STUDY OF DEER MANAGEMENT ON PRIVATE LANDS IN SOUTHEAST MINNESOTA

2013

Final Report

2013 SURVEY OF DEER MANAGEMENT ON PRIVATE LANDS IN SOUTHEAST MINNESOTA

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Executive Summary

The main purpose of this study was to understand private landowners' perspectives on crop damage, deer hunting and deer management, and land use patterns in southeastern Minnesota. This study sought to gather information from private landowners about their perceptions of deer hunting, deer regulations and management options in southeastern Minnesota. This survey also gathered information from landowners about posting and leasing their land for hunting.

We defined the population of interest as private landowners who owned a minimum of 40 acres. We identified all potential study participants (N = 6,090) through county property records of all rural property owners in Goodhue, Wabasha,Winona and Houston counties. We drew a stratified random sample (n = 4,193) from this census. The sample was stratified by region: north (Goodhue/Wabasha) and south (Houston/Winona), and three categories of number of acres owned: 40 to 79 acres, from 80 to 250 acres and more than 250 acres. All such property owners had an equal chance of being included in the study. Surveys were mailed to 4,193 private landowners within deer zone 3 in Goodhue, Wabasha, Winona and Houston counties in southeastern Minnesota. A total of 2,312 surveys were returned yielding an adjusted response rate of 59%. A non-response check indicated that respondents were slightly older (Mean = 60) on average than non-respondents (Mean = 57) and slightly more likely to be male (89%) than non-respondents (79%).

Crop damage in 2011

A majority of respondents who grew crops (62%) across the six strata reported experiencing deer damage to those crops on lands they owned or leased in 2011. A significantly greater proportion of respondents in the south owning more than 250 acres (85%) reported experiencing deer damage than respondents in other strata.

Among respondents who reported experiencing deer damage to crops in 2011, a majority (53%) reported negligible to minor deer damage. Among respondents who had farmed in 2011, a majority (58%) reported about the same amount of damage in 2011 as five years ago.

Overall, the total estimate reported by respondents of crop value lost to deer across all crop types was more than $3 million. Across the six strata, respondents reported more than $2.5 million in value was lost to the 187,134 acres of corn grown in 2011. Of the respondents who indicated that other species besides deer caused damage to crops in 2011, respondents across the strata most commonly attributed crop damage to raccoons (79%), followed by turkey (63%), gophers/woodchucks (41%) and small rodents (17%).

Opinions regarding hunting

A large majority of respondents (88%) allowed hunting on their property. Among respondents who allowed hunting on their property, respondents across the six strata most commonly provided hunting access to friends or neighbors (77%) and family members (74%).

Respondents were asked to indicate if they impose any deer harvest restrictions on their property. Among respondents who allow hunting on their property, two-thirds (66%) do not impose any deer harvest restrictions. The most common deer harvest restriction imposed was restricting buck harvest to large antlered bucks with no antlerless deer restrictions (20%), followed by restricting buck harvest to large antlered buck with restrictions on antlerless deer (5%) and restricting antlerless deer harvest with no restrictions on legal bucks (1%).

Respondents were asked about their decisions to allow other people to hunt deer on their property. More than two-thirds of respondents (68%) agreed that hunting is a tradition in their family and that hunting will keep deer from being overabundant (68%). A large majority of respondents (80%) disagreed with the statement "I am opposed to deer hunting in general."

Respondents were asked about their future decisions to allow other people to hunt deer on their property. Almost three-fourths of the respondents (72%) agreed that they would be more likely to allow or continue to allow other people to hunt deer on their property if hunters follow the rules they have for hunting on their property. A majority of respondents (71%) also agreed that they would be more likely to allow or continue to allow other people to hunt deer on their property if they knew that the hunters were safe and ethical.

Posting

Overall, a majority of respondents (60%) do not post their property. Respondents who posted their property were asked to rate a series of 11 reasons on a seven-point scale from strongly disagree (1) to strongly agree (7). Among respondents who post their property, controlling who uses their land (97%) was the top reason for posting (Mean=6.7). A large majority of respondents also agreed that eliminating trespass (93%), liability concerns (84%), human safety (83%) and reducing property damage (75%) were reasons for posting their property.

Leasing for deer hunting

Overall, a vast majority of respondents (96%) do not lease their property for deer hunting. Of those who lease their property to deer hunters, a majority (91%) agreed that having better control over who is using their land is a reason for leasing. A large majority also agreed that leasing allows them to earn extra income from their property (86%) and that they see leasing as the future way landowners can manage their property (77%).

Perceptions about the deer population

Respondents were asked to report deer population trends in the area of their property over the past five years on a three-point scale from more deer now than 5 years ago (1) to fewer deer now than 5 years ago (3). Overall, the greatest proportion of respondents (41%) indicated that the deer population in the area of their property is about the same number as 5 years ago.

Respondents were also asked to characterize deer population around their property and surrounding area as too high (1), about right (2) or too low (3). Overall, the greatest proportion of respondents (48%) indicated that deer population around their property and surrounding area was about right.

Respondents were asked to identify the level deer populations should be managed on their property and surrounding area on a seven-point scale from decrease 50% (1) to increase 50% (7). The greatest proportion of respondents (44%) in all six strata indicated that the level of deer population should not be changed.

Hunting experiences during 2011 deer hunting season

Overall, a majority of respondents (61%) reported hunting during any one of the 2009, 2010 or 2011 Minnesota deer seasons. Of the respondents who hunted during any of the seasons, the mean number of years hunted was 34 years.

