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RESULTS OF A 1975 SURVEY OF
MINNESOTA DEER HUNTERS AND
RURAL LANDOWNERS CONCERNING
THE DEER HUNTING SEASON

by

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PREFACE

This report is the result of two different surveys and was written in two parts - the hunter section by Melanie Murn, and the landowner section by Jonathan Flug. There are, consequently, differences in the styles of presentation.

The authors have attempted to show all significant results. Therefore, not all possible tabulations are presented. Where zonal variations are insignificant, only state totals are given.

Several individuals have served as consultants to this study or have reviewed the initial draft: Frank Martin of the University of Minnesota School of Statistics, William Marshall of the University of Minnesota Department of Entomology, Fisheries, and Wildlife, Rodney Sando of the University of Minnesota Department of Forest Resources, and Douglas Gerrard, statistician.

Additional review and project coordination was provided by Edward Drury and William Craig of the Center for Urban and Regional Affairs.

TABLE OF CONTENTS

	PAGE
LIST OF TABLES	iv
LIST OF FIGURES	vii
ABSTRACT	1
SUMMARY	2
CHAPTER	
I. INTRODUCTION	5
II. METHODOLOGY.	8
THE QUESTIONNAIRES	8
THE UNIVERSES	8
CONTACTING THE SAMPLE	10
HUNTER SURVEY RESPONSE	12
Rate of Return	12
Differences Between Mailings	13
Non-response Biases	15
LANDOWNER SURVEY RESPONSE	15
Questionnaire Return Rates	15
Nonresponse Bias	16
III. RESULTS OF THE HUNTER STUDY	21
CHARACTERISTICS OF THE HUNTER GROUP	21
HUNTER ATTITUDES AND SATISFACTION	26
Satisfaction with Deer Season Regulations	26
Desired Means of Regulating Deer Harvest	29
Opinion on Management Alternatives	30
Desired Length of Season	32
Quality in a Hunt	32
Factors in Choosing a Hunting Zone	34
Perceived Deer Population Level in Hunting Zone	34
Hunter Knowledge of Illegal Deer Kills	35
HUNTER SATISFACTION AS RELATED TO HUNTER CHARACTERISTICS	37
CONCLUSION - SUMMARY	42
IV. RESULTS OF THE LANDOWNER SURVEY	44
LANDOWNER CHARACTERISTICS.	44
LANDOWNER ATTITUDES REGARDING MANAGEMENT ALTERNATIVES.	47
RELATIONSHIPS BETWEEN LANDOWNER CHARACTERISTICS AND ATTITUDES TOWARD MANAGEMENT ALTERNATIVES.	52
EXTENT OF LANDOWNERS' PROBLEMS WITH DEER AND DEER HUNTERS.	55

RELATIONSHIPS BETWEEN LANDOWNERS' PROBLEMS WITH DEER AND DEER HUNTERS AND ATTITUDES TOWARD ALTERNATIVES	60
LANDOWNER SATISFACTION WITH PRESENT DEER HUNTING SEASON REGULATIONS	63
CONCLUSIONS.	65
APPENDIX A - THE HUNTER QUESTIONNAIRE	67
APPENDIX B - THE LANDOWNER QUESTIONNAIRE	74
REFERENCES	80

LIST OF TABLES

TABLE 1: Hunter and Landowner Sampling Rates	9
TABLE 2: Hunter Response Rate - First Mailing	13
TABLE 3: Hunter Response Rate - Second Mailing	13
TABLE 4: Landowner Questionnaire Return Rate	16
TABLE 5: Landowner Follow-up Questionnaire Return Rate	18
TABLE 6: Hunters Tagging a Deer (Deer Kill) in 1974 and 1975 - Percent of Respondents	21
TABLE 7: Number of Deer Tagged and Number of Deer Seen per Hunter (1975)	22
TABLE 8: Amount of Deer Sign Seen - Percent of Hunters by Zone	23
TABLE 9: Changes in Deer Hunting Area - Percent of Hunters by Zone	23
TABLE 10: Percent of Hunters Who Own Land for Hunting	24
TABLE 11: Private Land Ownership - Percent by Zone	24
TABLE 12: Miles Traveled to Hunting Spot.	25
TABLE 13: Hunters Who Hunt on Public or Private Land - Percent of Respondents	26
TABLE 14: Satisfaction With Hunting Regulations - Percent	27
TABLE 15: Hunter Opinion on Keeping Regulations the Same in 1976 - Percent	28
TABLE 16: Hunter Choice of Methods of Regulating the Deer Harvest - Percent	30
TABLE 17: Hunter Opinion of Deer Season Management Alternatives. State Totals - Percent of Respondents	31
TABLE 18: Hunter Rating of Importance of Factors Contributing to a Quality Hunt - Percent of Respondents	33
TABLE 19: Hunter Knowledge of Illegal Deer Kills During Season	35
TABLE 20: Number of Illegal In-Season Deer Kills Known (Among Hunters Knowing of at Least One) - Percent of Respondents	35
TABLE 21: Hunter Knowledge of Illegal Deer Kills Outside the Season	36
TABLE 22: Known Number of Illegal Deer Kills Outside the Season (Among Hunters Knowing of at Least One) - Percent of Respondents	36

TABLE 23: Satisfaction with Hunting Regulations vs. Hunting Success - Percent of Respondents	37
TABLE 24: Hunter Opinion on Regulations Remaining the Same vs. Hunting Success - Percent of Respondents	38
TABLE 25: Satisfaction with Hunting Regulations vs. Amount of Deer Sign Seen - Percent of Respondents	39
TABLE 26: Hunter Opinion on Regulations Remaining the Same vs. Amount of Deer Sign Seen - Percent of Respondents	39
TABLE 27: Satisfaction with Hunting Regulations vs. Perceived Change in Number of Deer - Percent of Respondents	40
TABLE 28: Hunter Opinion on Regulations Remaining the Same vs. Perceived Change in Number of Deer - Percent of Respondents	40
TABLE 29: Satisfaction with Hunting Regulations vs. Knowledge of In-season Illegal Deer Kills - Percent of Respondents	41
TABLE 30: Opinion on Regulations Remaining the Same vs. Knowledge of In-season Illegal Deer Kills - Percent of Respondents	41
TABLE 31: Satisfaction with Hunting Regulations vs. Hunter Choice of Methods of Regulating Deer Harvest - Percent of Respondents	42
TABLE 32: Approximate Median Number of Acres Owned and Rented	44
TABLE 33: Percent of Farms Engaging in Various Enterprises	45
TABLE 34: Involvement of Landowners with Deer Hunting	46
TABLE 35: Percent of Landowners Allowing Hunting and Percent of Farms Posted	46
TABLE 36: Landowner Attitudes Regarding Deer Hunting Season Management Alternatives	49
TABLE 37: Zonal Distribution of Percent of Landowners Favoring Management Alternatives (Among Landowners with Opinions)	51
TABLE 38: Median Desired Length of Deer Hunting Season by Landowners	52
TABLE 39: Desired Time of Year for Deer Hunting Season by Landowners - Percent of Respondents	52
TABLE 40: Relationship Between Farm Size and Percent Favoring Management Alternatives (Among Landowners with Opinions)	53
TABLE 41: Relationship Between Major Farming Enterprises and Percent Favoring Management Alternatives (Among Landowners with Opinions)	53

TABLE 42: Relationship Between Involvement in Deer Hunting and Percent <u>Favoring</u> Management Alternatives (Among Landowners with Opinions)	54
TABLE 43: Extent of Landowners' Problems Due to Deer Damage - Percent of Respondents	55
TABLE 44: Extent of Landowners' Problems Due to Deer Hunters - Percent of Respondents	56
TABLE 45: Description of Abuses to Landowners' Rights and Property Due to Deer Hunters	57
TABLE 46: Relationship Between Farm Size and Landowners' Problems with Deer Hunters	57
TABLE 47: Relationship Between Farm Enterprises and Landowners' Problems with Deer Hunters	58
TABLE 48: Relationship Between Landowners' Status as Deer Hunters and Landowners' Problems with Deer Hunters	59
TABLE 49: Relationship Between Extent and Status of Hunting on Landowners' Land and Landowners' Problems with Deer Hunters	59
TABLE 50: Relationship Between Landowners' Problems with Deer Hunters and Percent <u>Favoring</u> Management Alternatives (Among Landowners with Opinions)	60
TABLE 51: Relationship Between Landowners with Deer Damage and Percent <u>Favoring</u> Management Alternatives (Among Landowners with Opinions)	61
TABLE 52: Landowners' Opinions Comparing Damage Due to Deer and Deer Hunters - Percent of Respondents.	62
TABLE 53: Landowners' Knowledge of Illegal Deer Kills	63
TABLE 54: Correlations Between Zonal Percent of Landowners Satisfied with Regulations and Zonal Distributions of Several Independent Variables	64
TABLE 55: Results of Forward Stepwise Multiple Regression to Explain Landowner Rate of Satisfaction with Regulations	65

LIST OF FIGURES

FIGURE 1: 1975 Deer Hunting Zone Map Outlining Differences
in Regulations Among the Zones 6

FIGURE 2: Areas Surveyed by Landowner Questionnaire. 10

FIGURE 3: Types of Firearms Permitted - 1975 Deer Hunting
Season 50

ABSTRACT

Mail surveys of deer hunters and rural "landowners" (owner-farmers and tenant-farmers) were conducted for each of Minnesota's nine 1975 deer hunting zones to assess deer hunter and rural landowner opinions and attitudes concerning the 1975 deer season and various deer management alternatives. Data were also collected concerning hunting patterns, landowner characteristics, landowners' problems with deer and deer hunters, and hunter and landowner knowledge of illegal deer kills. In general, hunters and landowners favor preserving the status quo with regard to deer management alternatives, with the exception of favoring a shortening of the long deer seasons in the 1975 zones 1, 2, and 3. Hunters favor a short, either-sex season, with some years closed to hunting to other methods of regulating the deer harvest. About one-fourth of the rural landowners suffer crop damage due to deer. A roughly equal proportion suffer property damage (mostly minor) caused by deer hunters. Substantial percentages of both deer hunters and landowners know of illegal deer kills and those who knew of these kills generally knew of at least several illegal kills.

SUMMARY

During the last several years, deer hunting in Minnesota has been within a hunter-choice type of framework wherein hunters were allowed to choose their hunting dates and zones. Regulations varied somewhat in each of Minnesota's nine 1975 deer hunting zones. To assess deer hunter and rural "landowner" (owner-farmer and tenant-farmer) opinions of the 1975 deer season and attitudes toward various deer management alternatives, the Department of Natural Resources requested that mail surveys be conducted in each of the hunting zones. These surveys were also designed to gather data concerning damage to landowners' property caused by deer and deer hunters, illegal deer kills, and various hunter and landowner characteristics which could help determine variations in opinions and attitudes.

A random sample of hunters was drawn, for each zone, from carbon copies of the first license of each book of ten licenses. A total of 4716 surveys were mailed and 2217 (47.0%) were returned. A random sample of landowners (appropriately spatially proportioned in each zone according to the number of farms) was taken from a listing of all farmers in Minnesota. A total of 4800 surveys were mailed and 1793 (37.4%) were returned. Analysis of non-response was completed with follow-up surveys and phone calls. It was concluded that respondents to the original surveys were representative of the populations of hunters and landowners with regard to the subject matter of the study.

The opinions of most hunters and landowners favored keeping the regulations that were in effect in their respective 1975 hunting zones. Their attitudes clearly rejected the idea of change and accepted preserving the status quo. One exception to this trend was that both hunters and landowners felt that the long deer seasons of (1975) zones 1, 2, and 3 should be shortened to about one week or less.

It was found that 28% of the hunters and 14% of the landowners knew of illegal deer kills during the 1975 deer season (excluding news accounts and rumors). Also, 22% of the hunters and 12% of the landowners knew of illegal deer kills in 1975 outside of the deer season. Of those who knew of at least one illegal deer kill, most knew of several.

Results of the hunter survey indicate that most Minnesota hunters:

- hunt in parties of six people or less
- hunt in the same area from year to year
- travel only a short distance to hunt
- hunt mainly on private land

Nearly two-thirds of those surveyed are satisfied with deer hunting regulations in their hunting zone. Hunters are concerned less with a long hunt than a good hunt. They strongly favor having a short, either-sex season, with some years closed for hunting to other methods of regulating the deer harvest, such as bucks-only hunting.

The most important factor in choosing a hunting zone is the likelihood of tagging a deer. Personal or family ownership of land for hunting and hunting close to home were also important factors in choosing a zone. Factors contributing to a quality hunt were ranked, from most to least important, as: seeing deer, abundant deer sign, being out in the woods, companionship of the hunting group, and getting a deer. In addition,

hunters indicated a strong desire to be able to choose their hunting zone and choose days to hunt, if at all possible. Overall, in regard to the hunting season format and regulations, hunters prefer stability to change, and are more likely to approve of present regulations than possible changes.

Two-thirds of the landowners surveyed are involved with deer hunting either as deer hunters themselves or by having family members who hunt deer. Most landowners allow hunting on their land and do not post their land.

Nearly 60% of the landowners favored keeping regulations in their zone the same. With the exception of landowners favoring shorter deer seasons in (1975) zones 1, 2, and 3, management alternatives involving change were unpopular. Landowners did not favor changing to or from shotguns-only hunting or bucks-only hunting. The suggestion of a drawing to limit the number of hunters was opposed. Some variations in landowner attitudes toward management alternatives were found to be a function of landowners' involvement with deer hunting, but there was little relationship between attitude and farm size and enterprises.

One-fourth to one-third of landowners suffer crop damage due to deer and nearly 30% have problems with deer hunters on their land. Most abuses are relatively minor. (Damage to fences and leaving gates open accounted for over half of all reported damage.) The extent of landowners' problems with deer hunters was directly related to farm size, livestock enterprises, and landowners' involvement with deer hunting.

Landowner satisfaction (or lack of satisfaction) with hunting regulations was mostly a function of landowners' problems with deer and deer hunters and knowledge of illegal deer kills.

CHAPTER I: INTRODUCTION

During the 1960's, the Minnesota deer hunting season was within a nine-day framework. Hunting in the forested areas of the state typically ran the full nine days, while seasons in the agricultural areas were closed or were one or two days in length.

This resulted in crowded hunting conditions during the opening weekend of the season and afforded little control over the harvest of deer. Because of these problems, the season was reduced to two days in 1970 and closed in 1971. Beginning in 1972, Minnesota adopted a one-month hunter-choice season.

The 1975 deer season was the fourth consecutive season wherein hunters were allowed to choose their dates and hunting zone. Figure 1 shows the various 1975 hunting zones and outlines the differences in regulations among them. The purpose of this hunter choice type of season has been to provide hunters with greater flexibility in their deer hunting opportunity. Under this new system, the deer population has not been overharvested, and everyone who wants to hunt has been permitted to do so. In 1975, over 300,000 Minnesota deer hunting licenses were sold.

