	N = 1,430
Strongly disagree	3.5%	

18. The responsibility of wildlife habitat management on private lands belongs to the WDNR. (adj. freq. %).

Strongly agree	2.6%	
Agree	11.8%	
Neutral	17.6%	$\bar{x}$ = 3.73
Disagree	33.7%	N = 1,411
Strongly disagree	34.2%	

Appendix A. (continued).

19. Considering how your land is used, please indicate the suitability of your property to support the following species. (adj. freq. %).

Species	Excellent	Good	Average	Fair	Poor	Don't Know
Deer	41.6	25.8	12.9	9.0	6.4	4.4
Ruffed grouse	21.7	21.2	13.3	9.6	12.0	22.2
Pheasant	15.2	19.5	14.3	13.9	22.8	14.2
Duck	8.6	12.8	8.6	12.1	36.8	21.2
Goose	6.3	8.3	5.9	7.8	43.6	28.2
Rabbit	31.2	29.7	18.0	10.2	4.2	6.7
Squirrel	31.5	24.7	15.3	8.9	10.9	8.7
Quail	11.0	14.9	11.7	10.5	19.4	32.5
Hungarian Partridge	15.3	16.0	13.3	11.3	16.5	27.5
Woodcock	11.7	12.4	10.8	9.0	17.5	38.6
Bear	5.0	6.4	6.0	4.4	35.8	42.4
Songbirds	40.6	24.8	13.1	3.9	3.4	14.3

Appendix A. (continued).

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20. Which best describes your situation?

I have detailed knowledge of MOST species of wildlife and wildlife habitat needs on my property.	23.5%
I have detailed knowledge of SOME species of wildlife and wildlife habitat needs on my property.	38.3%
I have little detailed knowledge of wildlife and wildlife habitat needs on my property.	26.1%
I have no detailed knowledge of wildlife and wildlife habitat needs on my property.	12.1%

---

21. How important is wildlife when you decide how to use your land?

Extremely important	18.8%	
Very important	15.8%	
Important	26.7%	$\bar{x}$ = 2.27
Somewhat important	23.5%	N = 1,440
Not important at all	15.2%	

Appendix A. (continued).

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22. Over the past 10 years, have you taken part in any wildlife management projects using government support? (N = 1,438).

Yes	4.5%
No	95.5%

---

*22a - 22c were not used in the analysis.

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23. In order to effectively manage some wildlife species, large tracts of land must be considered in the planning process. Some states have begun using landowner cooperatives in which a group of landowners agree to enroll their property to form a wildlife management unit. The program is voluntary and the only requirements are that landowners must enroll for a set period of time, hunter access must be provided for, and you must agree to initiate certain wildlife management practices. No major cost is involved and the primary land use is not significantly altered. Would you consider enrolling in this type of program if offered in Wisconsin?

Yes	25.7%
No	69.1%

N = 1,380

Appendix A. (continued).

24. Please indicate which of the following species you are now managing for or would like to manage for in the future. (adj. freq. %).

Species	Presently manage for	Would like to manage for	Not interested
Deer	26.8	22.3	38.7
Ruffed grouse	13.6	23.3	39.6
Pheasant	13.0	25.0	39.1
Duck	9.9	14.6	44.6
Goose	5.8	12.3	47.4
Rabbit	20.5	16.6	40.7
Squirrel	19.3	16.2	40.3
Quail	6.3	17.3	43.7
Partridge	10.8	21.7	40.1
Woodcock	6.4	15.0	45.2
Bear	2.8	8.3	54.0
Songbirds	21.9	21.1	36.2

Appendix A. (continued).

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25. Do you manage your property for non-game wildlife?

Yes	28.8%
No	71.2%

25a. Please indicate the management techniques you use.

Create or maintain water stations.	36.7%
Provide or maintain food plots.	36.0%
Maintain cover.	71.0%
Establish nesting cover.	41.5%
Feeding stations for songbirds.	55.8%
Preserve wetlands.	50.0%
Leave cavity trees.	72.6%
Other.	8.8%

Appendix A. (continued).