Respondents were asked to indicate on a four-point scale from none (1) to all (4) how much of their hunting they did on four different types of land: private land that they own, private land they lease for hunting, private land that they do not own and public land. Among hunters, a large majority of respondents (85%) reported that they hunted on private land they own most to all of the time.

Respondents were also asked to report their level of satisfaction with their hunting experience in southeastern Minnesota after hunting under the antler point restriction regulations. The greatest proportion of respondents in all six strata reported no change in their level of satisfaction with their hunting experience.

Opinions regarding hunting regulations

Respondents were asked to indicate the extent to which they support or oppose regulations that would increase the proportion of antlered bucks in the deer area they hunt most often. Overall, a greater proportion of respondents (hunters and non-hunters) supported the regulation (39%) than opposed it (23%).

Respondents who hunted in any one of 2009, 2010 or 2011 Minnesota deer seasons were asked to report their level of support for regulations put in place prior to the 2010 deer season. Overall, a majority of respondents (51%) supported the regulations when they were announced before the 2010 deer season. Hunters were also asked to report change in support for antler point restrictions in southeastern Minnesota after hunting under the antler point restriction regulations. Response was on a seven-point scale from much less support (1) to much more support (7). Over 40% of respondents reported that they support the regulations slightly more to much more after hunting under the antler point restriction regulations.

All respondents were asked to report their level of support for continuation of the regulations that were enacted in 2010. Respondents were asked to report their level of support for four regulations: (i) keeping the 3A season at 9 days, (ii) continue the 4-point to one side antler point restriction, (iii) continue the prohibition of buck cross-tagging, and (iv) continuing the exemption of youth from the antler point restriction. The regulation exemption of youth from the antler point restriction garnered the most support from all respondents (57%). Overall, hunters supported the regulations to a greater extent than those who did not hunt in any one of the 2009, 2010 or 2011 Minnesota deer seasons.

Perceptions about deer management

Respondents were asked to report the extent to which they agreed or disagreed with statements regarding deer management. A large majority of respondents agreed that the Minnesota DNR should be responsible for talking to community members about managing deer populations (77%) and that the Minnesota DNR should be responsible for managing deer populations (65%).

Respondents were asked to rate the extent to which they agreed or disagreed with a series of 16 statements about land management, use of wildlife and their community. A vast majority of respondents (88%) agreed that it is acceptable for people to kill wildlife, if they think it poses a threat to their life. A large majority of respondents disagreed that hunting is inhumane and cruel to the animals (82%).

Respondents were asked to rank six strategies that could be implemented to lower the deer population. Overall, the greatest proportion of respondents (36%) ranked antler point restrictions as the most preferred strategy, while the greatest proportion of respondents ranked buck license lottery (53%) as the least preferred strategy.

Respondents were asked to rate the extent to which they agreed or disagreed with a series of five statements about localized special seasons to lower deer population in local areas. While 43% agreed that in general they support the idea of firearms hunts on private lands before or after the regular season, 39% disagreed with the statement. A majority of respondents disagreed that they would prefer such a season be before the regular firearm deer season in late summer (61%) or in early fall (52%).

Property characteristics and sociodemographics

A majority of respondents in all six strata were male (86% to 93%). Median income across the six strata ranged from $75,000 to $85,000. The mean age of respondents was 60. Overall, 45% of respondents have attended at least some college.

On average, the highest number of acres respondents across the six strata owned (159 acres) and leased (253 acres) were in row crops. Among the various types of land listed, the highest total acres respondents owned cumulatively was in row crops (262,364 acres), followed by woodlands (140,845 acres) and hay/pasture (88,421 acres).

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Introduction

The Minnesota Department of Natural Resources (MNDNR) has conducted several studies of hunter attitudes and acceptance of hunting regulations to assist the agency in designing regulations that achieve biological goals yet are socially acceptable. Although the agency has done extensive work in understanding the perspectives of deer hunters in southeastern Minnesota, the perspectives of private landowners around deer management issues have not been studied. Thus, private landowners' experiences, attitudes, and actions regarding deer hunting and land management in southeastern Minnesota are poorly understood. Yet, private landowners play a key role in controlling hunter access to deer populations. Understanding landowner perspectives will further assist the agency in designing hunting regulations and in developing landowner assistance programs in southeastern Minnesota.

Study Purpose and Objectives

The main purpose of this study was to understand private landowners' perspectives on deer hunting and deer management in southeastern Minnesota. This study gathered information from private landowners about their perceptions of deer hunting, deer regulations and management options in southeastern Minnesota. In addition, this survey also gathers information from landowners about farming practices, wildlife damage, posting and leasing their land for deer hunting.

The specific objectives of this study were to:

1. Determine the level of estimated crop damage due to deer and other species in southeastern Minnesota;
2. Determine private landowners' opinions about deer hunting including reasons for leasing property to hunters;
3. Determine private landowners' reasons for posting property;
4. Determine private landowners' opinions regarding local deer populations;
5. Describe land-owning hunters' deer hunting experiences in the 2011 deer hunting season including permit area hunted and the type of land hunted on;
6. Determine private landowners' and hunters' opinions regarding deer hunting regulations including support for the regulation changes that were implemented in 2010;
7. Determine private landowners' perceptions about deer management including their perspectives on strategies to lower deer population.