The Department of Natural Resources (DNR) must regulate the size of the deer population, but it also has a responsibility to the people of Minnesota to do so in accordance with the citizens' needs and desires, where possible. As the hunter choice approach is relatively new to Minnesota deer hunting, DNR must assess citizens' feelings about this type of season and various management alternatives. DNR's deer management does not only involve deer and deer hunters. Rural "landowners" (mostly owner-farmers but also tenant farmers) may be interested in the deer season from several

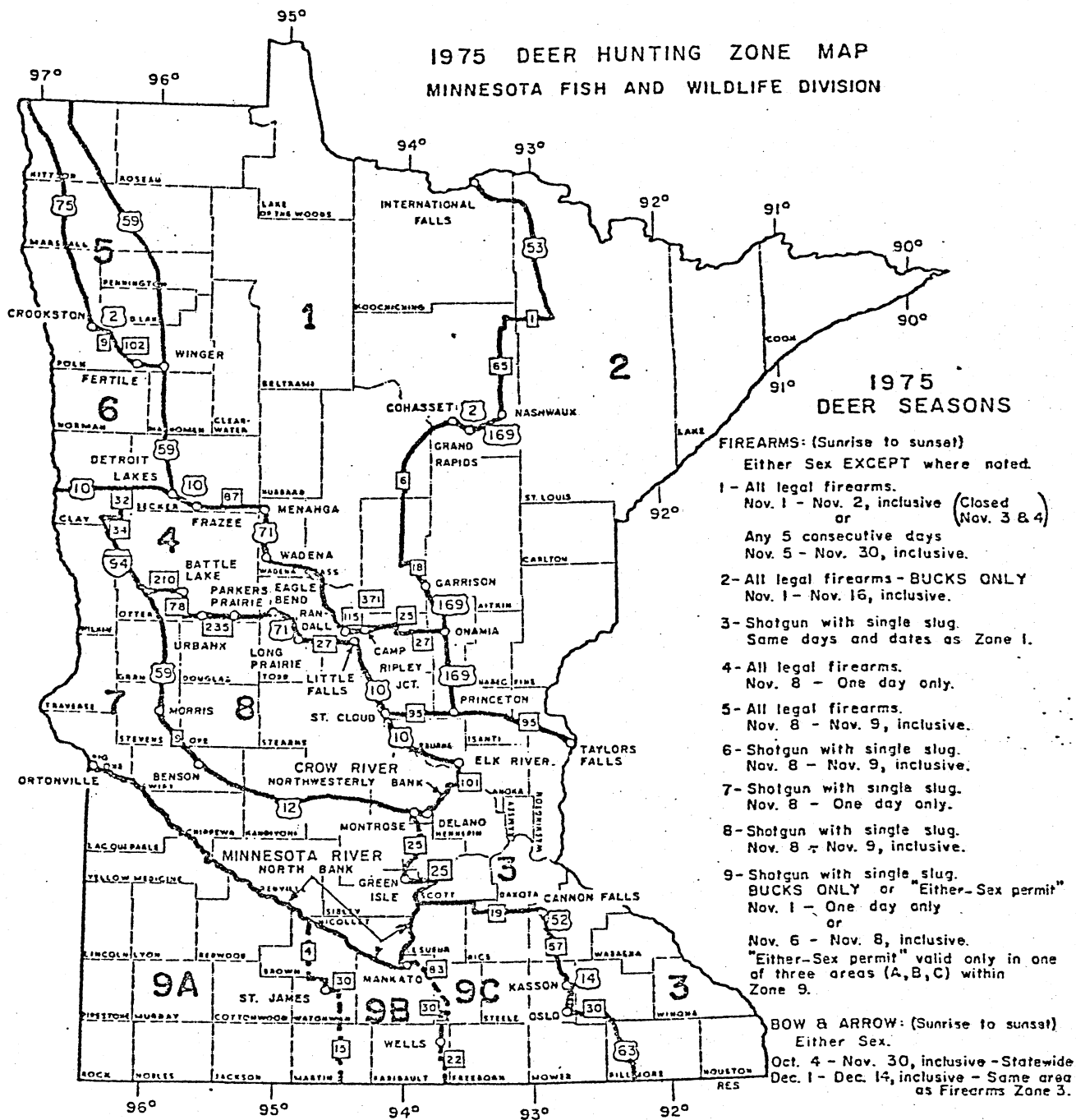


Figure 1. 1975 Deer Hunting Zone Map Outlining Differences in Regulations Among the Zones

standpoints: they, or their family and friends, may be deer hunters; they may be suffering property damage from deer hunters; they may be suffering crop damage due to high deer population; their farming operations may be affected when deer hunters are nearby during the season; they may enjoy seeing the deer as wildlife in the fields.

Because some deer hunting conditions and regulations vary from zone to zone, citizens' feelings about the 1975 deer season and possible management alternatives may also vary from zone to zone. In the interest of good deer management, the DNR requested that mail surveys be conducted of hunters and landowners in each of the nine 1975 zones to determine:

- 1) various characteristics of people's deer hunting patterns,
- 2) the attitudes of deer hunters and rural landowners toward various aspects of the 1975 deer hunting season,
- 3) the opinions of deer hunters and rural landowners of various deer management alternatives,
- 4) the extent and location of damage to rural landowners' property caused by deer hunters,
- 5) the extent of damage to rural landowners' crops caused by deer, and
- 6) some measure of the extent of illegal in-season and out-of-season deer kills.

is then checked on the license. The carbons were sorted by hunting zone, and 600 were selected at random from each zone. (It was estimated that one-third of the questionnaires would be returned, and statistical consultants felt that 200 returned questionnaires per zone was a sufficiently large number from which to draw zonal conclusions.) In zones 5 and 6, fewer than 600 carbons were available, so questionnaires were sent to all hunters listed on the license carbons. Questionnaires were sent to hunters based on the zone in which they were licensed to hunt, rather than the zone in which they resided.

The number of hunters licensed in each zone varied considerably (Table 1). Therefore, the 600 questionnaires sent to most zones represents a different sampling rate of hunters for each zone. State totals from all hunter questionnaires may vary from the true state distribution of responses because of unequal zonal sampling rates.

TABLE 1: Hunter and Landowner Sampling Rates

1975 Hunting Zone	HUNTERS			LANDOWNERS		
	Question- naires Sent	Number of Hunters	Sampling Rate (Percent)	Question- naires Sent	Number of Farms	Sampling Rate (Percent)
1	604	124,924	0.48	300	8,488	3.53
2	609	68,250	0.89	300	3,323	9.03
3	605	29,876	2.03	600	17,368	3.45
4	602	12,450	4.84	600	6,815	8.80
5	206	2,910	7.08	600	2,216	27.08
6	280	4,440	6.31	600	3,610	16.62
7	601	11,610	5.18	600	15,350	3.91
8	610	25,590	2.38	600	13,423	4.47
9	599	20,040	2.99	600	34,320	1.75
TOTAL	4,716	300,090	1.57	4,800	104,913	4.58

The landowner sample was obtained from a listing of all farmers in Minnesota. (The listing included both owner-farmers and tenant-farmers; therefore, the term "landowner" refers to farmers, but does not exclude renters.) The listing provided information as to the farmer's county and township of residence, so that it was possible to ascertain in which zone he or she resided. A total of 600 questionnaires were sent to each zone, with intra-zone distributions weighted in proportion to the relative importance (by numbers of farms) of farms in each county. For example, if half of the farms in zone 6 were located in Norman county, half of the questionnaires sent to zone 6 farmers were sent to farmers in Norman County. Only 300 questionnaires were sent to zones 1 and 2, (Figure 2) upon DNR's request, as only the southwestern portions of these zones were sampled. (The rest of these zones are essentially unfarmed.)

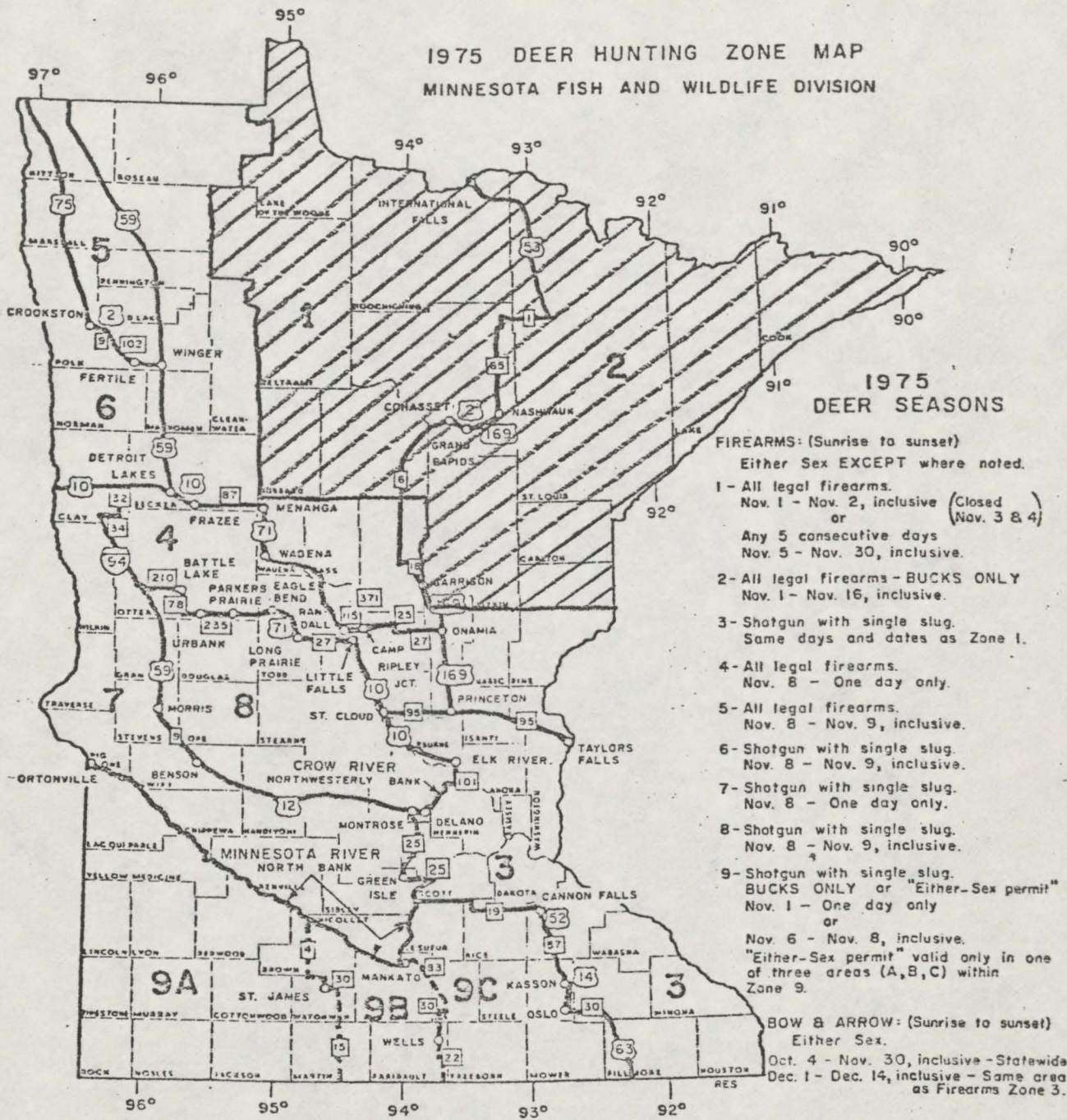
The distribution of landowner questionnaires sent is in the appropriate spatial proportions within any hunting zone, but it is not so on a statewide basis (Table 1). State totals do not necessarily reflect the true state distributions, as the totals are weighted in favor of those zones with smaller farm populations.

CONTACTING THE SAMPLE

Survey information was acquired by the original mailing, a telephone follow-up to nonresidents and a mailing to nonrespondents. The first mailing provided all the data for this report's analyses.

The cover letters, state maps (Figure 1), questionnaires, and postage-paid return envelopes were mailed December 9, 1975, about one month after the close of the deer season in most hunting zones (about one week after the close of the season in zones 1 and 3). Follow-up phone calls were made

1975 DEER HUNTING ZONE MAP
MINNESOTA FISH AND WILDLIFE DIVISION



1975
DEER SEASONS

- FIREARMS: (Sunrise to sunset)
Either Sex EXCEPT where noted.
- 1 - All legal firearms.
Nov. 1 - Nov. 2, inclusive (Closed Nov. 3 & 4)
or
Any 5 consecutive days
Nov. 5 - Nov. 30, inclusive.
 - 2 - All legal firearms - BUCKS ONLY
Nov. 1 - Nov. 16, inclusive.
 - 3 - Shotgun with single slug.
Same days and dates as Zone 1.
 - 4 - All legal firearms.
Nov. 8 - One day only.
 - 5 - All legal firearms.
Nov. 8 - Nov. 9, inclusive.
 - 6 - Shotgun with single slug.
Nov. 8 - Nov. 9, inclusive.
 - 7 - Shotgun with single slug.
Nov. 8 - One day only.
 - 8 - Shotgun with single slug.
Nov. 8 - Nov. 9, inclusive.
 - 9 - Shotgun with single slug.
BUCKS ONLY or "Either-Sex permit"
Nov. 1 - One day only
or
Nov. 6 - Nov. 8, inclusive.
"Either-Sex permit" valid only in one
of three areas (A,B,C) within
Zone 9.
- BOW & ARROW: (Sunrise to sunset)
Either Sex.
Oct. 4 - Nov. 30, inclusive - Statewide
Dec. 1 - Dec. 14, inclusive - Same area
as Firearms Zone 3.

Figure 2. Areas Surveyed by Landowner
Questionnaires

- Questionnaires Sent
- Questionnaires not Sent

to a sample of the nonrespondents. A few of the significant questions were asked of these people. Results seemed to indicate no major differences between respondents and nonrespondents. However, after consulting statisticians, it was decided to make a second mailing to a group of nonrespondents, in which all questions were asked, to validate the conclusion that nonrespondents had the same attitudes as respondents on all issues.

All responses were coded and reduced to computer cards. Computer analysis of responses was accomplished largely by means of the Statistical Package for the Social Sciences (SPSS) program.

HUNTER SURVEY RESPONSE

Rate of Return. The rate of return for hunter questionnaires from the first mailing was 47% (Table 2). A total of 4,716 questionnaires were mailed out on December 9, 1975. Approximately 600 were sent to each zone except zone 5 (206 questionnaires) and zone 6 (280 questionnaires), which zones had fewer total hunters than other zones. 2,217 questionnaires were returned.

The follow-up mailing (April 13, 1976) consisted of 495 hunter questionnaires (55 per zone) mailed to hunters who had failed to return their original questionnaire. Another 181 questionnaires came in from this group, a 37% return. It is reasonable that this return rate is slightly lower than the original group since the time of contact was more removed from the time of hunting. In addition, it may show a slightly lower interest level in the non-response group.

There was no significant difference in response rate among zones, in either the first or second mailing. Response rate by zone is shown in Tables 2 and 3.

TABLE 2: Hunter Response Rate - First Mailing

1973 Hunting Zone	Sent Out	Returned	Percent Returned	Percent of Total
1	604	304	50	14
2	609	279	46	13
3	605	271	45	12
4	602	294	49	13
5	206	80	39	4
6	280	131	47	6
7	601	269	45	12
8	610	283	46	13
9	599	302	50	14
TOTAL	4,716	2,217*	47	

* Includes 4 questionnaires returned with zone unidentified

TABLE 3: Hunter Response Rate - Second Mailing

1975 Hunting Zone	Sent Out	Returned	Percent Returned	Percent of Total
1	55	20	36	11
2	55	19	35	10
3	55	20	36	11
4	55	16	29	9
5	55	19	35	10
6	55	21	38	12
7	55	21	38	12
8	55	24	44	13
9	55	21	38	12
TOTAL	495	181	37	

Differences Between Mailings. The contacted nonresponse group was compared with the original group to determine what differences existed on each question (for the state and for individual zones). This statewide comparison of the original sample with the contacted nonresponse group showed, in all but a few cases, no statistical difference between the two groups.

These few differences between the original sample and the contacted nonresponse group can be easily explained.

Zone hunted in 1975 -- The differences here resulted from the disproportionate sampling of zones 5 and 6. In the original mailing fewer questionnaires were sent to zones 5 and 6 than to other zones. In the second mailing, an equal number of questionnaires was sent to each zone. Therefore, the proportion of returned questionnaires from zones 5 and 6 is larger for the second mailing than for the first.

County of residence -- Neither sample was drawn with a specific weighting by county. Hence, county of residence was not controlled for in any way, and the proportion returned could be expected to vary between the two samples.

Satisfaction with hunting regulations -- The two samples showed the same percentages of hunters who were very satisfied and equal proportions who were somewhat satisfied. The difference was in the balance of the hunters - those in the "not satisfied" and "undecided" categories. The nonresponse group had a larger proportion of hunters who were "undecided" and a smaller percentage who were "not satisfied" with hunting regulations than the original group. This seems entirely reasonable--that the group that did not respond to the original hunter questionnaire would have less definite feelings toward the hunting regulations, showing somewhat less interest.

Importance of companionship of the hunting group for quality in a hunt -- In the nonresponse group, fewer hunters said companionship of the group was "very important" than hunters in the original group, and more said "somewhat important". The same

percentage of hunters in each group rated companionship of the group as "not important".

Comments -- 58.7% of the original sample of hunters wrote comments on the questionnaire they returned, while only 41.5% on the second group made comments. This, too, shows a lower degree of interest in the nonresponse group. Just as fewer hunters in the second group were "not satisfied", and more "undecided", fewer of these hunters had strong enough feelings about any aspect of the hunting season to comment about it.