26. How reliable is wildlife management information from the following? (adj. freq. %).

	Very reliable	Reliable	Unreliable	Very unreliable	Undecided
Close friend	6.2	33.3	10.5	2.6	47.4
UW-Extension	11.2	39.9	4.3	1.7	43.5
ASCS	7.1	33.8	5.8	2.1	51.1
SCS	5.8	27.0	5.0	1.9	60.2
County agent	9.3	41.1	5.1	2.0	42.5
Private consult.	3.3	22.2	6.2	1.7	66.6
DNR forester	12.0	35.6	5.7	3.8	42.8
Game warden	10.5	34.6	6.2	3.7	45.0
Neighbors	4.9	28.5	12.2	2.4	51.9
UW-Wildl. prof.	8.7	27.0	4.8	2.3	57.3
Sportsmen club	6.1	31.2	7.3	2.6	52.8

Appendix A. (continued).

27. Have you ever requested any technical assistance for managing wildlife on your property?

Yes	10.4%	N = 1,456
No	89.6%	

27a.

From whom?		Did they help?	
WDNR	94.7%	Yes	68.6%
UW-Ext.	87.5%	Yes	70.0%
ASCS	95.6%	Yes	79.4%
SCS	91.7%	Yes	77.8%
Private consult.	84.2%	Yes	78.9%
Other	75.0%	Yes	56.3%

Appendix A. (continued).

28. Would you consider using a professionally prepared wildlife management plan?

Yes	31.2%
No	68.8%

N = 1,422

28a. How much would you be willing to pay for a professionally prepared wildlife management plan?

$ 0	46.6%	
1 - 99	29.7%	
100 - 199	11.9%	
200 - 299	4.0%	
300 - 399	1.4%	
400 - 499	2.6%	$\bar{x}$ = $1 - 99
500 - 699	1.6%	N = 427
700 - 799	0.2%	
800 - 1,000	0.0%	
1,000+	1.9%	

Appendix A. (continued).

29.	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	$\bar{x}$
I don't have time to manage for wildlife.	12.0%	38.6%	25.3%	19.7%	4.4%	2.66
It is too costly to manage for wildlife.	6.7%	30.9%	38.6%	19.9%	3.9%	2.83
I don't want to attract hunters.	23.0%	42.3%	21.1%	11.0%	2.6%	2.28
I don't want to attract wildlife.	3.3%	6.2%	17.8%	45.4%	27.3%	3.87
I am concerned about getting sued.	25.5%	39.6%	18.8%	12.4%	3.8%	2.29
I don't know who to ask to show me how to manage for wildlife.	2.5%	18.2%	32.3%	38.0%	9.0%	3.33
I don't care much about wildlife on my land.	3.0%	6.3%	17.2%	42.3%	31.3%	3.93

Appendix A. (continued)

30. Which best describes your feelings?

I should put forth more effort to improve and maintain wildlife habitat.	19.1%
I am presently doing as much as I can to improve and maintain wildlife habitat.	40.2%
Wildlife habitat will maintain itself; therefore, I need not do anything special.	40.7%

31. Ranking of potential incentives.

	Adj. Freq.	Ranking	N
1. Property tax reduction	47.3	2.06	619
2. Free tech. assistance	20.8	3.04	664
3. Free or low-cost trees, shrubs, and seeds	17.8	2.86	711
4. Direct cash payments	15.1	3.74	787
5. Wildlife damage control	11.1	4.04	725
6. Pheasant for stocking	7.9	4.52	658
7. Increased warden patrols	7.4	5.19	649

Appendix A. (continued)

32. Did you hunt in Wisconsin in 1983?

Yes	49.4%
No	50.6%

32a. What did you hunt? (adj. freq. %).

Deer	93.9	Bear	3.1
Pheasant	29.9	Goose	13.4
Rabbit	42.2	Squirrel	41.5
Duck	21.8	Grouse	36.4
Other	3.6		

32b. Do you hunt on your property?