Methods

Sampling

The population of interest in this study included private landowners within the southeastern Minnesota counties of Goodhue, Wabasha, Winona and Houston who own a minimum of 40 acres in rural areas (Figure 1). The sampling frame (N = 6,090) was developed based on publicly available county property tax identification lists. A stratified random sample of landowners owning at least 40 acres within the four counties was drawn. The study sample was stratified by regions: north (Goodhue and Wabasha counties) and south (Winona and Houston counties), and three categories of the number of acres owned: from 40 to 79 ares, from 80 to 250 acres and more than 250 acres (Table I-1). This stratification resulted in six strata. The total sample size was 4,193.

Data Collection

Data were collected using a self-administered mail-back questionnaire based on an adapted Dillman's (2009) tailored design method. Participants were contacted multiple times to enhance response rates. Participants were contacted three times between October and January. Each questionnaire was labeled with a unique identification number (ID) and IDs were assigned to each individual landowner in the sample. In all the contacts, participants were mailed a personalized cover letter, survey questionnaire, and business-reply envelope. The personalized cover letter explained the purpose of the study and made an appeal to the participants to respond to the survey. Approximately five weeks after the first mailing, a second mailing was sent to all individuals who had not replied to the initial mailing. Approximately, two months after the first mailing, a third mailing that included another cover letter, a replacement questionnaire, and a business-reply envelope was sent to all individuals who had not yet replied. Returned surveys were collected through March, 2013.

In addition, a non-response study was also conducted. Potential respondents with a valid address who had not replied to the three waves of mailing were mailed a short version of the survey questionnaire in February, 2013.

Survey Instruments

The data collection instrument was an 11-page self-administered questionnaire (Appendix A). The questionnaire included a variety of fixed-choice, closed-ended questions and addressed the following topics:

- Property characteristics including acres owned and leased by type of land;
- Sociodemographic information including age, gender, income and education;
- Reasons for posting property and reasons for leasing property;
- Hunting experiences during 2009-2011 Minnesota deer hunting seasons including years hunted, number of deer hunted each year, hunting techniques used, the type of land hunted on, deer permit area hunted and satisfaction with past hunting experiences;
- Opinions about deer population, deer management and deer hunting regulations including season dates, preferred strategies to lower deer populations, trends in deer population, knowledge about deer management, support for antler point restriction regulations, and attitudes and beliefs about hunting and the use of wildlife;
- Crop damage attributed to deer and other species and estimates of acres and dollars lost to deer damage by type of crop.

Data Entry and Analysis

After completed questionnaires were returned and logged into a respondent database, data were coded and entered into a database using Microsoft Excel 2010. Basic descriptive statistics and inferential statistics including analysis of variance (ANOVA) and chi-square test of association were computed using the Statistical Program for the Social Sciences (SPSS 19).

Survey Response Rate

Of the 4,193 survey questionnaires mailed, 242 were undeliverable, sent to a deceased person or invalid. Of the remaining 3,951 surveys, a total of 2,312 were returned, yielding an adjusted response rate of 59%.

Nonresponse Check

We compared responses to the full-length survey (i.e., respondents) to those who respondended to a shortened survey (i.e., non-respondents, Appendix A) to gauge nonresponse bias. Non-respondents were mailed the survey in February, 2013. We found that respondents were generally older (Mean=60) than non-respondents (Mean=57, $F= 9.110$, $p<0.05$). A significantly greater proportion of respondents (89%) were male than non-respondents (79%) ($\chi^2=14.383$, $p<0.05$). There was no significant difference between respondents and non-respondents in their highest level of formal education. A significantly greater proportion of respondents (40.2%) than non-respondents (31.4%) post their property ($\chi^2= 5.560$, $p<0.05$).

A significantly greater proportion of non-respondents allow family ($\chi^2=32.020$, $p<0.05$), friends or neighbors ($\chi^2= 30.634$, $p<0.05$), strangers ($\chi^2= 70.623$, $p<0.05$), groups ($\chi^2 = 106.968$, $p<0.05$) and leasers ($\chi^2= 69.586$, $p<0.05$) to hunt on their property than respondents. A greater proportion of respondents (28.2%) also reported knowing "a great deal" about deer management in southeastern Minnesota than non-respondents (20.7%, $\chi^2= 9.290$, $p<0.05$).

There was no significant difference between respondents and non-respondents in the total number of acres owned at the end of 2011. Respondents and non-respondents did not differ on whether they hunted deer in Minnesota. There also were no significant differences between respondents and non-respondents in leasing, allowing hunting on their property, support for regulations, reported level of crop damage and perceptions about deer population.

Table I-1. Sample size by strata

Strata		Sample size	N*
North	Small (40 to 79 acres)	657	830
	Medium (80-250 acres)	763	1,551
	Large (more than 250 acres)	582	593
South	Small (40 to 79 acres)	675	795
	Medium (80-250 acres)	787	1,587
	Large (more than 250 acres)	732	734
Total		4,193	6,090

*All landowners in the study area excluding county/state owned properties.