Nonresponse Biases. Comparison between survey results from the original hunter sample and the results of the follow-up mailing indicate that no nonresponse bias was present. The return rate in the second mailing nearly matched that of the first, and for nearly every question, results from the two groups showed no significant difference in responses. This indicates that the original response group is reasonably representative of the hunter population, and all results from the hunter survey are based on analysis of the original response group questionnaires, and do not include those of the follow-up group.

LANDOWNER SURVEY RESPONSE

Questionnaire Return Rates. By May 1976, the return of landowner questionnaires had virtually ceased. In all, 1793 landowner questionnaires had been returned, yielding a return rate of 37.4%. Chi-square tests reveal that the return rate was not significantly different among the zones (Table 4) at the .05 level. This is important, as many zonal differences were noted in the responses. If return rates were substantially a function of the zonal percentage of landowners suffering damage due to hunters or the intensity of interest in deer hunting, the return rates should vary considerably among the zones.

TABLE 4: Landowner Questionnaire Return Rate

1975 Hunting Zone	Number Sent	Number Returned	Percent Returned
1	300	121	40.3
2	300	99	33.0
3	600	225	37.5
4	600	214	35.7
5	600	250	41.7
6	600	255	42.5
7	600	205	34.2
8	600	207	34.5
9	600	217	36.2
TOTAL	4,800	1,793	37.4

Nonresponse Bias. The first attempt at establishing the extent of any bias due to nonresponse came in late January and early February 1976, as phone calls were made, at random, to 20 nonrespondents from each zone. Landowners were only asked questions concerning problems they may have been having with deer hunters on their land (questions 2,3, and 8). It was felt that a landowner with hunter problems may have been more likely to return the questionnaire than one without problems, thus introducing a bias in the data toward overstating the extent of problems.¹ Attitude questions concerning the deer hunting season alternatives were not attempted by phone simply because some farmers are quite removed from deer hunting and deer hunters. Nonrespondents had undoubtedly discarded the original map of zones and regulations and the questionnaire with which they were to express the direction and intensity of their attitudes toward the alternatives. Therefore, it would have been difficult, at best, to try to describe a map, regulations, and scaled attitude questions to someone who may not have any relationship with deer hunting.

1. See references, 1 thru 6.

Any responses could not have been objectively compared with those of the original respondents. Therefore, phone follow-up to landowners concerned only factual information about problems with deer hunters.

For this purpose, a landowner having a problem with deer hunters was defined as anyone having arguments with or damage due to deer hunters (positive responses to landowner questions 2,3, or 8). In each zone, the phone follow-up indicated a problem rate the same as or lower than that obtained in the mailed questionnaires. However, only in zone 5 was this difference significantly lower at the .05 level. (One should realize that 20 observations per zone is a rather small number on which to base conclusions. A larger sample could have been obtained, but this would have been quite time-consuming.)

The correlation (R) between the zonal return rate and the zonal problem rate was +0.13 ($R^2 = 0.017$), indicating that only 1.7% of the variation in return rate is associated with variations in the problem rate. Therefore, one may conclude that landowners with deer hunter problems were not more likely to respond than others.

Many researchers² have noted that late respondents to mailed questionnaires indicate the direction (but not the magnitude) of nonresponse bias. The return date had been coded for all landowner questionnaires. The problem rate for each return date was computed. The correlation between the problem rate and the date of return (+0.43) indicates that later respondents had a slightly higher problem rate than earlier respondents. However, only 18.6% of the variation in problem rate is associated with variations in return date.

2. See references 7 thru 12.

In April 1976, DNR requested more detailed analysis of possible bias due to nonresponse. A follow-up questionnaire, identical to the original, was sent to 55 randomly selected landowners from each zone (495 total) who had not responded to the original questionnaire and who had not been phoned. Of these follow-up questionnaires, 217 were returned, yielding a return rate of 43.8% (significantly higher, at the .05 level, than the original questionnaire return rate). The difference, among zones, in return rate of the follow-up survey (Table 5) was not significantly different at the .05 level.

TABLE 5: Landowner Follow-up Questionnaire Return Rate

1975 Hunting Zone	Number Sent	Number Returned	Percent Returned
1	55	27	49.1
2	55	23	41.8
3	55	20	36.4
4	55	36	65.5
5	55	19	34.5
6	55	20	36.4
7	55	24	43.6
8	55	19	34.5
9	55	29	52.7
TOTAL	495	217	43.8

The responses to each question from the original mailed questionnaire were compared to those from the follow-up mailed questionnaire. In general, it was concluded that the essential difference between those returning the follow-up questionnaire (referred to as the "nonrespondent" group) and the original respondents, which caused significant differences in some questions, was that the nonrespondents were more removed from deer hunting

and deer hunters. For example, although there was no difference in the overall problem rate (28.8% of the respondents and 27.7% of the nonrespondents indicated problems), there were some differences in the type or extent of problems experienced. The nonrespondents had slightly fewer arguments and suffered a little less damage than the respondents. Of those checking any specific problem (question 8), 50% of the respondents and only 30% of the nonrespondents checked more than one problem.

Fifty percent of the original respondents were deer hunters themselves, but only 35% of the follow-up nonrespondents were deer hunters.

Item nonresponse to the attitude questions of deer hunting management alternatives (question 11) was also an important indicator of the relative distance between nonrespondents and deer hunting problems. Some people declined to rate some of the alternatives altogether, some checked "no opinion" for one or more of the alternatives, and some declined to express an opinion by checking the "neutral" box. An examination was made of those who answered the questions and had an opinion either favoring or opposing alternatives. Among the 1793 respondents, 9074 opinions were cast out of a possible 14344 (1793×8 alternatives = 14344 possible opinions). Therefore, 5270 opinions were not given, and the item nonresponse rate for the original group was 36.7%. The comparable figure for the nonresponse group was 56.1%. It is assumed that the basic reason that the follow-up group expressed opinions less is because they are less familiar with deer hunting, or deer hunting regulations, as a group. It should be emphasized that a comparison of the opinions cast by each group (among those persons who expressed opinions) showed no significant differences for any of the management alternatives. Other attitude

questions such as desired length of season and time of season showed no significant differences between the two groups.

The nonresponse group, however, experienced somewhat less damage due to deer than had the original group. Also, the nonresponse group admitted less knowledge of illegal deer kills than had the original group.

An opinion of a statistical consultant to this study was that zone by zone comparisons between the original respondents and the follow-up nonrespondents would be risky due to the small samples of follow-up questionnaires available for each zone. This is especially true when considering the responses which cannot be used due to the high rate of item nonresponse to the management alternatives attitude questions.

What can be reasonably concluded is that:

- 1) The true extent of problems experienced by landowners due to deer hunters and deer and the extent of illegal deer kills are no worse than that indicated by the original respondents, and
- 2) the true attitudes of landowners toward deer hunting management alternatives (among landowners who have opinions) are very closely represented by the original respondents.

The purpose of the follow-up mailing was to ascertain whether or not the original respondents were representative of Minnesota rural landowners with respect to the subject matter. The results show a stochastic process in questionnaire returns, and it is felt that the original respondents are a reasonably typical cross-section of Minnesota farmers. All results to be discussed are based on analysis of the original respondents' questionnaires. None of the analyses has been "weighted" by the results from the follow-up questionnaires.

CHAPTER III: RESULTS OF THE HUNTER STUDY

CHARACTERISTICS OF THE HUNTER GROUP

One purpose of this study was to provide a composite description of the Minnesota deer hunter with regard to his hunting habits and characteristics. The results of this portion of the study show individual hunting success, average hunting party size, party success, number of deer seen by hunters, amount of deer sign seen by hunters, changes in hunting area, distance traveled to hunt, and type of land on which hunting takes place.

One prime measure of hunting success is whether or not the hunter tags a deer. But a hunter might also measure hunting success by the number of deer seen, or the amount of deer sign evident in the hunting area. Of the hunters responding to this survey, half (50.1%) did not tag a deer in either 1974 or 1975. Statewide, 13.3% of the hunters reported tagging a deer in both of the above years, 16.0% tagged a deer in 1974 only, and 19.6% tagged a deer in 1975 only (see Table 6). By zone, those who reported not getting a deer in either year ranged from a low of 30.4% in zone 5 to a high of 62.6% in zone 2 (22.6% of the hunters in zone 5 reported tagging a deer both years as compared to 8.3% in zone 2).

TABLE 6: Hunters Tagging a Deer (Deer Kill) in 1974 and 1975 -- Percent of Respondents

	Zone Hunted in 1975									State Total
	1	2	3	4	5	6	7	8	9	
Total hunters tagging in 1975	28.3	21.6	28.6	38.9	40.5	47.4	30.6	40.3	33.2	32.9
Both 74 & 75	14.8	8.3	14.5	16.0	22.8	11.5	13.1	15.2	9.6	13.3
1975 only	13.5	13.3	14.1	22.9	17.7	35.9	17.5	25.1	23.6	19.6
Total hunters tagging in 1974	27.0	22.7	30.5	34.8	50.6	24.5	34.0	23.3	29.9	29.3
Both 74 & 75	14.8	8.3	14.5	16.0	22.8	11.5	13.1	15.2	9.6	13.3
1974 only	12.2	14.4	16.0	18.8	27.8	13.0	20.9	8.1	20.3	16.0
Total tagging neither year*	58.6	62.6	53.9	41.6	30.4	39.7	48.1	50.5	46.2	50.1

* Totals may not add to 100% since not everyone hunted both years.

The average hunting party size did not change from 1974 to 1975. The mean party size was 5 for both years. Approximately three-fourths (73.7% in 1975) of those surveyed hunted in parties of 6 or less, and half (51.3%) hunted in parties of 4 or less people. Zone 5 showed a higher percentage of hunters in parties of 7-10 people than the other zones, and zones 2 and 3 had a larger percentage of single hunters in the two years (27.1% and 38.4% respectively as compared to 14.1% for the state).

Party success (number of deer tagged by the party) declined slightly from 1974 to 1975. Table 7 shows the average number of deer tagged per hunter in each party in 1975 by zone, and the number of deer seen per hunter by zone.

TABLE 7: Number of Deer Tagged and Number of Deer Seen per Hunter (1975)

	1975 Hunting Zone								
	1	2	3	4	5	6	7	8	9
Number of deer tagged per hunter in party	.28	.21	.35	.36	.41	.47	.34	.40	.32
Number of deer seen per hunter	2.7	4.8	4.6	3.5	5.6	11.1	5.2	5.8	10.9

The reported number of deer seen by hunters rose from 1974 to 1975. The mean number of deer seen per hunter in 1974 was 4.7 and in 1975 was 5.7. In 1975, zones 1, 2, and 4 had the highest percentage of hunters who reported seeing no deer at all. Hunters rated "seeing deer" as the most important criterion for a quality hunt.

Half of the state's hunters (49.8%) reported the amount of deer sign in their hunting area as "common". Those state hunters reporting "abundant" deer sign totalled 31.5% (see Table 8). Zones 2 and 5 were low in this category (20.8 and 22.8 respectively). Only 18.7% of hunters said deer sign was scarce in their hunting area. In zone 2, 29.2% of hunters and in zone 5, 27.8% of hunters considered deer sign to be scarce, which is significantly higher than other zones.

TABLE 8: Amount of Deer Sign Seen--Percent of Hunters by Zone

Amount of Deer Sign	1975 Hunting Zone									State Total
	1	2	3	4	5	6	7	8	9	
Abundant	22.6	20.8	29.6	33.6	22.8	41.2	34.7	39.5	37.5	31.5
Common	54.2	50.0	49.3	51.0	49.4	48.9	47.4	48.8	48.2	49.8
Scarce	23.3	29.2	21.1	15.4	27.8	9.9	17.9	11.7	14.3	18.7

The majority of hunters surveyed usually hunt in the same area (See Table 9). A total of 86.9% of state hunters said their hunting area usually (53.8%) or always (33.1%) remains fixed. The zone in which hunters showed the strongest tendency toward hunting in the same spot from year to year was zone 5, in which 92.6% of the hunters indicated their hunting area usually or always remained the same.

TABLE 9: Changes in Deer Hunting Area--Percent of Hunters by Zone

	1975 Hunting Zone									State Total
	1	2	3	4	5	6	7	8	9	
Changes	13.5	10.5	17.2	9.2	7.5	15.5	12.4	12.6	16.7	13.1
Usually Same	52.1	50.2	55.1	50.3	51.3	65.9	50.6	56.7	56.7	53.8
Always Same	34.3	39.3	27.7	40.4	41.3	18.6	37.1	30.7	26.7	33.1

Similarly, zone 5 had the highest percentage of hunters who own land on which they hunt--36.2% as compared to 23.6% for the state as a whole (Table 10). More than four-fifths of the hunters (82.0%) said they hunt on land owned by themselves, their family, a friend, an acquaintance, or a combination of these people (Table 11).

TABLE 10: Percent of Hunters Who Own Land for Hunting

	1975 Hunting Zone									State Total
	1	2	3	4	5	6	7	8	9	
Percent who own land	18.7	22.7	13.7	30.8	36.2	25.4	26.4	24.5	23.7	23.6

TABLE 11: Private Land Ownership--Percent by Zone

Land Owned by:	1975 Hunting Zone									State Total
	1	2	3	4	5	6	7	8	9	
Self	10.0	10.1	3.1	10.2	6.4	6.3	11.4	9.4	4.7	8.1
Family	16.0	14.5	8.2	22.9	20.5	11.8	16.1	24.2	11.6	16.2
A Friend	21.2	22.8	33.7	28.2	17.9	29.1	29.4	27.8	33.9	28.1
An Acquaintance	13.0	11.0	5.5	8.8	7.7	15.0	13.7	11.6	9.3	10.5
More than one of the Above	10.4	15.4	23.5	21.8	33.3	22.0	18.8	14.8	21.3	19.1
None of Above	29.4	26.3	25.9	8.1	14.1	15.7	10.6	12.3	19.3	18.0

In many cases, the hunters are hunting on land near their homes; 65.0% of hunters in zone 5 indicated that they traveled less than 25 miles to their hunting spot. Throughout the state 51.5% of hunters said they traveled less than 25 miles to hunt, still a surprisingly large percentage of hunters. Of course, zones 1 and 2, the northern most and least populated zones showed people traveling the farthest from home for hunting (60.4% of zone 1 hunters traveled over 100 miles to hunt). Zone percentages are given in Table 12.

TABLE 12: Miles Traveled to Hunting Spot

Miles Traveled	1975 Hunting Zones									State Total
	1	2	3	4	5	6	7	8	9	
Under 25	23.2	32.7	55.9	53.0	65.0	58.5	68.3	57.1	64.2	51.5
25-49	5.5	8.8	18.0	8.5	7.5	14.6	12.5	9.2	11.8	10.6
50-99	7.2	10.3	10.7	8.2	8.8	8.5	4.9	8.1	4.4	7.7
100-199	26.3	30.5	9.6	19.6	2.5	3.8	9.8	19.8	13.2	17.0
200-299	24.9	11.0	1.1	6.8	6.3	6.2	1.9	3.7	2.0	7.4
Over 299	9.2	3.3	1.1	1.4	8.8	3.1	.4	0	1.0	2.7
Varies	3.8	3.3	3.4	2.5	1.2	5.4	2.3	2.2	3.4	3.1

The majority of hunters (59.6%) hunt mostly or always on private land (Table 13). Only 17.0% of hunters statewide said they hunted mostly or always on public land. There is large variation by zone, depending of course, on the amount of public land available for hunting in individual zones. In zones 1 and 2 where most of the public land for hunting is located, a larger majority of hunters indicated that they usually or always hunted on public land--48.2% in zone 1 and 37.3% in zone 2.

TABLE 13: Hunters Who Hunt on Public or Private Land -- Percent of Respondents

Always Public	Mostly Public	Equal	Mostly Private	Always Private	Unknown Owner	More Than One
5.9	11.1	19.6	32.1	27.4	2.2	1.6

Similarly, most of the wooded hunting land occurs in the northern part of the state. The south and west are covered with farms and fields. Not surprisingly then, the largest proportions of hunters indicating that they hunt mostly on woodland are in zones 1 and 2--70.4% and 67.0% compared to 29.4% for the state. The majority of hunters (62.2%) tend to hunt on a combination of farm and woodland.