Yes	95.2%
No	4.8%

32c. Do you hunt on other private lands?

Yes	64.7%
No	35.3%

Appendix A. (continued).

33.	Do you trap? (N = 1,440)	
	Yes	5.5%
	No	94.5%

33a.	What do you trap? (adj. freq. %).	
	Beaver	20.3
	Mink	70.5
	Muskrat	85.9
	Otter	11.5
	Other	51.3

34. Age $\bar{x}$ 54.05 years N = 1,432

35. Sex Male 1,293 (90.00%) Female 143 (10.00%)

Appendix A. (continued).

36. Education	Yrs.	Adj. Freq. (%)	N = 1,433
	5	0.1	
	6	0.6	
	7	1.4	
	8	15.4	
	9	1.7	$\bar{x}$ = 11.8 years
	10	3.1	
	11	2.0	
	12	37.8	
Some college		19.5	
B.S. or equivalent		10.7	
M.S. or equivalent		4.5	
Advanced degree		3.4	

37. Occupation	Adj. Freq. (%)	N = 1,373
Retired	17.9	
Farmer	39.9	
Professional	8.3	
Blue collar	13.1	
White collar	8.0	
Other	12.7	

Appendix A. (continued).

38. Income before taxes.

	Adj. Freq. (%)	N = 1,319
<$3,000	2.2	
$3,000 - 4,999	2.3	
$5,000 - 5,999	2.9	
$6,000 - 9,999	7.9	
$10,000 - 14,999	13.6	
$15,000 - 19,999	14.9	
$20,000 - 29,999	20.3	
$30,000 - 49,999	19.0	
>$50,000	16.9	

39. Community

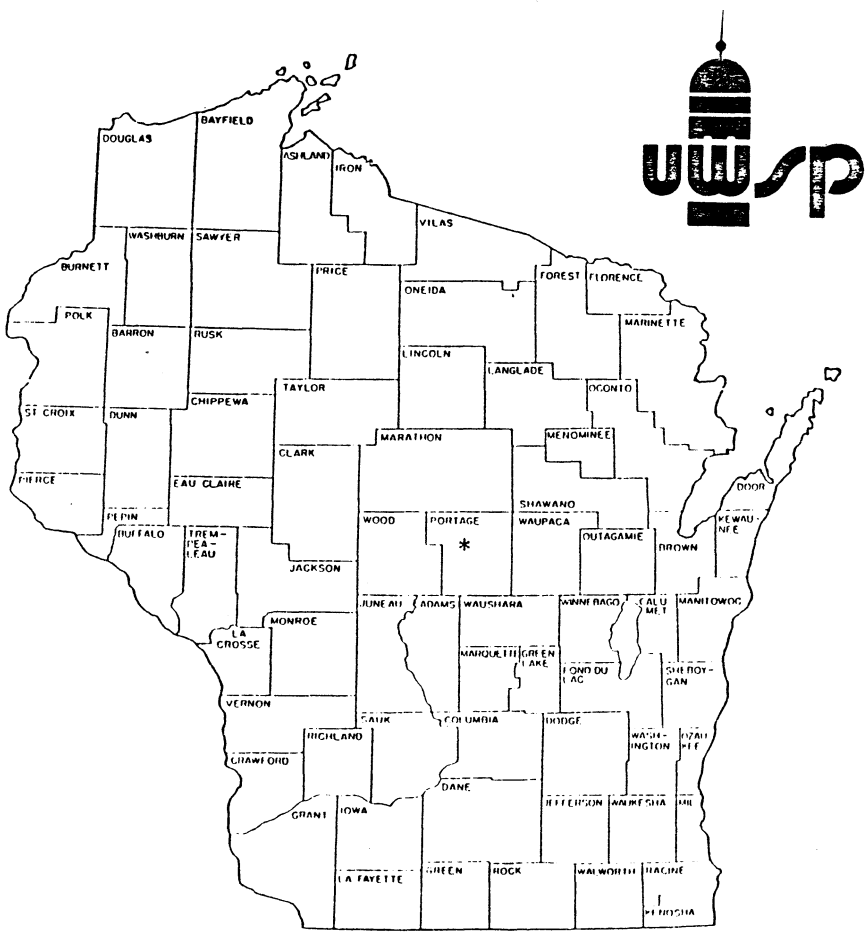
	Adj. Freq. (%)
Farm/rural	75.9
Sm. town 4,999	6.0
Sm. city 5,000-49,999	8.7
Lg. city 50,000-500,000	3.8
Very lg. city 500,000	2.2
Suburb	3.4

N = 1,431

APPENDIX B

Questionnaire used in this survey.