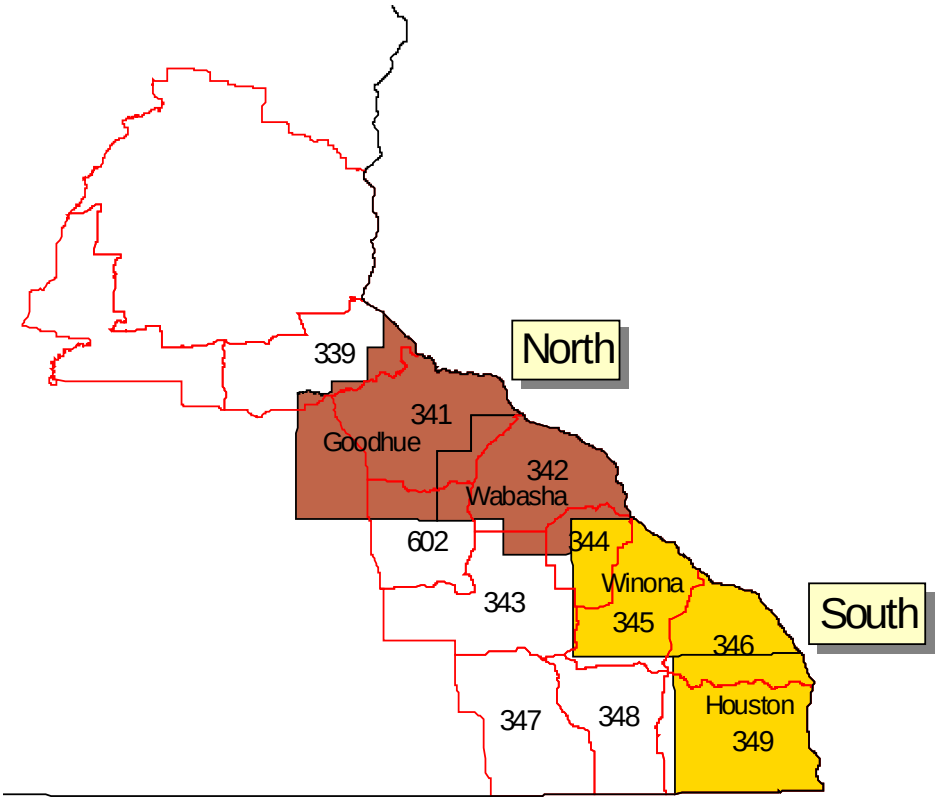

Figure 1. Southeastern Minnesota landowner survey study area showing north/south strata and deer permit areas.

Section 1: Crop damage in 2011

Findings:

Deer damage to crops in 2011

Respondents were asked to report if they experienced any deer damage to crops on lands that they owned or leased in 2011. They were also asked to describe the total amount of deer damage they experienced in 2011 and compare deer damage experienced in 2011 to deer damage 5 years ago.

A majority of respondents (62%) across the six strata reported experiencing deer damage to crops on lands they owned or leased in 2011. A significantly higher proportion of large landowners in the south (85%) reported experiencing deer damage than respondents in other strata (Table 1-1). Among respondents who reported experiencing deer damage to crops in 2011, a majority (53%) reported negligible to minor deer damage to crops. A significantly greater proportion of large landowners in the south reported severe deer damage (23%) than in any other stratum. A greater proportion of landowners in the north including small (11%), large (11%) and medium (11%) landowners reported negligible amount of deer damage than respondents in the south including small (6.7%), large (4.9%) and medium (8.9%) landowners (Table 1-2).

Respondents who grew crops in 2011 were asked to compare the amount of deer damage they experienced in 2011 to that they experienced 5 years ago. A majority (58%) reported about the same damage in 2011 as five years ago. The greatest proportion of respondents in all strata reported about the same damage in 2011 as 5 years ago (Table 1-3). A significantly greater proportion of large landowners in the south (17%) reported that they experienced much more damage in 2011 than 5 years ago than in the other strata. Overall, almost 40% of crop damage was attributed to deer. On average, large (Mean= 51) and medium (Mean=43) landowners in the south attributed significantly greater amount of crop damage to deer in 2011 than respondents in any other stratum (Table 1-4).

Estimated crop value lost to deer

Respondents were asked to estimate total acres grown, dollar value lost to deer damage and percentage of total crop value lost to deer for a variety of crops. Overall, the total estimate of crop value lost to deer by survey respondents across all types of crop was more than $3 million. The total estimate of acres respondents reported were affected by deer was 313,942 acres (Table 1-5). Overall, most acres grown were in corn followed by soybeans and alfalfa. The total amount of dollars lost was highest for corn followed by soybeans and alfalfa. Across the six strata, over $2.5 million was lost in 187,134 acres of corn grown in 2011. In terms of dollar value lost to deer damage, there were significant differences among the strata for corn and vegetables. For both these crops, large landowners in the south reported the highest dollar value loss to deer damage. Although the number of corn and soybean acres grown was highest among large landowners in the north, the amount of dollar value lost to deer was greatest among large landowners in the south (Tables 1-6, 1-7). There were no significant differences among the strata in the estimated percent of total crop value lost to deer damage for all crops (Tables 1-6 to 1-13). Very few

respondents reported acres grown in hay, tree fruits, grapes, stored forage, nursery products and vegetables (Tables 1-9 to 1-14). There were no significant differences among the strata in acres grown, dollar loss or percent value loss for tree fruits, grapes, stored forage and nursery products (Tables 1-10, 1-11, 1-12, 1-13).

Crop damage attributed to other species

Respondents were asked to indicate if other species besides deer caused damage to their crops in 2011. Of the respondents who indicated that other species besides deer caused damage to crops in 2011, the greatest proportion of respondents in all strata attributed crop damage to raccoons, followed by turkey, gophers/woodchucks and small rodents. Among large landowners in the south, 92% of respondents reported that raccoons caused damage to their crops in 2011, while 70% also attributed the damage to turkeys. Across the six strata, the lowest proportion of respondents attributed crop damage to geese (Table 1-15).