HUNTER ATTITUDES AND SATISFACTION

The second major purpose of the hunter survey was to find out how satisfied Minnesota deer hunters are with present hunting zones and regulations, and hunter opinions on various management alternatives. In addition to level of satisfaction, hunters were asked to indicate reasons for their satisfaction or dissatisfaction. They were requested to choose between various methods of regulating the deer harvest, and to give their opinion on management alternatives for the deer season, and to provide information on what is necessary for a quality hunt.

Satisfaction with Deer Season Regulations. The hunter questionnaire contained two questions designed to measure hunter satisfaction with the deer hunting regulations. One question asked specifically how satisfied the hunter was with the regulations, and the other question inquired whether or not the hunter approved of keeping the regulations in his hunting zone the same in following years.

There were nearly twice as many hunters who indicated that they were satisfied with the regulations as there were hunters who were dissatisfied. This is shown in Table 14. A total of 61.6% of the state hunters said they were either very or somewhat satisfied with the present deer hunting regulations (24.1% and 37.5% respectively) while only 32.8% of the hunters answered that they were not satisfied. A small percentage (5.6%) of the hunters were undecided. Zones 2 and 4 showed the lowest satisfaction (53.2% and 53.6%) while zones 6 and 8 ranked high in satisfaction (70.8% and 75.0%).

TABLE 14: Satisfaction With Hunting Regulations--Percent

	1975 Hunting Zones									State Total
	1	2	3	4	5	6	7	8	9	
Very Satisfied	24.7	21.2	31.5	17.1	20.0	26.2	24.0	36.4	15.0	24.1
Somewhat Satisfied	37.5	32.0	30.7	36.5	36.2	44.6	39.0	38.6	44.7	37.5
Not Satisfied	31.6	40.6	31.9	42.7	40.0	26.2	29.6	19.6	34.0	32.8
Undecided	6.3	6.1	5.9	3.8	3.7	3.1	7.5	5.4	6.3	5.6

The zone preferences for keeping regulations the same broke down in much the same way. Zones 2 and 4 showed greater opposition to having regulations remain as they were while zones 6 and 8 approved strongly of keeping the same regulations. Overall 58.6% of the hunters approved of keeping the regulation the same as in 1975, while 30.7% disapproved and 10.8% were neutral (see Table 15).

TABLE 15: Hunter Opinion on Keeping Regulations the Same in 1976 -- Percent

Opinion on Regulations	1975 Hunting Zones									State Total
	1	2	3	4	5	6	7	8	9	
Strongly Approve	41.0	23.0	39.9	26.5	34.7	47.5	39.3	48.8	20.5	34.8
Somewhat Approve	20.5	22.3	22.2	22.0	25.0	25.0	21.9	26.4	29.9	23.8
Neutral	11.0	11.7	12.1	11.7	11.1	6.7	9.3	9.7	11.9	10.8
Somewhat Oppose	12.1	17.0	12.9	21.2	15.3	12.5	21.9	6.6	16.9	15.3
Strongly Oppose	15.4	26.0	12.9	18.6	13.9	8.3	7.7	8.5	20.9	15.4

Hunters were asked to indicate their reasons for being either satisfied or dissatisfied with the hunting regulations. The factor that the largest percentage of hunters indicated as a reason for their being satisfied was hunter choice on dates to hunt. Over half the hunters (51.9%) checked this as a reason for their satisfaction. Following this, in order, the answers most often indicated as reasons for satisfaction with the hunting regulations were:

- 2) Gives everyone who wants to hunt a chance to do so (34.1%).
- 3) Different zones give attention to specific problems of various areas (30.8%).
- 4) Can choose time when fewer hunters are in the field (30.0%).
- 5) Allows hunting in agricultural zones each year (22.9%).
- 6) 14% of the hunters included a comment under "other".

The main reason for not being satisfied turned out to be desire for a longer season (35.2%). This varied by zone; the majority of people who want a longer season hunt in the zones where the season lasts only 1 or 2

days. Interestingly, the second reason most often checked for dissatisfaction was want of a shorter season (21.4%). This was especially true in zone 3, where nearly half the respondents (46.1%) wanted a shorter season. The remaining options seem to be of little importance, in keeping hunters from being satisfied, but ranked as follows:

- 3) Want more hunters in the field (14.4%).
- 4) Want fewer hunters in the field (10.0%).
- 5) Want either sex drawing (7.6%).
- 6) Want season closed (5.8%).
- 7) Want bucks only (3.4%).

Over one-third (38.4%) made comments in the "other" category concerning reasons for being dissatisfied with the present deer hunting regulations.

Desired Means of Regulating Deer Harvest. Over half (52.7%) of the responding hunters preferred having a short season of hunting for either sex animal with some years closed as a means of regulating the deer harvest. The other two alternatives were bucks only hunting with a drawing for antlerless deer or limiting the number of hunters by a drawing. The hunter drawing was the least popular alternative; only 8.7% of the hunters preferred it as a means of limiting the deer harvest. Bucks only hunting with a drawing to allow some hunters to take antlerless deer was preferred by 32.7% of the state hunters, but was more popular in zone 9 (45.3%) where that policy was in effect in 1975, and in zone 2 (56.9%) where the current regulations included a strict bucks only rule, with no drawing (see Table 16). It is interesting here that it seems a larger percentage of hunters would prefer a short, either sex season with all hunters allowed to hunt and some years closed, to either of the other alternatives. A

good hunt some years appears to be more important than a poorer one every year, as is also indicated by the low ranking of keeping hunting open in agricultural zones each year under "reasons for satisfaction" above.

TABLE 16: Hunter Choice of Methods of Regulating the Deer Harvest -- Percent

Desired Methods of Regulating Deer Harvest	1975 Hunting Zone									State Total
	1	2	3	4	5	6	7	8	9	
Short season with some years closed	40.9	31.5	46.5	61.9	72.2	68.1	63.4	67.4	44.6	52.7
Hunters Drawing	11.2	7.7	9.9	10.3	6.9	6.9	9.3	6.5	7.4	8.7
Deer Drawing	38.2	56.9	37.0	19.4	12.5	19.0	22.0	20.7	45.3	32.5
None	9.3	2.8	4.5	6.2	6.9	4.3	4.1	4.6	.7	4.6
More than one choice	.4	1.2	2.1	2.2	1.4	1.7	1.2	.8	2.1	1.4

Opinion on Management Alternatives. Hunters were asked whether they approved or disapproved of a list of ten possible alternatives affecting the deer season format. They ranked as follows, from most to least popular: hunters given choice of zone (84.5% approve), choice of hunting days (69.3%), choice of hunting time which allows more days to hunt (67.3%), choice of hunting in more than one zone (57.8%), use of shotgun with slug (51.1%), closed season in some areas (47.8%), season open later (40.9%), bucks only hunting with drawing for licenses to take antlerless deer (34.5%), strict bucks only hunting (22.9%), and hunter drawing for licenses (9.4%), [see Table 17]. There was considerable variation among zones, in that hunters from each zone approved of regulations presently in effect in their zone.

That is, in cases where a regulation has been in effect, such as bucks only hunting with a drawing for licenses to take antlerless deer in zone 9, or choice of hunting time which allows more days to hunt in Zones 1, 2, and 3, hunters in those zones already having such a regulation approved more often of that regulation than hunters in zones which did not have it. Hunters seem more eager to stay with present regulations than to change to anything else. For instance, hunters who hunt in zones with short seasons want only a few days to hunt while those who hunt in zones with long seasons will only be happy if they can have many days to hunt (but not even all of these people want the season to be spread over as many days as it was in 1975). This is also exemplified by the option of hunting with shotguns using a single slug rather than rifles. The zones where shotguns were used exclusively (3, 6, 7, 8, 9) highly approve of this practice, while the zones where rifles are used oppose it.

TABLE 17: Hunter Opinion of Deer Season Management Alternatives, State Totals --
Percent of Respondents

Deer Season Management Alternatives	OPINIONS				
	Strongly Approve	Somewhat Approve	Neutral	Somewhat Oppose	Strongly Oppose
Choice of hunting days	48.8	20.5	16.3	6.5	7.7
Can choose more days	41.5	20.8	23.4	6.2	8.0
Hunter drawing	3.6	5.8	10.8	20.3	59.5
Antlerless deer drawing	14.9	19.6	13.8	16.3	35.4
Season open later	22.6	18.3	30.6	12.4	16.0
Choice of zone	67.3	17.2	10.2	2.2	3.3
Hunt in more than one zone	33.9	18.9	18.4	10.4	18.4
Shotgun with slug	34.9	16.2	26.7	9.2	13.0
Bucks only	6.5	16.0	21.4	23.1	33.0
Close season some areas	25.2	22.6	32.3	9.9	10.1

Again, bucks only hunting and a hunter drawing for licenses turned out to be the two least favorable alternatives from the hunter viewpoint. This is consistent with the response to possible means of regulating the deer harvest. Just as the hunters chose a short season with some years closed for hunting, responses to this question showed that twice as many hunters preferred closing the season in some areas to bucks only hunting (47.8% to 22.5%) and five times as many hunters would rather have the season closed in some areas than have a hunter drawing (47.8% to 9.4%).

Desired Length of Season. Most of the hunters surveyed seemed to be content with a fairly short deer hunting season. For instance 59.4% of the respondents said the most desirable length of a deer hunt is 3 days or less; 82% said that 5 or fewer days would be best. Here again, the answers given seem to be a function of the present regulations in respective zones. People who hunt in one day zones were more apt to want a one or two day season, while hunters from zones which currently have more lengthy seasons wanted more days to hunt. But in nearly all cases, a fairly short season (5 days or less) was desirable. This is supported by other responses to the questionnaire. A longer season was one of the least important reasons for choosing the zone in which to hunt. Only 15.2% of the hunters ranked longer season as very important. And in ranking variables as to importance for quality in a hunt, "many days to hunt" was less important than any of the other options, with 21.7% of respondents saying it was very important.

Quality in a Hunt. Hunters were asked to indicate the importance of seven factors in making a quality hunt. All of the factors turned out to be of considerable importance (Table 18). Nearly all the hunters

surveyed (99.3%) said seeing deer was very or somewhat important (78.8% indicated it was very important). Seeing abundant deer sign followed close behind, with 95% of the hunters indicating it was very (62.7%) or somewhat (33.1%) important. Being out in the woods and companionship of the hunting group were considered to be important for a quality hunt by 94.1% and 87.3% of the hunters, respectively. 84% of the hunters said getting a deer was important. Of these, 23.2% ranked it as very important and 60.9% ranked it as somewhat important. The two variables picked least often as necessary for a quality hunt were few other hunters in the woods (71.6% important) and many days to hunt (63.1%). Only 24.9% of the respondents indicated that few other hunters in the woods was very important. Consistently, only 22.2% of the hunters ranked few other hunters as very important in their choice of a hunting zone. Among those hunters who indicated they were dissatisfied with the present hunting season, only 10% said they would like fewer hunters in the field.

TABLE 18: Hunter Rating of Importance of Factors Contributing to a Quality Hunt -- Percent of Respondents

Factors	Very Important	Somewhat Important	Not Important
Getting a deer	21.6	60.3	18.1
Few other hunters in woods	24.9	46.7	28.4
Seeing deer	78.8	20.5	.8
Seeing abundant deer sign	62.7	33.1	4.3
Many days to hunt	21.7	41.4	36.9
Getting out in the woods	73.2	20.9	5.9
Companionship of the hunting group	65.3	22.0	12.7

Factors in Choosing a Hunting Zone. A chance of getting a deer was the reason given most often as important in choosing the zone in which to hunt. A total of 85.1% of the hunters said this was very or somewhat important in choice of zone. The next most important factors had to do with accessibility (and possibly familiarity). Family or friends owning land in the zone ranked second, with 67.2% of the hunters saying it was very or somewhat important, and hunting close to home followed close behind (66.1%). Available public land for hunting was important to 58.7% of the hunters and tradition was an important factor in picking a hunting zone to over half the hunters (51.9%). The presence of few other hunters in a zone was a very important factor to 22.2% of the hunters and somewhat important to another 34.4%. The two factors of least importance were a longer season, important to only 36.1% of the respondents, and the hunter himself owning land in the zone, ranked as important by one-third of the hunters (only 23.6% of the hunters surveyed own land on which they hunt deer).

Perceived Deer Population Level in Hunting Zone. Hunters were asked to evaluate whether the deer population in the zone in which they hunt had increased or decreased in the past five years. Nearly half of the hunters (43.2%) indicated that they believed the deer population had stayed about the same in their respective zones. 30.8% of the hunters said the number of deer had increased (9.3% said deer numbers had increased greatly and 21.5% said increased slightly) while 26.1% of the hunters said the number of deer in their zone had decreased (10.8% said the number of deer had decreased greatly and 15.3% said it had decreased only slightly). The

largest reports of increase in deer numbers came from the southern, farmland zones, and the most common reports of decreasing deer populations came from the northern zones 1 and 2.

Hunter Knowledge of Illegal Deer Kills. As stated earlier, one purpose of this study was to get some idea of the magnitude of illegal deer kills throughout the state, both during and outside the deer hunting season. Both hunters and landowners were queried as to whether they had first-hand knowledge of any illegal deer kills either during the 1975 deer hunting season or at some other time during the year (see Tables 19 and 20).

TABLE 19: Hunter Knowledge of Illegal Deer Kills During Season

	1975 Hunting Zone									State Total
	1	2	3	4	5	6	7	8	9	
% of Hunters who know of illegal kills	31.9	35.3	26.2	29.7	14.5	28.1	20.1	24.5	33.7	28.4

TABLE 20: Number of Illegal In-Season Deer Kills Known (Among Hunters Knowing of at Least One) -- Percent of Respondents

Number of Deer Kills	1975 Hunting Zone									State Total
	1	2	3	4	5	6	7	8	9	
1	17.6	23.2	27.3	20.3	27.3	27.8	37.3	23.0	22.1	23.8
2-5	53.8	56.8	51.5	59.5	54.5	55.6	43.1	52.5	68.4	56.2
6-10	9.9	6.3	10.6	11.4	0	8.3	13.7	13.1	4.2	9.1
Over 10	18.7	13.7	10.6	8.9	18.2	8.3	5.9	11.5	5.3	10.9

A significant number of hunters indicated that they knew (excluding news accounts and rumors) of illegal deer kills both during and outside the 1975 season--28.4% of state hunters knew of illegal deer kills during the 1975 season and slightly fewer--22.4% of hunters knew of illegal kills at times other than during the deer hunting season. Even more startling, most of those who knew of illegal kills were not merely citing an isolated incident--they often knew of 2 or more deer taken illegally. Of those hunters who said they knew of illegal deer kill during the 1975 season, 76.2% (a total of 446 hunters) said they knew of two or more such kills. Likewise, 73.4% (333) of hunters who were aware of deer being taken out of season knew of two or more such kills. Tables 21 and 22 indicate the totals by zone.

TABLE 21: Hunter Knowledge of Illegal Deer Kills Outside the Season

	1975 Hunting Zone									State Total
	1	2	3	4	5	6	7	8	9	
% of Hunters who know of illegal kills	26.9	22.1	13.8	29.0	9.3	28.9	18.3	27.7	18.8	22.4

TABLE 22: Known Number of Illegal Deer Kills Outside the Season (Among Hunters Knowing of at Least One) -- Percent of Respondents

Number of Deer Kills	1	2	3	4	5	6	7	8	9	State Total
1	29.9	27.8	36.1	22.7	14.3	19.4	31.0	18.1	34.5	26.7
2-5	50.6	40.7	52.8	65.3	42.9	69.4	52.4	52.8	43.6	53.1
6-10	2.6	13.0	5.6	4.0	0	2.8	9.5	15.3	14.5	8.4
Over 10	16.9	18.5	5.6	8.0	42.9	8.3	7.1	13.9	7.3	11.9

HUNTER SATISFACTION AS RELATED TO HUNTER CHARACTERISTICS

In order to establish a deer hunting season which is acceptable to Minnesota hunters, it is necessary to understand what factors contribute to a hunter's satisfaction. Some of the variables which are important for hunter satisfaction such as length of season and choice of hunting zone can be manipulated by the Department of Natural Resources through its policies and regulations; others such as the number of deer or the amount of deer sign seen by a hunter are largely out of the control of DNR. But it is, nevertheless, desirable to know what factors affect deer hunter satisfaction.