THE WISCONSIN LANDOWNER SURVEY



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WISCONSIN LANDOWNER STUDY

This questionnaire is divided into 5 sections and will take about 45 minutes to complete. Please answer all the questions as accurately as possible. Remember, all your answers are STRICTLY CONFIDENTIAL and will never be used in conjunction with your name.

SECTION I

This section deals with the physical nature and primary uses of your property. Read each question carefully and answer ALL questions to the best of your ability.

1. How many acres do you own or rent within _____ county?

   _____ ACRES (do not include acres within village or city limits).

2. Which of the following best describes your situation? (check all that apply).

   ____ Actively farming (own the land).

   ____ Actively farming (rent the land).

   ____ Hobby farm (own the land).

   ____ Absentee landowner (land is worked).

   ____ Absentee landowner (land is not worked).

   ____ Own and live on the property (do not farm).

   ____ Other (please explain) _____

3. Please estimate how many acres are in:

Crops, including hay, alfalfa, etc.	_____	acres
Pasture land.	_____	acres
Tree plantation.	_____	acres
Woodland (no grazing).	_____	acres
Marsh or wetland.	_____	acres
Low brush or fallow fields.	_____	acres
Other (please explain)	_____	acres

   _____

4. How many acres of your property are enrolled in the following government programs?

Forest crop law.	_____ acres
Woodland tax law.	_____ acres
Farmland Preservation Act.	_____ acres
Acres for Wildlife.	_____ acres
Project Respect.	_____ acres
Other (please specify).	_____ acres

5. Does a stream or river occur on your property?

____ No (Skip to question 6) ____ Yes

5a. How many feet or miles of stream or riverfront occur on your property?

____ feet ____ miles

5b. Does the stream or river contain game fish (trout, bass, pike, panfish, etc.)?

____ Yes ____ No

5c. Does waterfowl hunting occur on this stream or river in the vicinity of your property?

____ Yes ____ No

6. Does a lake occur on or border your property?

____ No (Skip to question 7) ____ Yes

6a. Is there a public access to that lake?

____ Yes ____ No ____ Don't know

6b. Does waterfowl hunting occur on this lake?

____ Yes ____ No ____ Don't know

SECTION II

This section deals with the accessibility of your property to outdoor recreationists. Answer ALL questions carefully and as accurately as possible.

7. Is any of your property used by a sportsmens club for hunting, fishing, or trapping?

____ Yes ____ No

8. Do you allow other people access to your property for any of the following (check all that apply).

____ Hunting
____ Fishing
____ Hiking
____ Camping
____ Trapping
____ Snowmobiling
____ Cross-country skiing
____ Berry pickers, asparagus pickers, etc.

9. Which of the following types of recreationists DO YOU or WOULD YOU allow to use your property? (check all that apply).

	Friends, Neighbors, Relatives	Strangers with Permission	Strangers without Permission
Gun deer hunters	____	____	____
Bow deer hunters	____	____	____
Waterfowl hunters	____	____	____
Small game hunters	____	____	____
Trappers	____	____	____
Fishermen	____	____	____
Hikers	____	____	____
Snowmobilers	____	____	____
Cross-country skiers	____	____	____
Campers	____	____	____
Berry pickers, asparagus pickers, etc.	____	____	____

10. During all of 1983, approximately HOW MANY REQUESTS did you have for the use of your property for the following activities?