Section 1: Crop damage in 2011

Table 1-1: Deer damage to crops on lands owned or leased in 2011.

	Strata	N	Yes	No	Don't have crops
	All	2213	62.4%	26.8%	10.7%
North	Small	332	44.9%	39.2%	16.0%
	Medium	394	58.4%	33.5%	8.1%
	Large	320	75.6%	21.6%	2.8%
South	Small	361	47.1%	32.4%	20.5%
	Medium	417	62.6%	24.5%	12.9%
	Large	389	84.8%	11.3%	3.9%
		$\chi^2 = 220.773$*			

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant.

Table 1-2: Reported level deer damage experienced in 2011

	Strata	N	Negligible	Minor	Moderate	Severe
	All	1361	8.5%	44.2%	34.1%	13.2%
North	Small	148	10.8%	56.8%	22.3%	10.1%
	Medium	227	11.0%	52.4%	28.6%	7.9%
	Large	238	10.5%	47.5%	32.8%	9.2%
South	Small	165	6.7%	50.3%	30.9%	12.1%
	Medium	258	8.9%	38.8%	40.3%	12.0%
	Large	325	4.9%	31.7%	40.9%	22.5%
		$\chi^2 = 79.553$*				

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant.

Section 1: Crop damage in 2011

Table 1-3: Comparison of deer damage in 2011 to that experienced 5 years ago.

	Strata	N	Much less damage in 2011 than 5 years ago	Slightly less damage in 2011 than 5 years ago	About the same damage in 2011 as 5 years ago	Slightly more damage in 2011 than 5 years ago	Much more damage in 2011 than 5 years ago	Was not farming 5 years ago
	All	1804	6.6%	7.5%	57.6%	12.8%	9.7%	5.8%
North	Small	234	6.0%	3.4%	64.1%	9.0%	6.8%	10.7%
	Medium	328	5.8%	7.6%	62.2%	12.5%	7.6%	4.3%
	Large	287	4.5%	6.6%	67.9%	12.2%	7.7%	1.0%
South	Small	255	6.7%	10.2%	56.9%	7.5%	7.5%	11.4%
	Medium	343	8.2%	8.5%	53.6%	13.4%	9.3%	7.0%
	Large	357	7.8%	7.8%	45.1%	19.3%	17.1%	2.8%
		$\chi^2 = 120.392$*						

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant.

Table 1-4: Percent crop damage attributed to deer in 2011.

	Strata	N	Mean
	All	1756	38.5%
North	Small	229	32.0%
	Medium	328	31.5%
	Large	279	34.2%
South	Small	245	35.4%
	Medium	331	42.7%
	Large	344	51.1%
		F=20.381*	

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant; mean is based on a scale from 0 to 100%; *P≤ 0.05

Section 1: Crop damage in 2011

Table 1-5: Respondent estimate of total acres grown, dollar loss from deer damage to crop and estimated percent of total crop value lost to deer damage by type of crop.

Crop	Acres grown			Estimated dollar loss from deer damage to crop			Estimated percent of total crop value lost to deer damage	
	N	Total	Mean	N	Total ($)	Mean ($)	N	Mean (%)
Corn	1097	187,134	170.6	707	2,504,220	3,542.0	729	8.1
Soybeans	600	75,241	125.4	343	613,042	1,787.3	356	8.2
Alfalfa	572	41,231	72.1	245	359,186	1,466.1	261	8.5
Other hay	130	3,971	30.5	42	17,669	420.7	44	8.6
Tree fruits	47	279	5.9	17	7,540	443.5	25	25.5
Grapes	8	14	1.8	5	1,635	327.0	5	15.2
Stored forage	6	386	64.3	5	10,000	2,000.0	3	3.7
Nursery products	25	371	14.8	14	30,675	2,191.1	16	25.4
Vegetables	66	2,222	33.7	26	14,225	547.1	38	23.7
Other	78	3,093	39.7	41	29,966	730.9	45	45.6
Totals		**313,942**			**$3,588,158**			

Table 1-6: Respondent estimate of total acres grown, dollar loss from deer damage to crop and estimated percent of total crop value lost to deer damage: Corn.

	Strata	Acres grown		Estimated dollar loss from deer damage to crop		Estimated percent of total crop value lost to deer damage	
		N	Mean	n	Mean ($)	n	Mean (%)
	All	1097	170.6	707	3,542.0	729	8.1
North	Small	117	83.2	62	3,212	70	8.1
	Medium	204	183.0	123	3,403	125	6.3
	Large	199	287.8	130	3,223	132	6.8
South	Small	118	57.2	59	1,651	71	10.2
	Medium	209	79.7	133	2,558	144	8.6
	Large	250	237.5	200	5,148	187	9.0
		F= 12.201*		F= 2.730*		$F=0.740^{ns}$	

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant.

Section 1: Crop damage in 2011

Table 1-7: Respondent estimate of total acres grown, dollar loss from deer damage to crop and estimated percent of total crop value lost to deer damage: Soybeans.