Several factors contribute to hunter satisfaction with deer hunting regulations and/or hunter willingness to have deer hunting regulations remain as they were in 1975.

Whether or not a hunter tags a deer while hunting has a significant effect on hunter satisfaction (as shown in Table 23). The probability of a hunter being "very satisfied" with deer hunting regulations increases with recent success at tagging a deer. There is a lesser, but still significant correlation between being "not satisfied" and recent success at tagging a deer. Here, however, increased success from one year to the next appears to have a more positive effect than tagging a deer in both 1974 and 1975. Tagging a deer in the most recent season has a far stronger effect on satisfaction than equal success in a preceding season.

TABLE 23: Satisfaction with Hunting Regulations vs. Hunting Success --
Percent of Respondents

Satisfaction with Hunting Regulations	Tagged a Deer in 1974 or 1975			
	1974 Only	1975 Only	Both Years	Neither
Very Satisfied	22.1	30.5	34.6	19.6
Somewhat Satisfied	37.2	40.7	31.8	37.8
Not Satisfied	34.7	20.7	29.1	37.6
Undecided	6.0	8.1	4.5	5.0

The same relationship exists between a hunter's success in tagging a deer and his opinion on keeping deer regulations the same for another season (Table 24).

TABLE 24: Hunter Opinion on Regulations Remaining the Same vs. Hunting Success -- Percent of Respondents

Regulations should remain the same in 1976	1974 Only	1975 Only	Both Years	Neither
Strongly Approve	31.8	41.5	44.1	30.9
Somewhat Approve	20.7	27.4	22.2	23.8
Neutral	9.0	10.8	10.4	11.4
Somewhat Oppose	19.8	12.1	10.8	16.4
Strongly Oppose	18.8	8.3	12.5	17.5

Variation in the number of deer seen by individual hunters seemed to have a negative effect on hunter satisfaction only if the hunter did not see any deer while hunting. Hunters seeing one or more deer were fairly equally satisfied regardless of the actual number of deer sighted. However, hunters who saw no deer while hunting in 1975 expressed less satisfaction and greater dissatisfaction than did other hunters. (Only 15.1% of hunters seeing no deer were "very satisfied" compared to 24.1% overall, and 45.4% of hunters seeing no deer said they were "not satisfied" compared to 32.7% for all state hunters.) The relationship was less strong between number of deer seen and desire to keep the present regulations.

There is a direct relationship between amount of deer sign seen by a deer hunter and both hunter satisfaction and hunter willingness to keep the present regulations (see Tables 25 and 26). As the number of hunters reporting plentiful deer sign declines, the number of very satisfied

hunters decreases and the number of dissatisfied hunters increases. Similarly, as the number of hunters reporting plentiful deer sign declines, the number of hunters who strongly approve of keeping regulations the same decreases, and the number who strongly oppose keeping the same regulations increases.

TABLE 25: Satisfaction with Hunting Regulations vs. Amount of Deer Sign Seen -- Percent of Respondents

Satisfaction with Hunting Regulations	Amount of Deer Sign Seen			State Total
	Abundant	Common	Scarce	
Very Satisfied	31.0	23.8	13.2	24.1
Somewhat Satisfied	36.6	39.9	32.8	37.6
Not Satisfied	28.1	30.4	46.9	32.7
Undecided	4.4	5.9	7.2	5.6

TABLE 26: Hunter Opinion on Regulations Remaining the Same vs. Amount of Deer Sign Seen -- Percent of Respondents

Regulations should remain the same in 1976	Abundant	Common	Scarce	State Total
Strongly Approve	40.1	34.7	25.8	34.8
Somewhat Approve	22.3	25.1	22.2	23.7
Neutral	11.2	10.5	10.8	10.8
Somewhat Oppose	14.0	15.9	16.7	15.4
Strongly Oppose	12.3	13.8	24.4	15.2

Hunters who believe there has been a decrease in the number of deer in their hunting zone over the last five years are less likely to be very satisfied and more likely to be dissatisfied with hunting regulations than hunters who believe the deer herd has increased or stayed the same, as can be seen in Table 27.

TABLE 27: Satisfaction with Hunting Regulations vs. Perceived Change in Number of Deer -- Percent of Respondents

Satisfaction in Hunting Regulations	Change in Number of Deer--Last Five Years				
	Increase Greatly	Increase Slightly	Stayed Same	Decrease Slightly	Decrease Greatly
Very Satisfied	31.3	27.5	25.5	17.9	11.6
Somewhat Satisfied	32.3	39.5	39.5	40.9	24.6
Not Satisfied	34.4	27.0	29.0	34.3	60.7
Undecided	2.1	6.0	6.0	6.9	3.1

In addition, the percentage of hunters who strongly approve of keeping hunting regulations the same decreases in accordance with the percentage of hunters who perceive the deer population level to be decreasing (Table 28). Of those who perceive the deer population level as decreasing greatly in recent years, over one-third (34.8%) strongly oppose keeping regulations the same as in 1975 (more than double the proportion of any other group strongly favoring a change in regulations).

TABLE 28: Hunter Opinion on Regulations Remaining the Same vs. Perceived Change in Number of Deer -- Percent of Respondents

Regulations should remain the same in 1976	Change in Number of Deer--Last Five Years				
	Increase Greatly	Increase Slightly	Stayed Same	Decrease Slightly	Decrease Greatly
Strongly Approve	38.9	38.4	37.9	30.3	20.1
Somewhat Approve	25.6	22.1	24.4	24.3	18.6
Neutral	7.2	10.8	11.0	11.3	11.3
Somewhat Oppose	15.0	16.3	13.8	18.7	15.2
Strongly Oppose	13.3	12.4	13.0	15.3	34.8

Knowledge of illegal deer kills during the hunting season had a negative effect on hunter satisfaction with deer hunting regulations (see Table 29), but knowledge of illegal deer kills outside the deer season had

no significant effect on hunter satisfaction with the regulations. Hunters who said they were aware of illegal deer kills during the hunting season were less likely to be very satisfied and more likely to be not satisfied than hunters who knew of no illegal deer kills during the hunting season.

TABLE 29: Satisfaction with Hunting Regulations vs. Knowledge of In-season Illegal Deer Kills -- Percent of Respondents

Satisfaction with Hunting Regulations	Knowledge of In-season Illegal Deer Kills		State Total
	Yes	No	
Very Satisfied	19.6	25.6	23.9
Somewhat Satisfied	39.2	36.9	37.6
Not Satisfied	36.1	31.9	33.1
Undecided	5.1	5.5	5.4

Similarly, knowledge of illegal deer kills outside the deer season had no significant effect on a hunter's opinion on keeping hunting regulations the same as in 1975. Hunters who knew of illegal deer kills during the season were less likely to strongly approve of keeping regulations the same and more likely to strongly oppose keeping the same regulations than were hunters who knew of no illegal deer kills during the 1975 season (Table 30).

TABLE 30: Opinion on Regulations Remaining the Same vs. Knowledge of In-season Illegal Deer Kills -- Percent of Respondents

Regulations should remain the same in 1976	Knowledge of In-season Illegal Deer Kills		State Total
	Yes	No	
Strongly Approve	29.3	37.0	34.8
Somewhat Approve	25.5	23.2	23.9
Neutral	9.2	11.4	10.8
Somewhat Oppose	15.2	15.4	15.3
Strongly Oppose	20.7	13.1	15.3

A significant relationship exists between satisfaction with hunting regulations and a hunter's desired method of regulating the deer harvest (Table 31). Among hunters who are less satisfied, preferences for methods of regulating the deer harvest become weighted more toward a short season with some years closed and away from the other two alternatives (a hunter drawing and a drawing to take antler deer).

TABLE 31: Satisfaction with Hunting Regulations vs. Hunter Choice of Methods of Regulating Deer Harvest -- Percent of Respondents

Methods of Regulating Deer Harvest	Satisfaction with Deer Hunting Regulations				State Total
	Very Satisfied	Somewhat Satisfied	Not Satisfied	Undecided	
Some years closed	46.6	51.1	58.3	58.9	52.8
Hunter drawing	7.7	9.3	9.2	6.5	8.7
Deer drawing	41.3	33.9	24.5	30.8	32.5
None of the above	3.5	4.0	6.3	3.7	4.6
More than one of the above	.8	1.7	1.7	0	1.4

CONCLUSION - SUMMARY

Minnesota deer hunters, as a group, show the following characteristics:

- Most deer hunters hunt in parties of six or less people
- Individuals tend to hunt in the same area from year to year
- Over half the hunters travel only a short distance (under 25 miles) to hunt
- They hunt mainly on private land

Nearly two thirds of the deer hunters are satisfied with the deer hunting regulations in their zone, and 60% of the hunters approve of having the same regulations for future hunting seasons.

Hunters in all zones favor the status quo over any changes. Hunters who hunt in a zone where a particular regulation has been in effect at least one year are more likely to approve of that regulation than hunters who have never experienced the regulation.

Hunters favor having a short, either-sex season, with some years closed, to other methods of regulating the deer harvest. Neither bucks-only hunting or a drawing to limit the number of hunters are acceptable alternatives.

Flexibility in hunting time and location are important factors for hunters. Both choice of hunting zone and choice of days to hunt were ranked as very desirable options.

A quality hunt depends upon many variables including, by order of importance: seeing deer, abundant deer sign, being out in the woods, companionship of the hunting group, and getting a deer.

A good chance of getting a deer is the most important factor in choosing a hunting zone. Personal or family ownership of land for hunting and hunting close to home were also important to many hunters.

A significant number (nearly one-fourth) of hunters knew of illegal deer kills. Knowledge of illegal deer kills during the season had a negative effect on hunter satisfaction.

CHAPTER IV: RESULTS OF THE LANDOWNER SURVEY

LANDOWNER CHARACTERISTICS

Landowner's problems with deer hunting and their opinions of the 1975 deer season and management alternatives was thought to be, in part, a function of certain landowner characteristics. Therefore, data were collected concerning each landowner's farm size, enterprises, and degree of involvement with deer hunting.

Due to differences in the quality of land, its suitability to various farming enterprises, and minimum feasible farm size, there are great zonal differences in the distributions of farm sizes and enterprises taking place (Tables 32 and 33). Farms are largest, on the average, in northwestern Minnesota and smallest in southeastern Minnesota. Most of the land farmed is owned, rather than rented.

TABLE 32: Approximate Median Number of Acres Owned and Rented

	1975 Hunting Zone									State Average
	1	2	3	4	5	6	7	8	9	
Owned	305	167	153	197	357	326	218	164	189	225
Rented	32	31	34	28	33	39	37	31	37	33

The most important enterprises taking place on Minnesota farms are corn, wheat and other small grains, alfalfa and other hay, dairy and beef cows, cattle feeding, and hogs. Corn, cattle feeding, and hogs are dominant in the southern half of the state. Beef cows and alfalfa enterprises are important along a band from northwestern to southeastern Minnesota. Wheat dominates northwestern and west-central Minnesota. Dairy cows are an important enterprise in central Minnesota.

TABLE 33: Percent of Farms Engaging in Various Enterprises

Enterprise	1975 Hunting Zone									State Total
	1	2	3	4	5	6	7	8	9	
Dairy cows	26	46	45	49	18	15	21	47	21	31
Beef cows	53	32	39	36	40	21	20	28	24	32
Cattle feeding	17	24	32	19	16	17	27	36	36	25
Hogs	16	16	32	22	11	8	28	30	44	23
Poultry	11	9	14	13	9	5	16	13	12	11
Sheep	9	2	5	5	11	3	5	3	7	6
Horses	10	12	11	6	6	6	5	8	8	8
Corn/soybeans	25	60	86	69	17	34	86	86	91	62
Wheat/other grains	69	48	50	52	90	92	76	67	54	68
Sunflowers	1	0	0	0	8	16	11	1	0	5
Sugar beets	0	0	0	0	3	24	2	0	0	4
Alfalfa/other hay	75	77	77	77	65	40	49	77	54	64
Potatoes	2	4	2	4	5	6	2	5	1	4
Other	4	3	5	3	5	3	5	2	3	4

Many landowners are involved with deer hunting directly or are familiar with it indirectly (Table 34). Of all respondents, 49.7% are deer hunters themselves, and 51.8% of the respondents indicated that others in the family hunted deer. Even among the 50.3% of the respondents who are not deer hunters themselves, 32% indicated that others in the family hunted deer. (Sixteen percent of all respondents did not hunt but had a family member who hunted.) Therefore, 66.4% of the respondents are deer hunters or come from families with at least one deer hunter. Involvement

of respondents with deer hunting is somewhat lower in the southern part of the state than in the northern part.

TABLE 34: Involvement of Landowners with Deer Hunting

	1975 Hunting Zone									State Total
	1	2	3	4	5	6	7	8	9	
Percent of landowners who hunt deer	66	62	34	62	60	48	46	54	29	50
Percent of total respondents who do not hunt but have family member who hunts deer	12	14	25	15	16	17	14	14	15	16
Total hunting involvement (Sum of the above)	78	76	59	77	76	65	60	68	44	66

Most landowners do not post their land against hunting, and hunting on private land is allowed either with or without permission (Table 35). Some landowners mentioned that there was very little difference between allowing hunting outright and allowing it with permission, as most hunters do not bother to ask permission to hunt. Apparently, many hunters hunt where they feel like hunting, regardless of any postings.

TABLE 35: Percent of Landowners Allowing Hunting and Percent of Farms Posted

Percent Allowing Hunting on Land	1	2	3	4	5	6	7	8	9	State Total
Without permission	54	30	33	50	52	65	33	36	37	44
Permission only	43	54	58	45	41	29	50	57	48	46
TOTAL	97	84	91	95	93	94	83	93	85	90

Percent Posted Farms	32	37	23	28	34	19	16	28	11	24

Relationships between landowner characteristics and attitudes toward deer hunting and its problems will be discussed in the following sections.

LANDOWNER ATTITUDES REGARDING MANAGEMENT ALTERNATIVES

Landowners were asked to indicate their degree of approval or disapproval of eight deer hunting season management alternatives (question 11). They were also asked to indicate the total number of days of deer hunting that should be allowed in their zone and the time of year that the season should take place.

Some of the management alternatives were in effect in various 1975 hunting zones. Therefore, landowner opinion of these alternatives served to assess their opinion of the 1975 deer season management. Comparisons between the 1975 regulations and the landowners' desired length of season and time of year for the season were further indications of the landowners' opinions of the 1975 deer season management.

Management alternatives which were not in effect in particular zones during the 1975 deer season were presented to landowners to assess their attitudes toward these possibilities.

The management alternatives that they were asked to "rate" with respect to their zone were:

- 1) leaving regulations the same
- 2) making the season longer (decreasing the number of hunters for a given day)
- 3) making the season shorter (increasing the number of hunters for a given day)
- 4) allowing only shotguns with a single slug

- 5) permitting rifles
- 6) allowing buck hunting with a quota on antlerless deer
- 7) limiting the number of deer hunters by drawing
- 8) allowing the taking of deer of either sex

As Table 36 indicates, item non-response (total percent of respondents not answering the question, checking "no opinion", and checking "neutral") was substantial for all of the alternatives. The percent of people favoring each alternative is in relation only to those people who had an opinion on the issue. The overall favoring percents are rather misleading, as the zonal distributions of favoring responses must be examined (Table 37). One interesting aspect of landowner opinion is that, while a considerable portion of respondents expressed no opinion, those who had an opinion felt strongly on the issues (approving or opposing). Psychological researchers have noted that, in general, when people express attitudes on scaled questions, they do not tend to check the extremes of opinion³. On every issue, of those expressing opinions, most expressed an extreme opinion. This indicates the sensitivity and importance of these issues to those familiar with deer hunting management alternatives.