	0	1-9	10-15	more than 15
Hunting	___	___	___	___
Fishing	___	___	___	___
Trapping	___	___	___	___
Hiking	___	___	___	___
Snowmobiling	___	___	___	___
Cross-country skiing	___	___	___	___
Campers	___	___	___	___
Berry pickers, asparagus pickers, etc.	___	___	___	___

10a. Approximately how many of the above requests DID YOU APPROVE?

	0	1-9	10-15	more than 15
Hunting	___	___	___	___
Fishing	___	___	___	___
Trapping	___	___	___	___
Hiking	___	___	___	___
Snowmobiling	___	___	___	___
Cross-country skiing	___	___	___	___
Campers	___	___	___	___
Berry pickers, asparagus Pickers, etc.	___	___	___	___

11. Please estimate the total amount of use your land received during 1983, by the following recreationists, including yourself and your family. A recreation day is one person using the property for an activity for as little as one half hour.

Activity	Amount of use in days per year				
	None	1-10	11-20	21-30	30+
Hunters	____	____	____	____	____
Trappers	____	____	____	____	____
Fishermen	____	____	____	____	____
Hikers	____	____	____	____	____
Snowmobiliers	____	____	____	____	____
Cross-country skiers	____	____	____	____	____
Campers	____	____	____	____	____
Berry pickers, asparagus pickers, etc.	____	____	____	____	____

12. What is the maximum number of recreationists your property can accommodate AT ONE TIME without having a crowded condition? (Please check each activity).

Activity	Number of people					
	None	1-5	6-10	11-20	21-30	30+
Deer gun hunters	____	____	____	____	____	____
Deer bow hunters	____	____	____	____	____	____
Waterfowl hunters	____	____	____	____	____	____
Small game hunters	____	____	____	____	____	____
Fishermen	____	____	____	____	____	____
Hikers	____	____	____	____	____	____
Snowmobiliers	____	____	____	____	____	____
Cross-country skiers	____	____	____	____	____	____
Berry pickers, asparagus pickers, etc.	____	____	____	____	____	____

13. Have you suffered any property damage due to the presence of recreationists on your property?

____ Yes ____ No

14. Is any of your property posted (No Trespass, No Hunting, etc.)?

____ No (Skip to question 15) ____ Yes

____ Don't need to post because land is cultivated or fenced

14a. Which of the following signs are used to post your property? (check all that apply).

____ No Trespass

____ No Hunting or Trespass

____ Hunting by Permission only

____ No Hunting or Fishing

____ Shooting Preserve

____ Game Farm

____ Other (please specify) _____

14b. Who posted the property?

____ Owner

____ Sportsmens club

____ Tenant

____ Other (please explain) _____

SECTION III

This section deals with the idea of receiving compensation from recreationists for the right to use your property. Please answer ALL questions as accurately as possible and remember that all your answers are ABSOLUTELY CONFIDENTIAL.

15. Do you lease out or charge a fee for the use of your property during the hunting or trapping season?

____ No (Skip to question 16) ____ Yes

15a. During what seasons do you use a leasing or fee arrangement?

____ Deer gun season (or shotgun).

____ Deer bow season.

____ Waterfowl season (including geese).

____ Small game season (grouse, rabbit, pheasant, etc.).

____ Trapping (general).

15b. What leasing or fee arrangement best typifies the system you use during each of the following seasons? (check all that apply for each season).

BY THE:	Day	Week	Season	Individual	Group	Acre
Deer gun	____	____	____	____	____	____
Deer bow	____	____	____	____	____	____
Waterfowl	____	____	____	____	____	____
Small game	____	____	____	____	____	____
Trapping	____	____	____	____	____	____

15c. How much gross income is generated per year from these leasing or fee arrangements? (check one).

____ $1-50	____ $201-300	____ $501-1,000
____ $51-100	____ $301-400	____ $over $1,000
____ $101-200	____ $401-500	

16. Do you believe landowners should receive money or other forms of compensation for wildlife harvested on their property by people other than friends, neighbors, and relatives? (circle one).