	Strata	Acres grown		Estimated dollar loss from deer damage to crop		Estimated percent of total crop value lost to deer damage	
		N	Mean	n	Mean ($)	n	Mean (%)
	All	600	125.4	343	1787.3	356	8.2
North	Small	55	83.49	26	1,433	30	11.3
	Medium	120	107.26	63	1,235	65	6.5
South	Large	134	228.02	78	2,226	81	8.5
	Small	46	55.13	24	987	27	4.2
	Medium	110	53.28	59	1,341	59	8.6
	Large	135	139.45	93	2,383	94	9.2
		F= 4.659*		F= 1.401^{ns}		F=0.601^{ns}	

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant.

Table 1-8: Respondent estimate of total acres grown, dollar loss from deer damage to crop and estimated percent of total crop value lost to deer damage: Alfalfa.

	Strata	Acres grown		Estimated dollar loss from deer damage to crop		Estimated percent of total crop value lost to deer damage	
		N	Mean	n	Mean ($)	n	Mean (%)
	All	572	72.1	245	1466.1	261	8.5
North	Small	40	39.4	11	2399	16	19.0
	Medium	88	77.3	28	2363	28	7.1
	Large	106	89.6	41	1226	39	6.0
South	Small	61	31.3	29	537	34	10.8
	Medium	119	36.7	45	449	56	7.6
	Large	158	108.1	91	1984	88	7.8
		F= 11.726*		F= 1.377^{ns}		F=1.403^{ns}	

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant.

Table 1-9: Respondent estimate of total acres grown, dollar loss from deer damage to crop and estimated percent of total crop value lost to deer damage: Other hay.

	Strata	Acres grown		Estimated dollar loss from deer damage to crop		Estimated percent of total crop value lost to deer damage	
		N	Mean	n	Mean ($)	n	Mean (%)
	All	130	30.5	42	420.7	44	8.6
North	Small	15	15.3	3	1100	4	9.3
	Medium	16	21.9	5	122	6	5.8
	Large	22	54.7	9	208	7	3.9
South	Small	15	23.3	5	912	4	7.3
	Medium	30	27.9	9	314	8	9.6
	Large	32	31.3	11	409	15	11.6
		F= 5.178*		F= 1.480^{ns}		F=0.235^{ns}	

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant.

Table 1-10: Respondent estimate of total acres grown, dollar loss from deer damage to crop and estimated percent of total crop value lost to deer damage: Tree fruits.

	Strata	Acres grown		Estimated dollar loss from deer damage to crop		Estimated percent of total crop value lost to deer damage	
		N	Mean	n	Mean ($)	n	Mean (%)
	All	47	5.9	17	443.5	25	25.5
North	Small	13	5.4	4	398	6	35.2
	Medium	4	0.9	1	50	2	1.0
	Large	3	13.0	0	.	0	.
South	Small	10	2.6	5	680	6	29.7
	Medium	12	6.5	5	440	9	15.8
	Large	5	12.4	2	150	2	51.5
		F= 1.023^{ns}		F= 0.650^{ns}		F=1.330^{ns}	

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant.

Table 1-11: Respondent estimate of total acres grown, dollar loss from deer damage to crop and estimated percent of total crop value lost to deer damage: Grapes.

	Strata	Acres grown		Estimated dollar loss from deer damage to crop		Estimated percent of total crop value lost to deer damage	
		n	Mean	n	Mean ($)	n	Mean (%)
	All	8	1.8	5	327.0	5	15.2
North	Small	2	2.3	1	15	1	5.0
	Medium	1	1.0				
	Large						
South	Small	3	2.2	3	340	3	10.3
	Medium	2	1.1	1	600	1	40.0
	Large						
		$F= 0.159^{ns}$		$F= 0.517^{ns}$		$F=4.373^{ns}$	

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant.

Table 1-12: Respondent estimate of total acres grown, dollar loss from deer damage to crop and estimated percent of total crop value lost to deer damage: Stored forage.

	Strata	Acres grown		Estimated dollar loss from deer damage to crop		Estimated percent of total crop value lost to deer damage	
		n	Mean	n	Mean ($)	n	Mean (%)
North	All	6	64.3	5	2000.0	3	3.7
	Small	0		1	1000	1	0.05
	Medium	2	75.0	1	4000	0	
South	Large	1	25.0	1	1500	1	10
	Small	0		-			
	Medium	1	0.5	0	-	0	
	Large	2	105.0	2	1750	1	1.0
		$F= 0.316^{ns}$		$F= 0.573^{ns}$		F=NA	

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant; NA=not applicable (sample size is too small)

Section 1: Crop damage in 2011

Table 1-13: Respondent estimate of total acres grown, dollar loss from deer damage to crop and estimated percent of total crop value lost to deer damage: Nursery products.

	Strata	Acres grown		Estimated dollar loss from deer damage to crop		Estimated percent of total crop value lost to deer damage	
		N	Mean	n	Mean ($)	n	Mean (%)
North	All	25	14.8	14	2191.1	16	25.4
	Small	9	8.8	4	1575	5	27.2
	Medium	2	55.0	0		0	
South	Large	0		1	8000	0	
	Small	5	1.6	3	283	5	32.0
	Medium	6	7.0	5	2505	5	16.2
	Large	3	44.0	1	3000	1	30.0
		F= 2.758^{ns}		F= 0.999^{ns}		F=0.227^{ns}	

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant.

Table 1-14: Respondent estimate of total acres grown, dollar loss from deer damage to crop and estimated percent of total crop value lost to deer damage: Vegetables.