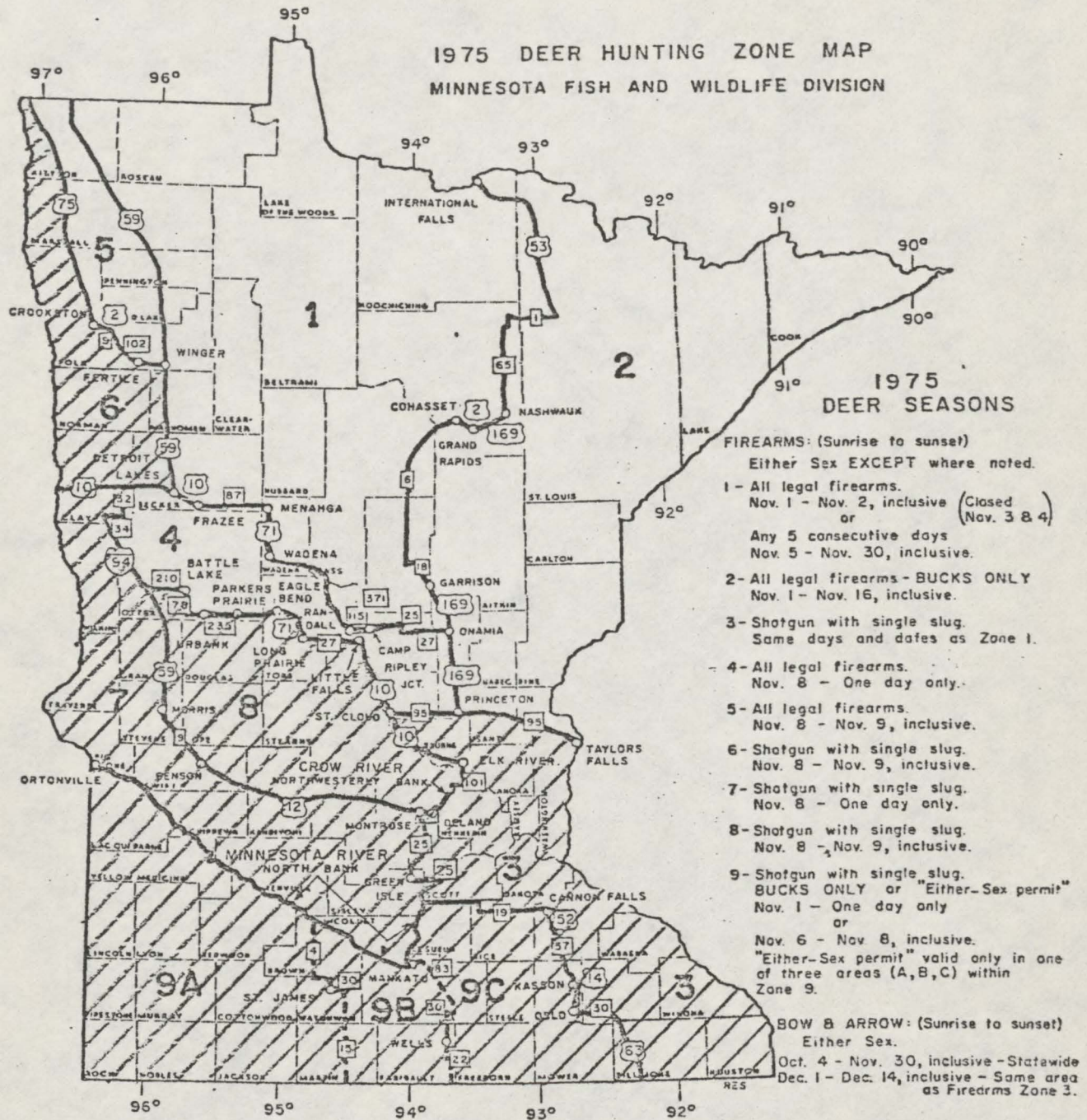
3. See reference 13.

TABLE 36: Landowner Attitudes Regarding Deer Hunting Season Management Alternatives

Deer Hunting Management Alternatives	Percent- No Opinion	Opinion Given	
		Percent- In Favor	Percent Strongly in Favor or Strongly Opposed
Same regulations	33	59	60
Longer season	33	27	72
Shorter season	39	54	75
Shotguns only	32	68	86
Permit rifles	32	38	86
Allow buck hunting with antlerless quota	49	42	67
Limit hunters-draw	41	31	72
Allow either sex take	37	75	70
State Total	37	--	74

Table 37 displays major zonal differences in attitudes toward management alternatives. It is obvious that people in zones 1, 2, and 3 are less satisfied with the prospect of keeping the regulations the same than are landowners in other zones. What zones 1, 2, and 3 have in common is that the season lengths in these zones are very long. The responses toward allowing shotguns only and permitting rifles were clearly in favor of preserving the status quo. In 1975, zones 3, 6, 7, 8 and 9 were "shotguns only" zones (Figure 3). In these zones, landowners favor keeping it that way. In the other zones, where rifles are permitted, landowners want to keep it that way.

1975 DEER HUNTING ZONE MAP
MINNESOTA FISH AND WILDLIFE DIVISION



- 1975 DEER SEASONS**
- FIREARMS:** (Sunrise to sunset)
Either Sex EXCEPT where noted.
- 1 - All legal firearms.
Nov. 1 - Nov. 2, inclusive (Closed Nov. 3 & 4)
or
Any 5 consecutive days
Nov. 5 - Nov. 30, inclusive.
 - 2 - All legal firearms - BUCKS ONLY
Nov. 1 - Nov. 16, inclusive.
 - 3 - Shotgun with single slug.
Same days and dates as Zone 1.
 - 4 - All legal firearms.
Nov. 8 - One day only.
 - 5 - All legal firearms.
Nov. 8 - Nov. 9, inclusive.
 - 6 - Shotgun with single slug.
Nov. 8 - Nov. 9, inclusive.
 - 7 - Shotgun with single slug.
Nov. 8 - One day only.
 - 8 - Shotgun with single slug.
Nov. 8 - Nov. 9, inclusive.
 - 9 - Shotgun with single slug.
BUCKS ONLY or "Either-Sex permit"
Nov. 1 - One day only
or
Nov. 6 - Nov. 8, inclusive.
"Either-Sex permit" valid only in one of three areas (A, B, C) within Zone 9.
- BOW & ARROW:** (Sunrise to sunset)
Either Sex.
Oct. 4 - Nov. 30, inclusive - Statewide
Dec. 1 - Dec. 14, inclusive - Same area as Firearms Zone 3.

Figure 3. Types of Firearms Permitted
- 1975 Deer Hunting Season



-  All Legal Firearms Permitted
-  shotguns only Permitted

TABLE 37: Zonal Distribution of Percent of Landowners Favoring Management Alternatives (Among Landowners with Opinions)

Deer Hunting Management Alternative	1975 Hunting Zones									State Total
	1	2	3	4	5	6	7	8	9	
Same regulations	33	49	40	63	68	67	67	65	59	59
Longer season	15	22	16	37	27	37	30	17	32	27
Shorter season	78	60	73	38	56	46	31	54	48	54
Shotguns only	17	14	92	35	30	76	93	87	92	68
Permit rifles	87	81	8	81	79	33	10	17	8	38
Bucks-antlerless quota	29	63	52	30	30	38	48	35	66	42
Limit hunters-draw	29	23	34	24	26	32	35	28	44	31
Either sex take	90	61	71	87	84	78	71	74	56	75

Among the other management alternatives, landowners also leaned toward preserving the status quo. Buck hunting was most favored in zones 2 and 9, where that was the 1975 rule. Elsewhere, the prospect of "bucks only" was not popular. Even less popular was the suggestion of limiting the number of hunters by drawing. The most favorable response to this prospect was in zone 9, where the only 1975 drawing took place (for "either-sex" permits). The alternative of allowing "either-sex" hunting was quite popular, but least so in zone 2 (where "bucks-only" was the rule) and zone 9 (where "bucks-only" was the rule except for an "either-sex" permit drawing).

In general, therefore, landowners want to keep the regulations the same as they are now, with the exception of season length. There was widespread support for shortening the long seasons in zones 1, 2, and 3 (Table 38).

TABLE 38: Median Desired Length of Deer Hunting Season by Landowners

		1975 Hunting Zones								
		1	2	3	4	5	6	7	8	9
Desired days		8	9	5	1	2	1	1	1	2
1975 Season Length (Days)		28	16	28	1	2	2	1	2	4

The most popular time of year for the deer season is mid-November (Table 39). Only in zone 3, where late November was most popular, and zone 9, where early November was most popular, was this not the case. The prospect of early December hunting was not at all favored.

TABLE 39: Desired Time of Year for Deer Hunting Season by Landowners -- Percent of Respondents

		1975 Hunting Zones									
Desired Time of Year		1	2	3	4	5	6	7	8	9	State Total
Early November		21	20	16	31	34	33	34	34	37	30
Mid-November		59	48	32	50	47	42	38	43	28	42
Late November		17	27	43	16	17	19	24	19	26	23
Early December		3	5	9	3	2	6	4	4	9	5

RELATIONSHIPS BETWEEN LANDOWNER CHARACTERISTICS AND ATTITUDES TOWARD MANAGEMENT ALTERNATIVES

There were essentially no clear-cut relationships between farm size or enterprise distribution and the degree of favor toward management alternatives (Tables 40 and 41). This is curious, as there are certainly

relationships between farm size and enterprise distributions and degree of problems with deer hunters; there is a relationship between degree of problems and attitudes toward management alternatives. (These relationships will be discussed in a later section.)

TABLE 40: Relationship Between Farm Size and Percent Favoring Management Alternatives (Among Landowners with Opinions)

Deer Hunting Management Alternatives	Farm Size (Acres)				
	<40	41-160	161-320	321-640	>640
Same regulations	59	60	58	61	57
Longer season	29	23	29	29	22
Shorter season	53	54	52	56	55
Shotguns only	79	72	70	61	56
Permit rifles	30	34	35	45	50
Bucks-antlerless quota	48	48	43	38	33
Limit hunters-draw	31	34	31	28	27
Either sex take	68	72	77	78	77

TABLE 41: Relationship Between Major Farming Enterprises and Percent Favoring Management Alternatives (Among Landowners with Opinions)

Deer Hunting Management Alternatives	Enterprise						
	Corn	Wheat	Alfalfa	Dairy Cows	Beef Cows	Feeding	Hogs
Same regulations	60	61	57	55	56	55	58
Longer season	26	28	27	28	24	27	27
Shorter season	51	53	55	52	58	52	51
Shotguns only	77	67	64	65	63	77	75
Permit rifles	28	40	41	40	44	29	27
Bucks-antlerless quota	45	41	40	41	40	46	45
Limit hunters-draw	31	30	29	27	29	31	30
Either sex take	73	77	77	76	77	73	75

There were differences in some attitudes toward management alternatives depending on whether the landowner was directly, indirectly, or not involved with deer hunting (Table 42). Major differences of opinion were that those not involved with deer hunting favored shotguns only and opposed permitting rifles; this same group favored allowing buck hunting with an antlerless quota and limiting the number of hunters by drawing, and opposed (relatively) "either sex" taking of deer. It was noticed, however, that item non-response (as described earlier) was directly related to the landowner's non-involvement with deer hunting. Only 24% of all possible responses toward the alternatives were not checked by landowners who hunt. Those indirectly involved declined to answer 41% and those not involved declined to check 51% of the alternatives.

TABLE 42: Relationship Between Involvement in Deer Hunting and Percent Favoring Management Alternatives (Among Landowners with Opinions)

Deer Hunting Management Alternatives	Involvement		
	Direct*	Indirect**	None***
Same regulations	57	63	62
Longer season	28	31	23
Shorter season	51	57	57
Shotguns only	55	80	87
Permit rifles	52	28	16
Bucks-antlerless quota	33	55	64
Limit hunters-draw	18	39	58
Either sex take	84	74	54

* Landowner is hunter
 ** Landowner is not hunter - but family does hunt
 *** Landowner is not hunter - family also does not hunt

EXTENT OF LANDOWNER'S PROBLEMS WITH DEER AND DEER HUNTERS

Approximately two thirds to three-fourths of the landowners in Minnesota suffer no damage due to deer (Table 43). Some farmers discussed the problem of estimating the dollar amount of crop loss due to deer. Further, many farmers indicated that, regardless of the dollar loss, they do not consider it damage, as they stated that they enjoyed the deer and did not mind feeding them. Zonal variation in deer damage was quite small and is, therefore, not displayed here.

TABLE 43: Extent of Landowners' Problems Due to Deer Damage -- Percent of Respondents

Number of Past Four Years
That Deer Damaged Crops

0	1	2	3	4
73	5	5	2	15

Most Damage in Any One Year
Of the Past Four By Year

None	<\$10	\$10-100	>\$100
65	10	18	7

Average Annual Loss from Deer Damage

None	<\$10	\$10-100	>\$100
70	7	14	9

There is quite a zonal variation in problems caused by deer hunters (Table 44). About 29% of the respondents gave some indication (in questions 2, 3, or 8) of problems. The amount of damage caused was moderate (usually \$10 to \$100) and showed no zonal variation among those suffering damage.

TABLE 44: Extent of Landowners' Problems Due to Deer Hunters -- Percent of Respondents

Landowner's Problems	1975 Hunting Zone									State Total
	1	2	3	4	5	6	7	8	9	
Had arguments	24	24	18	14	22	8	10	13	7	15
Had damage	25	23	21	12	16	11	9	5	7	13
Gave any indication of problems	41	38	40	31	39	20	18	23	18	29

Most of the abuses concerned disrespect for the landowners' rights and property, rather than the shooting (intentional or accidental) of livestock, etc. (Table 45). Two-thirds of the reported abuses were toward fences, gates, and crops. It is encouraging to note that among all 1793 returned questionnaires, there were only three reported instances of death or injury to people -- one each in zones 2, 3, and 6.

TABLE 45: Description of Abuses to Landowners' Rights and Property Due to Deer Hunters

Description Of Abuses	Percent of all Reported Abuse
Death or injury to people	<1
Death or injury to livestock	7
Death or injury to poultry	<1
Harassment of livestock or poultry	11
Damage to buildings	3
Damage to fences	27
Damage to other property	3
Damage to crops	18
Gates left open	24
Other	6
TOTAL	100

Some clear relationships between landowners' problems with deer hunters and characteristics of landowners were evident. Whether a farmer owned or rented, it is obvious from Table 46 that those operating larger farms were having more problems with deer hunters than those with smaller farms.

TABLE 46: Relationship Between Farm Size and Landowners' Problems with Deer Hunters

Farm Size (Acres)	Percent of Respondents Reporting Problems	
	Owners	Renters
1 - 40	16	27
41 - 160	20	27
161 - 320	30	36
321 - 640	36	31
> 640	44	46

The problem rate also varied with the farmer's enterprises, although not as clearly as above. It appears that the problem rate among livestock-related enterprises (the first seven items of Table 47) is about one-third higher than in crop-related enterprises. The problem rates of Table 47 seem rather high throughout. This is apparently because those farmers with problems, often having large acreage, are engaged in multiple enterprises to a greater degree than those with small farms.

TABLE 47: Relationship Between Farm Enterprises and Landowners' Problems with Deer Hunters

Enterprise	Percent of Respondents Reporting Problems
Dairy cows	33
Beef cows	41
Cattle feeding	35
Hogs	29
Poultry	32
Sheep	45
Horses	42
Corn/soybeans	31
Wheat/other grains	30
Sunflowers	33
Sugar beets	15
Alfalfa	34
Potatoes	32
Other	38

Those landowners who were deer hunters themselves suffered more hunter abuse than non-hunter landowners (Table 48). Those more inclined to permit hunting on their land (Table 49) suffered far fewer abuses than those forbidding hunting. Of course, landowners who have suffered hunter abuse in the past may be forbidding hunting because of that abuse or feel abused because they resent hunters.

TABLE 48: Relationship Between Landowners' Status as Deer Hunters and Landowner's Problems with Deer Hunters

Status	Percent of Respondents Reporting Problems
Landowner is deer hunter	33
Landowner is not deer hunter	25

TABLE 49: Relationship Between Extent and Status of Hunting on Landowners' Land and Landowners' Problems with Deer Hunters

Landowner Allows Hunting	Percent of Respondents Reporting Problems
Without permission	19
With permission	36
No	44

Land Posted	Percent of Respondents Reporting Problems
Yes	56
No	21

RELATIONSHIPS BETWEEN LANDOWNERS' PROBLEMS WITH DEER AND DEER HUNTERS AND ATTITUDES TOWARD MANAGEMENT ALTERNATIVES

With such zonal variations in problem rates, it is not surprising to note great differences in attitudes toward management alternatives between those with hunter problems and those without (Table 50). Specifically, landowners with problems were less satisfied with present regulations and showed relative favor toward limiting the number of hunters by drawing. It may appear from Table 50 that landowners with hunter problems favor shorter seasons than do landowners without hunter problems, but this is explained by zonal variations in problem rate. It is interesting to note that within none of the nine zones was the desired number of days of the deer hunting season among landowners with problems in a given zone significantly different (at the .05 level) than desired season length among landowners without problems in that zone.