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

SECTION IV

This section deals with wildlife habitat management, management techniques used, and wildlife species associated with your property. Answer ALL questions as accurately as possible

17. The responsibility of wildlife habitat management on private lands belongs to the landowner. (circle one).

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

18. The responsibility of wildlife habitat management on private lands belongs to the Department of Natural Resources. (circle one).

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

19. Considering how your land is used, please indicate the suitability of your property to support the following species.

Species	Excellent	Good	Average	Fair	Poor	Don't Know
Deer	____	____	____	____	____	____
Ruffed grouse	____	____	____	____	____	____
Pheasant	____	____	____	____	____	____
Duck	____	____	____	____	____	____
Goose	____	____	____	____	____	____
Rabbit	____	____	____	____	____	____
Squirrel	____	____	____	____	____	____
Quail	____	____	____	____	____	____
Partridge, Hun.	____	____	____	____	____	____
Woodcock	____	____	____	____	____	____
Bear	____	____	____	____	____	____
Songbirds	____	____	____	____	____	____

20. Please indicate your awareness of the wildlife and wildlife habitat needs on your property by CIRCLING the number that best describes your situation.

    1 I have Detailed knowledge of MOST species of wildlife and wildlife habitat needs on my property.

    2 I have Detailed knowledge of SOME species of wildlife and wildlife habitat needs on my property.

    3 I have Little detailed knowledge of wildlife and wildlife habitat needs on my property.

    4 I have No detailed knowledge of wildlife and wildlife habitat needs on my property.

21. How important is wildlife when you decide how to use your land? (check one)

    ____ Extremely important

    ____ Very important

    ____ Important

    ____ Somewhat important

    ____ Not important at all

22. Over the past 10 years, have you taken part in any wildlife management projects using government supports or programs?

    ____ No (Skip to question 23) ____ Yes

22a. What kind of supports or programs? (please explain)

_____

_____

22b. Do you believe your participation in any of these programs was successful* in terms of improving the wildlife situation on your property?

____ No (Skip to question 23) ____ Yes

22c. If YES, which of the programs do you feel were successful?

_____

_____

23. In order to effectively manage some wildlife species, large tracts of land must be considered in the planning process. Some states have begun using landowner cooperatives in which a group of landowners agree to enroll their property to form a wildlife management unit. The program is voluntary and the only requirements are that landowners must enroll for a set period of time, hunter access must be provided for and you must agree to initiate certain wildlife management practices. No major cost is involved and the primary land-use is not significantly altered. Would you consider enrolling in this type of program if it were offered in Wisconsin?

____ Yes ____ No

24. Please indicate which of the following species you are now managing for or would like to manage for in the future. (check all that apply).

SPECIES	PRESENTLY MANAGE FOR	WOULD LIKE TO MANAGE FOR	NOT INTERESTED
Deer	____	____	____
Ruffed grouse	____	____	____
Pheasant	____	____	____
Duck	____	____	____
Goose	____	____	____
Rabbit	____	____	____
Squirrel	____	____	____
Quail	____	____	____
Partridge	____	____	____
Woodcock	____	____	____
Bear	____	____	____
Songbirds	____	____	____

25. Do you in any way actively manage your property to support non-game wildlife (example: frogs, songbirds, reptiles)?

____ No (Skip to question 26) ____ Yes

25a. Please indicate the management techniques you use. (check all that apply).

____ Create or maintain water stations

____ Provide or maintain food plots

____ Maintain cover

____ Establish nesting cover

____ Feeding stations for songbirds

____ Preserve wetlands

____ Leave cavity trees

____ Other (please explain) _____

_____

26. In your opinion, how reliable is wildlife management information given out by the following people or agencies?

	Very Reliable	Reliable	Unreliable	Very Unreliable	Undecided
Close friend	____	____	____	____	____
UW-Extension	____	____	____	____	____
ASCS	____	____	____	____	____
SCS	____	____	____	____	____
County agent	____	____	____	____	____
Private Consultants	____	____	____	____	____
DNR forester	____	____	____	____	____
Game warden	____	____	____	____	____
Neighbors	____	____	____	____	____
University wildlife professor	____	____	____	____	____
Sportsmens club	____	____	____	____	____