	Strata	Acres grown		Estimated dollar loss from deer damage to crop		Estimated percent of total crop value lost to deer damage	
		n	Mean	n	Mean ($)	n	Mean (%)
North	All	66	33.7	26	547.1	38	23.7
	Small	13	4.2	5	540	9	14.7
	Medium	10	51.3	3	633	6	2.7
South	Large	13	67.8	6	400	4	26.2
	Small	11	1.0	7	82	9	38.4
	Medium	11	13.9	4	163	7	39.4
	Large	8	76.3	1	6000	3	8.7
		F= 4.484*		F= 50.775*		F=1.488^{ns}	

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant.

Table 1-15: Other species that caused damage to crops in 2011.

	Strata	Raccoon	Turkey	Geese	Small rodents (mice, voles)	Gophers/ Woodchucks	Other
	All	79.3%	62.6%	2.3%	17.2%	40.6%	8.6%
North	Small	68.1%	58.5%	1.9%	23.2%	43.0%	68.1%
	Medium	70.4%	63.3%	3.5%	16.7%	46.0%	70.4%
	Large	81.5%	77.5%	4.0%	13.0%	44.6%	81.5%
South	Small	78.4%	43.7%	0.5%	24.8%	41.0%	78.4%
	Medium	80.1%	56.8%	1.3%	16.1%	34.7%	80.1%
	Large	91.7%	69.8%	2.0%	13.4%	36.2%	91.7%

Proportions based on the total number of respondents in each stratum who reported that other species caused damage to their crops in 2011.

Section 2: Opinions regarding hunting

Findings:

Hunting on property

Respondents were asked to indicate whether they allowed hunting on their property during the 2011 deer season. They were further asked to indicate if they allowed individuals or groups to hunt on their property and to estimate the number of people who hunted on their property in 2011.

A large majority of respondents (88%) allowed hunting on their property (Table 2-1). Among respondents who allow hunting on their property, the highest proportions of respondents across the six strata allow friends or neighbors (77%) and family members (74%) to hunt on their property (Table 2-2). A very low proportion of respondents (0.7-4.1%) across the six strata reported allowing specific groups affiliated with an organized hunting group to hunt on their property (Table 2-2). There were significant differences among the strata in the number of family members, friends or neighbors and strangers that responents allow to hunt on their property. On average, large landowners in the south allow a greater number of family members, friends or neighbors, and strangers who ask permission to hunt on their property than any other stratum. There were no significant differences among the strata in the number of people affiliated with organized hunting groups, people who lease property, and other individuals (Table 2-3).

Current harvest restrictions

Respondents were asked to indicate if they impose any deer harvest restrictions on their property. Among respondents who allow hunting on their property, more than two-thirds (66%) do not impose any restrictions on the type of deer that can be harvested (Table 2-4). The most common deer harvest restriction imposed was restricting buck harvest to large antlered bucks with no antlerless deer restrictions (20%), followed by restricting buck harvest to large antlered buck with restrictions on antlerless deer (5%) and restricting antlerless deer harvest with no restrictions on legal bucks (1%).

Opinions about allowing hunting on property

Respondents were asked about their decisions to allow other people to hunt deer on their property. Respondents were asked to rate the extent to which they agree or disagree with a series of statements on a seven-point scale from strongly disagree (1) to strongly agree (7). More than two-thirds of respondents agreed that hunting is a tradition in their family (68%) and that hunting will keep deer from being over-abundant in their area (68%). A majority of respondents agreed that they are concerned about the liability of other hunters on their property (64%). A majority of respondents also agreed that hunting will reduce the number of deer on their property (60%) and that hunting reduces damage caused by deer on their property (58%). Although a majority of respondents (54%) agreed that letting others hunt on their property encourages a hunting tradition, almost one-third of respondents (31%) neither agreed nor disagreed with the statement.

Similarly, a high proportion of respondents (43%) were also unsure whether hunting improves the quality of habitat on their property. A large majority of respondents (80%) disagreed with the statement "I am opposed to deer hunting in general" (Table 2-5).

There were significant differences among respondents from the six strata in their opinions about hunting. On average, small and medium landowners in the south (Mean=5.5) agreed to a greater extent than respondents in other strata that hunting is a tradition in their family (Table 2-6). Large landowners in the south agreed to a greater extent that allowing hunting on their property will help keep deer from being over-abundant in the area (Mean=5.3, Table 2-7), hunting will reduce the number of deer on their property (Mean=5.0, Table 2-8) and that hunting reduces the amount of damage caused by deer on their property (Mean=5.3, Table 2-9). Large landowners in the south (Mean=4.9) agreed to a greater extent than respondents in other strata that letting others hunt on their property encourages a hunting tradition (Table 2-10). On an average, medium landowners in the south had neutral opinions about whether allowing other hunters on their property will reduce their or their family's opportunity to hunt deer (Table 2-11). Similarly, the greatest proportion of respondents in all six strata reported that they neither agreed nor disagreed that hunters cause too many problems (Table 2-12). Respondents across the six strata also generally disagreed or were neutral on whether hunting put their livestock at risk (Table 2-13). Large landowners in the south disagreed to a greater extent than respondents in other strata that they are opposed to deer hunting in general (Mean=1.6, Table 2-15) or that they want to provide a refuge for deer (Mean=3.0, Table 2-14).