TABLE 50: Relationship Between Landowners' Problems with Deer Hunters and Percent Favoring Management Alternatives (Among Landowners with Opinions)

Deer Hunting Management Alternative	With Hunter Problems	Without Hunter Problems
Same regulations	47	65
Longer season	21	30
Shorter season	65	48
Shotguns only	63	70
Permit rifles	40	37
Bucks-antlerless quota	43	42
Limit hunters-draw	40	27
Either sex take	73	76

Item non-response was 30% for landowners with hunter problems and 38% for landowners without hunter problems.

Whether or not a landowner suffered damage due to deer was not an important determinant of attitude towards management alternatives (Table 51). Landowners having deer damage were somewhat more inclined (relatively) to favor a longer season than those without deer damage (perhaps to allow the killing of more deer), but raw totals indicate that here, too, most landowners do not want the season lengthened.

TABLE 51: Relationship Between Landowners with Deer Damage and Percent Favoring Management Alternatives (Among Landowners with Opinions)

Deer Hunting Management Alternatives	With Deer Damage	Without Deer Damage
Same regulations	59	59
Longer season	33	24
Shorter season	49	56
Shotguns only	74	66
Permit rifles	35	39
Bucks-antlerless quota	45	42
Limit hunters-draw	33	31
Either sex take	77	72

When landowners compared the damage caused by deer and deer hunters, the most popular response, statewide, was that neither damages landowners' property (Table 52). Among those suffering damage who perceived a difference in damage between deer and hunters, landowners thought hunters caused the greater damage in zones 1, 2, 3, 4, and 5.

TABLE 52: Landowners' Opinions Comparing Damage Due to Deer and Deer Hunters -- Percent of Respondents

Landowner Opinion	1975 Hunting Zone									State Total
	1	2	3	4	5	6	7	8	9	
Neither deer nor deer hunters cause damage	35	38	30	43	42	52	44	48	41	42
Deer damage greater than deer hunter damage	14	14	24	20	13	20	24	21	27	21
Damage same by deer and deer hunters	7	8	13	10	10	11	10	11	9	10
Deer hunter damage greater than deer damage	44	40	33	27	35	17	22	20	23	27

One interesting aspect of this study was the percentage of landowners with knowledge (excluding news accounts and rumors) of illegal in-season and out-of-season deer kills (Table 53). In zones 1, 2, and 4, one-fourth or more of the landowners knew of these illegal kills. Those that had knowledge of illegal kills generally knew of more than one.

TABLE 53: Landowners' Knowledge of Illegal Deer Kills

	1975 Hunting Zone									State Total
	1	2	3	4	5	6	7	8	9	
Percent knowing of illegal in-season deer kills	24	29	10	24	11	14	5	12	8	14
Median number known among those knowing of illegal kills	2	2	1	2	2	2	2	2	2	2
Percent knowing of illegal out- of-season deer kills	18	13	7	24	12	13	4	12	7	12
Median number known among those knowing of illegal kills	4	1	1	2	2	2	2	2	1	2

LANDOWNER SATISFACTION WITH PRESENT DEER HUNTING SEASON REGULATIONS

One objective of this study is to determine how satisfied landowners are with present deer hunting season regulations. Another objective is to determine what makes a landowner satisfied or dissatisfied. Zonal values for landowner satisfaction with present regulations may be measured by the zonal percent of landowners who favor keeping the 1975 regulations the same (Table 37). Obviously, there is considerable zonal variation in landowners' approval of keeping the regulations the same. Some independent variables may be important to landowners, but exhibit little zonal variation. Therefore, these variables do nothing to help explain the variation in landowner satisfaction.

To determine what independent variables were associated with zonal variation in satisfaction, a forward stepwise multiple regression was performed. The zonal values of the independent variables given in Table 54 were used. The regression was continued until the level of statistical significance (F test) increased from .002 in step one to .050 in step four (Table 55).

TABLE 54: Correlations Between Zonal Percent of Landowners Satisfied with Regulations and Zonal Distributions of Several Independent Variables

Independent Variable	Correlation With Satisfaction Rate
Percent of landowners with hunter arguments	-0.56
Percent of landowners with hunter damage	-0.79
Percent of landowners who hunt deer	+0.01
Percent of landowners whose family hunts deer	-0.34
Percent of landowners having no deer damage in the past four years	-0.12
Percent of landowners saying neither deer nor hunters cause damage	+0.87
Percent of landowners knowing of illegal in-season deer kills	-0.39
Percent of landowners knowing of illegal out-of-season deer kills	-0.07
Percent of landowners indicating any problems with deer hunters	-0.67

TABLE 55: Results of Forward Stepwise Multiple Regression to Explain Landowner Rate of Satisfaction with Regulations

Step	Variable	R ²	Statistical Significance (F Test)
1	Percent saying neither deer nor hunters cause damage	0.760	0.002
2	Percent suffering hunter damage	0.817	0.006
3	Percent having hunter arguments	0.851	0.016
4	Percent knowing of illegal in-season deer kills	0.865	0.050

Zonal variations in the four independent variables of Table 55 are the most closely associated with the zonal variations in landowner satisfaction. These four independent variables account for 86.5% of the zonal variation in satisfaction. Other variables, such as landowner involvement in hunting and damage due to deer, do not add significantly to this equation for predicting landowner satisfaction.

CONCLUSIONS

Two-thirds of the landowners surveyed are involved with deer hunting either as deer hunters themselves or by having family members who hunt deer. Most landowners allow hunting on their land and do not post their land.

Nearly 60% of the landowners favored keeping regulations in their zone the same. With the exception of landowners favoring shorter deer seasons in (1975) zones 1, 2, and 3, management alternatives involving change were unpopular. Landowners did not favor changing to or from

shotguns-only hunting or bucks-only hunting. The suggestion of a drawing to limit the number of hunters was opposed. Some variations in landowner attitudes toward management alternatives were found to be a function of landowners' involvement with deer hunting, but there was little relationship between attitude and farm size or enterprise.

One-fourth to one-third of landowners suffer crop damage due to deer and nearly 30% have problems with deer hunters on their land. Most abuses are relatively minor. (Damage to fences and leaving gates opened accounted for over half of all reported damage.) The extent of landowners' problems with deer hunters was directly related to farm size, livestock enterprises, and landowners' involvement with deer hunting.

Landowner satisfaction (or lack of satisfaction) with hunting regulations was mostly a function of landowners' problems with deer and deer hunters and knowledge of illegal deer kills.



UNIVERSITY OF MINNESOTA
TWIN CITIES

Center for Urban and Regional Affairs
311 Walter Library
Minneapolis, Minnesota 55455

Dear Hunter:

The University of Minnesota has been asked by the Minnesota Department of Natural Resources to survey deerhunters and landowners concerning the deer hunting season. The Department of Natural Resources must make decisions within the framework of good wildlife management, regarding deer hunting zones, dates of the deer hunting season, types of firearms to be used, and the number and sex of deer to be taken. These decisions must consider your hunting needs and the rights of landowners. It is hoped that policies will be developed which will lead to hunter and landowner satisfaction.

In recent years, deer hunters have been able to choose their hunting zone and dates. The enclosed map shows these zones for 1975 and gives the various hunting regulations for each zone.

The Department of Natural Resources has provided us with a list of the names of some Minnesota deer hunters, based on license information. We would be very grateful if you would take a few minutes to complete the enclosed questionnaire and mail it back to us in the envelope provided.

You need not give your name on the questionnaire. The number on the questionnaire will be used only to mark its return on our mailing list. All of your replies are confidential.

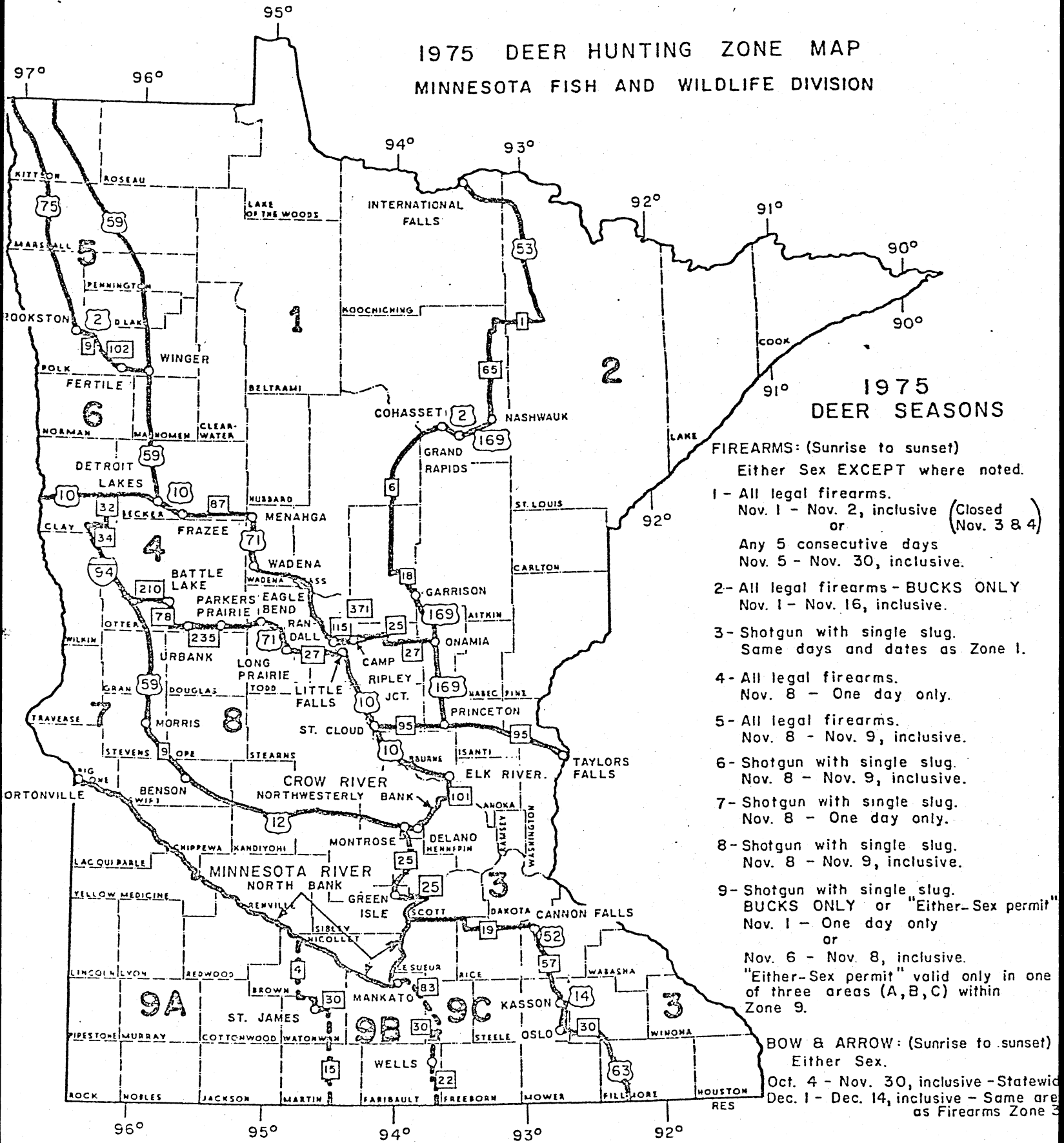
Thank you very much for your help.

Sincerely,

A handwritten signature in cursive script that reads "William J. Craig".

William J. Craig
Assistant Director
Center for Urban and Regional Affairs
University of Minnesota

1975 DEER HUNTING ZONE MAP MINNESOTA FISH AND WILDLIFE DIVISION



1975 DEER SEASONS

- FIREARMS: (Sunrise to sunset)
Either Sex EXCEPT where noted.
- 1 - All legal firearms.
Nov. 1 - Nov. 2, inclusive (Closed Nov. 3 & 4)
or
Any 5 consecutive days
Nov. 5 - Nov. 30, inclusive.
 - 2 - All legal firearms - BUCKS ONLY
Nov. 1 - Nov. 16, inclusive.
 - 3 - Shotgun with single slug.
Same days and dates as Zone 1.
 - 4 - All legal firearms.
Nov. 8 - One day only.
 - 5 - All legal firearms.
Nov. 8 - Nov. 9, inclusive.
 - 6 - Shotgun with single slug.
Nov. 8 - Nov. 9, inclusive.
 - 7 - Shotgun with single slug.
Nov. 8 - One day only.
 - 8 - Shotgun with single slug.
Nov. 8 - Nov. 9, inclusive.
 - 9 - Shotgun with single slug.
BUCKS ONLY or "Either-Sex permit"
Nov. 1 - One day only
or
Nov. 6 - Nov. 8, inclusive.
"Either-Sex permit" valid only in one of three areas (A,B,C) within Zone 9.
- BOW & ARROW: (Sunrise to sunset)
Either Sex.
Oct. 4 - Nov. 30, inclusive - Statewide
Dec. 1 - Dec. 14, inclusive - Same area as Firearms Zone 3

HUNTER SURVEY

UNIVERSITY OF MINNESOTA

Replies to the following questions will help in the planning of future deer hunting seasons and management policy. Please check the appropriate answers.

1. Did you hunt deer in 1974 or 1975?

- 1974 only
- 1975 only
- both years
- no

2. Did you tag a deer in either or both of the above years?

- 1974 only
- 1975 only
- both years
- neither
- not applicable

3. Please indicate your party size and success below:

- | Number in party (including yourself): | | Number of deer tagged: | |
|---------------------------------------|------|--------------------------|------|
| <input type="checkbox"/> | 1974 | <input type="checkbox"/> | 1974 |
| <input type="checkbox"/> | 1975 | <input type="checkbox"/> | 1975 |

4. How many deer did you see while deer hunting? (If you did not hunt in one of the years, write n.a. in blank)

- 1974
- 1975

5. Please rate the amount of deer sign seen in your deer hunting area in 1975.

- abundant
- common
- scarce

6. What is the most desirable length of a deer hunt for you?

days

7. In which county do you live? _____

8. How fixed is your deer hunting area from year to year?

- my hunting area changes a lot from one year to another
- I usually hunt the same area year to year
- I always hunt the same area year to year

9. Do you own land on which you hunt deer?

_____ yes
 _____ no

10. How many miles do you generally travel from your home to where you hunt deer?

_____ less than 25 miles
 _____ 25-49 miles
 _____ 50-99 miles
 _____ 100-199 miles
 _____ 200-299 miles
 _____ 300 or more miles
 _____ varies each year

11. In which zone did you hunt deer in 1975? (see map)

_____ 1 _____ 4 _____ 7 _____ 9a
 _____ 2 _____ 5 _____ 8 _____ 9b
 _____ 3 _____ 6 _____ _____ 9c

12a. If you hunted in Zone 9 in 1975, did you have an either sex permit?

_____ yes
 _____ no

12b. If you hunted in Zone 9 in 1975, did you tag:

_____ an antlerless deer (doe or fawn)
 _____ an antlered deer (adult male)
 _____ did not tag a deer in 1975

13. Please rate each of the following factors according to their importance in your choice of deer hunting zone.

	Very Important	Somewhat Important	Not Important	Does Not Apply
close to home				
own land there				
family or friends own land there				
greatest chance of getting a deer				
public land available for hunting				
tradition -- always hunt there				
fewer other hunters in this zone				
season is longer in this zone				
other reason: (explain)				

14. Where do you usually hunt deer?

- always on public land
- mostly on public land
- about equally on public and private land
- mostly on private land
- always on private land
- unknown ownership

15. If you hunt deer on private land, is the land owned by:

- yourself
- family
- someone else in your party
- a friend
- none of the above

16. Do you usually hunt deer on:

- predominantly wood land
- predominantly farm land
- combination of wood land and farm land

17. How satisfied are you with the present deer hunting season and regulations?

- a) very satisfied
- b) somewhat satisfied
- c) not satisfied
- d) undecided

18. If you checked a) or b) in #17, why did you do so? (check only those answers that apply)

- there is hunter choice on dates - gives hunter choice of when to hunt
- gives everyone who wants to hunt a chance to do so
- new season framework is longer - can choose time when fewer hunters are in the field
- safety factor
- present system allows hunting in agricultural zones each year
- different zones give attention to specific problems of various areas
- other (please specify) _____

19. If you checked c) or d) in #17, why did you do so?

- prefer "bucks-only" season
- prefer season closed
- prefer "bucks-only" hunting with either sex hunting by drawing
- prefer a shorter season
- prefer a longer season
- prefer more hunters in field
- prefer fewer hunters in field
- other (please specify) _____

20. Various methods of regulating the deer harvest can be used. Which of these would you prefer?

- _____ short season (1 or 2 days) with everyone being allowed to hunt deer of either sex but with some years have a closed season
- _____ deer of either sex allowed each year but the number of hunters limited by a drawing
- _____ buck only hunting with a drawing for antlerless deer

21. Following is a list of possible deer hunting management alternatives. Some are in effect at the present time, others are possibilities for the future. Please indicate your opinion concerning each of these alternatives.