27. Have you ever requested any technical assistance for managing wildlife on your property?

____ No (Skip to question 28) ____ Yes

27a. Who did you ask?	Did they help?	
____ Wis. DNR	____ Yes	____ No
____ UW-Extension	____ Yes	____ No
____ ASCS	____ Yes	____ No
____ SCS	____ Yes	____ No
____ Private consultants	____ Yes	____ No
____ Other	____ Yes	____ No

(please explain) _____

28. Frequently, a Management Plan is created to help achieve the specific goals and objectives of the landowner. This management plan includes specific techniques that can be used to create wildlife habitat diversity by using hedgerows, windbreaks, food and cover plantings, erosion control, and woodlot management. Would you consider using a professionally prepared Wildlife Management Plan to assist you in making your land use decisions?

____ No (Skip to question 29) ____ Yes

28a. How much would you be willing to pay for a professionally prepared wildlife management plan? (check one).

____ $0	____ $400-499
____ $1-99	____ $500-699
____ $100-199	____ $700-799
____ $200-299	____ $800-1,000
____ $300-399	____ $1,000+

29. A number of reasons have been identified as to why a landowner may not manage wildlife on his or her land. Please CIRCLE the answer next to each of the following reasons as to which applies best to your situation.

I don't have time to manage for wildlife.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

It is too costly to manage for wildlife.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

I don't want to attract hunters.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

I don't want to attract wildlife.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

I am concerned about someone getting hurt and suing me.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

I don't know who to ask to show me how to manage for wildlife.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

I don't care much about wildlife on my land.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

30. Some people believe that private landowners are not doing enough to improve and maintain wildlife habitat on their property. Which of the following best describes your feelings? (check one).

____ I should put forth more effort to improve and maintain wildlife habitat.

____ I am presently doing as much as I can to improve and maintain wildllife habitat.

____ Wildlife habitat will maintain itself, therefore, I need not do anything special for wildlife habitat.

31. A variety of methods have been used in some states to encourage wildlife management on private lands. Please rank the following according to your preference.

1 = Most Preferred, 2 = Second most Preferred, 3 = Third most Preferred, 4 = Fourth most Preferred, etc.

____ Increased warden patrols.

____ Direct cash payments.

____ Free technical assistance.

____ Property tax reductions.

____ Free or low cost trees, shrubs, and seed.

____ Wildlife damage control.

____ Pheasants for stocking.

SECTION V

The following questions are considered to be background information and are needed to compare your responses with the responses of other similar individuals. ALL OF YOUR ANSWERS TO THESE AND ALL OTHER QUESTIONS ARE STRICTLY CONFIDENTIAL.

32. Did you hunt in Wisconsin in 1983?

____ No (Skip to question 33) ____ Yes

32a. What do you hunt? (check all that apply).

____ Deer ____ Bear

____ Pheasant ____ Goose

____ Rabbit ____ Squirrel

____ Duck ____ Grouse

____ Other (explain) _____

32b. Do you hunt on your property?

____ Yes ____ No

32c. Do you hunt on other privately owned lands.

____ Yes ____ No

33. Do you trap in Wisconsin?

____ No (Skip to question 34) ____ Yes

33a. What do you trap? (check all that apply).

____ Beaver ____ Muskrat

____ Mink ____ Otter

____ Other _____

34. How old are you? _____ years old.

35. Are you ____ male ____ female.

36. How many years of schooling have you completed?

____1 ____2 ____3 ____4 ____5 ____6 ____7 ____8

____9 ____10 ____11 ____12

____ Some college

____ B.S. or equivalent

____ M.S. or equivalent

____ Advance degree (M.D., Ph.D., etc.)

37. What is the main occupation of the household head(s)?

_____

38. Please indicate your approximate total household income before taxes.

____ less than $3,000 ____ $15,000-19,999

____ $3,000-4,999 ____ $20,000-29,999

____ $5,000-5,999 ____ $30,000-49,999

____ $6,000-9,999 ____ over $50,000

____ $10,000-14,999

39. Indicate the type of community in which you live.

____ Farm or rural

____ Small town (4,999 or less)

____ Small city (5,000 to 49,000)

____ Large city (50,000 to 500,000)

____ Very large city (over 500,000)

____ Suburb--within 15 miles of large or very large city

40. Are there any other comments that you would like to make about this questionnaire or any of the topics covered?

APPENDIX C

Introductory letter, cover letter, information sheet, and follow-up letter.

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Dear Wisconsin Landowner,

As part of a research project being conducted at the University of Wisconsin-Stevens Point, you have been selected to take part in a survey of private landowners throughout the state of Wisconsin. The purpose of the study is to determine what your feelings are about wildlife and wildlife habitat management on private lands such as yours.

Much of the research in the past has dealt with the opinions of the hunter or recreationist but the future of all types of wildlife depends on you, the private landowner.

You are one of a group of 4000 persons who have been randomly selected to represent the private landowners of Wisconsin owning 40 acres or more. In the next 2 weeks you will be receiving a questionnaire in the mail asking you your opinions regarding wildlife management on private lands.

Because this group has been scientifically selected to represent all of Wisconsin's private landowners, every response is very important to the study. If you are not the primary user of your land would you please supply us with the name and address of that person so we may forward a copy of the questionnaire. I hope you will take the time to assist me in this valuable research.

Respectfully,

Daniel T. Zekor

College of Natural Resources • (715) 346-4617

university of wisconsin/stevens point • stevens point, wisconsin 54481

Dear Wisconsin Landowner,

Here is the questionnaire I told you about in my previous letter. It takes about 45 minutes to complete and I think you'll find it enjoyable to fill out.

You are part of a special scientifically selected group choosen to represent all of Wisconsin's private landowners. If the results of this survey are to be accurate it is important that everyone who gets a questionnaire returns it.

I have tried to make the questionnaire interesting and your responses will be very helpful to me in learning more about about your views with regard to wildlife management on private lands.

Your responses are strictly confidential and will be used for this research only. I have enclosed a stamped, self-addressed envelope. I hope you will complete the questionnaire and return it to us at your earliest convenience. Thanks for your help.

Repectfully,

Daniel T. Zekor

College of Natural Resources • (715) 346-4617

university of wisconsin/stevens point • stevens point, wisconsin 54481

SOME QUESTIONS YOU MAY HAVE ABOUT THIS SURVEY

Q. How was my name selected?

A. Names were randomly selected from county platt books, addresses were obtained from county tax records.

Q. Is the Wisconsin DNR involved with this study?

A. NO. The DNR has been made aware of the study and will probably examine the results. The Wildlife Department at UW-Stevens Point is responsible for all aspects of this project.

Q. Will my name be used?

A. Absolutely Not. Your name is confidential and will never be used in association with any answers. Our interest is in the opinions of large groups of people, for example: "Of those surveyed, 92% are male and 89% are female."

Q. Should I answer every question?

A. Yes, it is very important that you answer every question. We need to get an accurate understanding of opinions of all Wisconsin Landowners.

Q. What if I have more questions?

A. If you want more information, please call Dr. Kirk Beattie, Wildlife Department, UW-Stevens Point. (715)-346-2269

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Dear Wisconsin Landowner,

About 2 weeks ago I sent you a questionnaire concerning your opinions with regard to wildlife management on private properties such as yours. I am pleased that most of the landowners contacted have returned the questionnaire, and I am still hoping to hear from you.

In order for the results of this survey to accurately portray the feelings of Wisconsin landowners, it is important that I hear from everyone. Your answers are very important to my research. Please take time to fill out your questionnaire.

Even if you feel that you are not the typical Wisconsin landowner, your opinions are also very important. Your cooperation will be greatly appreciated.

Thanks for your time.

Sincerely,

Daniel T. Zekor

College of Natural Resources • (715) 346-4617