	Strongly Approve	Somewhat Approve	Neutral	Somewhat Oppose	Strongly Oppose
regulations in your zone should remain the same as 1975					
choice of hunting days					
can choose hunting time which allows you more days to hunt					
hunter drawing for licenses - reduce total number of hunters					
bucks only hunting with drawing for licenses to take antlerless deer					
season open later					
hunters given choice of zone					
allow to hunt in more than one zone					
use of shotgun with slug					
"bucks-only" hunting					
close season in some areas					

22. During the past 5 years, has the number of deer in the zone in which you hunt:

- _____ increased greatly
- _____ increased slightly
- _____ stayed about the same
- _____ decreased slightly
- _____ decreased greatly

23. Do you know of any deer killed illegally during the 1975 deer hunting season? (excluding rumor and newspaper accounts) If yes, how many?

- _____ yes
- _____ no
- _____ 1
- _____ 2-5
- _____ 6-10
- _____ more than 10

24. Do you know of any deer taken in calender 1975 other than during the legal deer hunting season? (excluding rumor and newspaper accounts) If yes, how many?

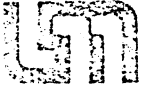
- | | | | |
|-------|-----|-------|--------------|
| _____ | yes | _____ | 1 |
| _____ | no | _____ | 2-5 |
| | | _____ | 6-10 |
| | | _____ | more than 10 |

25. What do you think makes for quality in a deer hunt?

	Very Important	Somewhat Important	Not Important
getting a deer			
few other hunters in woods			
seeing deer			
seeing abundant deer sign			
many days to hunt			
getting out in the woods			
companionship of the hunting group			

We would appreciate any additional comments you may wish to make:

THANK YOU VERY MUCH FOR YOUR HELP. PLEASE MAIL THE QUESTIONNAIRE BACK TO US IN THE ENVELOPE PROVIDED.



UNIVERSITY OF MINNESOTA
TWIN CITIES

Center for Urban and Regional Affairs
311 Walter Library
Minneapolis, Minnesota 55455

Dear Landowner:

The University of Minnesota has been asked by the Minnesota Department of Natural Resources to survey deer hunters and landowners concerning the deer hunting season. The Department of Natural Resources must make decisions, within the framework of good wildlife management, regarding deer hunting zones, dates of the deer hunting season, types of firearms to be used, and the number and sex of deer to be taken. These decisions must consider your rights as landowners and the needs of deer hunters. It is hoped that policies can be developed which will lead to increased landowner and hunter satisfaction.

In recent years, deer hunters have been able to choose their hunting zone and dates. The enclosed map shows these zones for 1975 and gives the various hunting regulations for each zone.

We would be very grateful if you would take a few minutes to complete the enclosed questionnaire and mail it back to us in the envelope provided. No postage is required.

You need not give your name on the questionnaire. The number on the questionnaire will be used only to mark its return on our mailing list. All of your replies are confidential.

Thank you very much for your help.

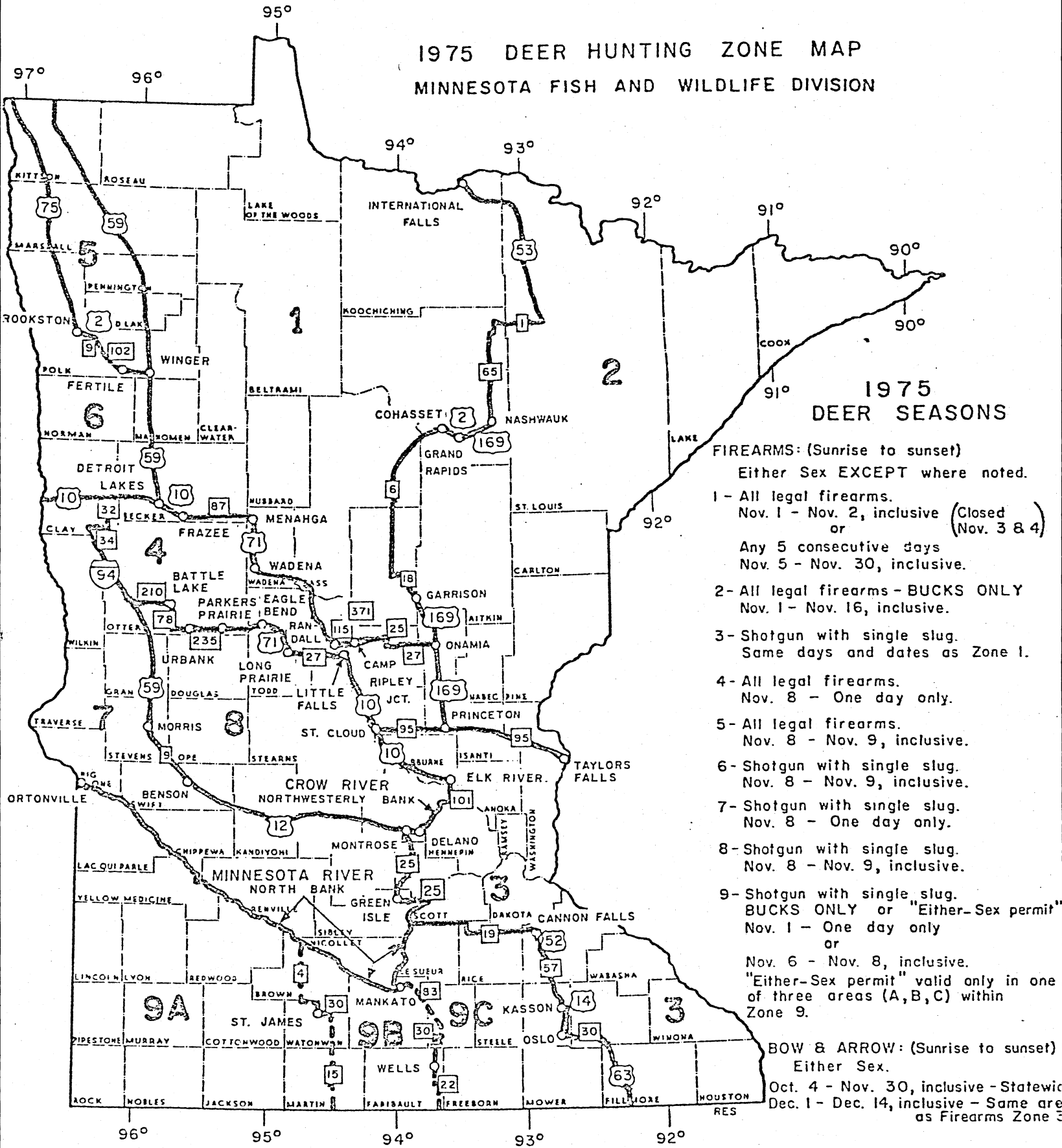
Sincerely,

A handwritten signature in cursive script that reads "William J. Craig".

William J. Craig
Assistant Director
Center for Urban and Regional Affairs
University of Minnesota

1975 DEER HUNTING ZONE MAP

MINNESOTA FISH AND WILDLIFE DIVISION



1975 DEER SEASONS

- FIREARMS:** (Sunrise to sunset)
Either Sex EXCEPT where noted.
- 1 - All legal firearms.
Nov. 1 - Nov. 2, inclusive (Closed Nov. 3 & 4)
or
Any 5 consecutive days
Nov. 5 - Nov. 30, inclusive.
 - 2 - All legal firearms - BUCKS ONLY
Nov. 1 - Nov. 16, inclusive.
 - 3 - Shotgun with single slug.
Same days and dates as Zone 1.
 - 4 - All legal firearms.
Nov. 8 - One day only.
 - 5 - All legal firearms.
Nov. 8 - Nov. 9, inclusive.
 - 6 - Shotgun with single slug.
Nov. 8 - Nov. 9, inclusive.
 - 7 - Shotgun with single slug.
Nov. 8 - One day only.
 - 8 - Shotgun with single slug.
Nov. 8 - Nov. 9, inclusive.
 - 9 - Shotgun with single slug.
BUCKS ONLY or "Either-Sex permit"
Nov. 1 - One day only
or
Nov. 6 - Nov. 8, inclusive.
"Either-Sex permit" valid only in one of three areas (A, B, C) within Zone 9.
- BOW & ARROW:** (Sunrise to sunset)
Either Sex.
Oct. 4 - Nov. 30, inclusive - Statewide
Dec. 1 - Dec. 14, inclusive - Same area as Firearms Zone 3

Replies to the following questions will help in the planning of future deer hunting season management policy. All questions concern only firearm deer hunting. Please complete this questionnaire even if you did not hunt deer in 1975.

The enclosed map shows 1975 Minnesota deer hunting zones and gives the different regulations for each zone. According to records, your home is located in Zone 9, where the 1975 deer hunting regulations were:

Deer hunters could choose to hunt EITHER Nov. 1 only OR Nov. 6 - Nov. 8, inclusive

Only shotguns with slugs were allowed

Deer hunters were allowed to hunt bucks anywhere in Zone 9 and could receive, if selected, a permit to hunt antlerless deer only in 1 of the 3 areas A,B,C in Zone 9

If you own or rent land in more than one deer hunting zone, please answer the following questions only with respect to your land in Zone 9.

1. What county do you live in?

- | | | | | |
|-------------------------------------|--|-----------------------------------|------------------------------------|--|
| <input type="checkbox"/> Blue Earth | <input type="checkbox"/> Fillmore | <input type="checkbox"/> Le Sueur | <input type="checkbox"/> Murray | <input type="checkbox"/> Rice |
| <input type="checkbox"/> Brown | <input type="checkbox"/> Freeborn | <input type="checkbox"/> Lincoln | <input type="checkbox"/> Nobles | <input type="checkbox"/> Rock |
| <input type="checkbox"/> Cottonwood | <input type="checkbox"/> Goodhue | <input type="checkbox"/> Lyon | <input type="checkbox"/> Olmstead | <input type="checkbox"/> Steele |
| <input type="checkbox"/> Dodge | <input type="checkbox"/> Jackson | <input type="checkbox"/> Martin | <input type="checkbox"/> Pipestone | <input type="checkbox"/> Waseca |
| <input type="checkbox"/> Faribault | <input type="checkbox"/> Lac Qui Parle | <input type="checkbox"/> Mower | <input type="checkbox"/> Redwood | <input type="checkbox"/> Watonwan |
| | | | | <input type="checkbox"/> Yellow Medicine |

2. In the last 4 years, have you had any arguments or personal conflicts with deer hunters on your land?

- Yes
 No

3. In the last 4 years, have deer hunters caused any damage on your land?

- Yes
 No

If "Yes", was the damage: Less than \$10
 \$10 to \$100
 More than \$100

4. Do you hunt deer?

- Yes
 No

5. Do any other members of your immediate family hunt deer?

- Yes
 No

6. How many acres of land do you operate in Zone 9?

- | <u>OWN</u> | <u>RENT FROM OTHERS</u> |
|--|--|
| <input type="checkbox"/> None | <input type="checkbox"/> None |
| <input type="checkbox"/> 1 to 40 acres | <input type="checkbox"/> 1 to 40 acres |
| <input type="checkbox"/> 41 to 160 acres | <input type="checkbox"/> 41 to 160 acres |
| <input type="checkbox"/> 161 to 320 acres | <input type="checkbox"/> 161 to 320 acres |
| <input type="checkbox"/> 321 to 640 acres | <input type="checkbox"/> 321 to 640 acres |
| <input type="checkbox"/> More than 640 acres | <input type="checkbox"/> More than 640 acres |

7. Please check all MAJOR enterprises included in your farming operations:

- | | |
|---|---|
| <input type="checkbox"/> Dairy cows | <input type="checkbox"/> Corn and soybeans |
| <input type="checkbox"/> Beef cows | <input type="checkbox"/> Wheat and other small grains |
| <input type="checkbox"/> Cattle feeding | <input type="checkbox"/> Sunflowers |
| <input type="checkbox"/> Hogs | <input type="checkbox"/> Sugar beets |
| <input type="checkbox"/> Poultry | <input type="checkbox"/> Alfalfa and other hay |
| <input type="checkbox"/> Sheep | <input type="checkbox"/> Potatoes |
| <input type="checkbox"/> Horses | <input type="checkbox"/> Other (Please specify) _____ |

8. Have any of the following resulted from deer hunting on your land?
(Please check any that apply)

- | | |
|---|---|
| <input type="checkbox"/> Injury or death to people | <input type="checkbox"/> Damage to fences |
| <input type="checkbox"/> Injury or death to livestock | <input type="checkbox"/> Damage to other property |
| <input type="checkbox"/> Injury or death to poultry | <input type="checkbox"/> Damage to crops |
| <input type="checkbox"/> Harassment of livestock or poultry | <input type="checkbox"/> Gates left open |
| <input type="checkbox"/> Damage to buildings | <input type="checkbox"/> Other (Please specify) _____ |

9. Do you allow deer hunting on your land? (Please check only one)

- Yes
 Only with permission
 No

10. Was your land posted for the 1975 deer hunting season?

- Yes
 No

11. Please check the appropriate box showing your opinion of each of the following deer season alternatives in the interests of protecting your land and providing opportunities for deer hunters:

	No Opinion	Strongly In Favor	Somewhat In Favor	Neutral	Somewhat Opposed	Strongly Opposed
Deer hunting regulations in your area should remain the same as they are now						
Longer deer hunting season in your area with designated dates for each hunter so that fewer people would be hunting at any one time						
Shorter deer hunting season in your area with little or no choice of hunting dates so that more hunters would be hunting at one time and the season would be over more quickly						
Allow only shotguns						
Permit use of rifles						
Allow buck hunting with quota on antlerless deer						
Limit number of deer hunters for your area by drawing						
Allow the taking of deer of either sex						

12. What do you feel is the ideal total length of the deer hunting season in the area in which your farm is located? (By "total length", it is meant the number of days that deer hunting goes on in your area.)

Number of days

13. What do you feel is the ideal time of year for the deer hunting season in the area in which your farm is located? (Please check only one)

Early November
 Mid-November
 Late November
 Early December

14. How many years during the past 4 have you had damage done to your crops or property by deer

None
 1
 2
 3
 4

15. During the last 4 years, what is the most damage done in any one year to your crops or property by deer?

None
 Less than \$10
 \$10 to \$100
 Over \$100

16. What do you estimate is the amount of your average annual loss from deer damage?

\$

17. Please respond to the following: (Please check only one)

Neither deer nor deer hunters damage crops or property
 Deer do more damage than deer hunters
 Damage about the same by deer and deer hunters
 Deer hunters do more damage than deer

18. Do you know of any deer killed illegally during the 1975 deer season (other than newspaper accounts or rumors)?

Yes
 No

If "Yes", how many?

19. Do you know of any deer taken in calendar year 1975 other than during the legal deer season (excluding newspaper accounts and rumors)?

Yes
 No

If "Yes", how many?

20. We would appreciate any additional comments you may wish to make:

THANK YOU VERY MUCH FOR YOUR HELP. PLEASE MAIL THE QUESTIONNAIRE BACK TO US IN THE ENVELOPE PROVIDED. NO POSTAGE IS REQUIRED. YOU NEED NOT GIVE YOUR NAME.

REFERENCES

1. Suchman, Edward A. and McCandless, Boyd, "Who Answers Questionnaires", Journal of Applied Psychology, XXIV, No. 6, (1940), p. 769.
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