Future decisions about allowing hunting on property

Respondents were asked about their future decisions to allow other people to hunt deer on their property by rating the extent to which they agree or disagree with a series of six statements on a seven-point scale from strongly disagree (1) to strongly agree (7). Almost three-fourths of the respondents (72%) agreed that they would be more likely to allow or continue to allow other people to hunt deer on their property if they follow the rules they have for hunting on their property. A majority of respondents (71%) also agreed that they would be more likely to allow or continue to allow other people to hunt deer on their property, if they knew that they were safe and ethical hunters. The greatest proportion of respondents neither agreed nor disagreed that they would be more likely to allow or continue to allow other people to hunt deer on their property, if they felt like they were interested in getting to know them and understanding what they're trying to do on their property. Most respondents either disagreed or were neutral on whether they would be more likely to allow or continue to allow other people to deer hunt on their property if (i) hunters would help them out by working on the property, (ii) the hunters or an outfitter would pay them in order to hunt, and (iii) the Minnesota DNR would pay them to allow others to hunt (Table 2-16).

There were significant differences among respondents in the six strata in their level of agreement or disagreement about future decisions to allow other people to hunt deer on their property. Large landowners in the north and south agreed to a greater extent than respondents in other strata that they would be more likely to allow or continue to allow other people to hunt deer on their property, if the hunters follow their hunting rules (Mean=5.7, Table 2-17). Overall, respondents in all six strata neither agreed nor disagreed that they would be more likely to allow or continue to allow other people to hunt on their property if they felt like the hunters were

interested in getting to know them and understanding what they're trying to do on their property (Mean=4.0, Table 2-18). Respondents in all six strata generally disagreed that they would be more likely to allow hunting on their property, if the hunters helped them out by working on their property, the hunters or an outfitter would pay them to hunt, or the Minnesota DNR would pay them to allow others to hunt (Tables 2-19, 2-20, 2-21).

Section 2: Opinions regarding hunting

Table 2-1: Respondents who allow hunting on their property.

	Strata	n	Yes	No
	All	2232	87.5%	12.5%
North	Small	337	79.8%	20.2%
	Medium	394	84.3%	15.7%
	Large	319	90.0%	10.0%
South	Small	369	86.2%	13.8%
	Medium	422	87.9%	12.1%
	Large	391	95.9%	4.1%
		χ^2=49.485*		

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant.

Table 2-2: Proportion of individuals or groups that respondents allow to hunt on their property.

	Strata	Myself and family members	Friends or neighbors	Strangers who ask permission	Specific groups of people who are affiliated with an organized hunting group	People who lease my property	Other
	All	73.9%	76.9%	20.8%	1.9%	5.7%	2.4%
North	Small	71.8%	74.9%	9.8%	0.8%	4.3%	1.2%
	Medium	69.7%	73.5%	21.1%	0.9%	4.4%	3.2%
	Large	73.6%	77.6%	28.5%	1.1%	9.7%	1.8%
South	Small	78.0%	71.1%	13.8%	0.7%	3.9%	1.3%
	Medium	74.8%	79.6%	18.4%	3.1%	5.7%	2.8%
	Large	75.1%	83.3%	31.0%	4.1%	6.4%	3.8%

Proportions based on the total number of respondents in each stratum who reported allowing any one of the individuals or groups to hunt on their property.

Section 2: Opinions regarding hunting

Table 2-3: Average number of individuals or groups that that respondents allow to hunt on their property.

	Strata	Number of family members		Number of friend or neighbors		Number of strangers who ask permission		Number of specific groups of people affiliated with an organized hunting group		Number of people who lease my property		Number of others	
		N	Mean	n	Mean	n	Mean	n	Mean	n	Mean	n	Mean
	All	1240	4.5	1274	6.0	320	4.0	30	9.6	90	4.0	35	10.2
North	Small	164	3.4	170	3.9	16	1.9	2	6.5	10	3.8	3	2.0
	Medium	204	4.4	213	5.5	61	3.7	2	5.5	10	4.0	7	10.1
	Large	179	5.1	193	7.1	63	3.8	2	7.0	19	3.9	3	9.3
South	Small	217	3.9	193	4.1	31	2.3	2	9.0	12	3.0	3	1.7
	Medium	233	4.6	238	6.4	56	3.7	8	10.9	19	3.3	7	5.1
	Large	243	5.3	267	8.1	93	5.5	14	10.3	20	5.6	12	17.6
		$F=0.666^{ns}$											

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant.

Table 2-4: Current deer harvest restrictions on property.

	Strata	Antlerless harvest is restricted but hunters can take any legal buck	Buck harvest is restricted to only large antlered bucks, but hunters can take any antlerless deer	Buck harvest restricted to only large antlered buck and antlerless harvest is also restricted	No restrictions on the type of deer that can be harvested	Other	Don't know
	All	1.1%	19.9%	4.6%	66.3%	4.9%	3.1%
North	Small	1.2%	16.8%	2.3%	71.1%	6.3%	2.3%
	Medium	0.6%	12.7%	5.2%	73.1%	4.5%	3.9%
	Large	1.8%	15.8%	4.4%	69.6%	4.4%	4.0%
South	Small	2.0%	25.9%	6.2%	56.4%	5.9%	3.6%
	Medium	0.9%	23.9%	4.6%	63.5%	3.7%	3.4%
	Large	0.3%	22.6%	4.5%	65.8%	5.1%	1.7%

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; proportions based on the total number of respondents in each stratum who reported allowing hunting on their property during the 2011 deer season.

Section 2: Opinions regarding hunting

Table 2-5: Respondents' opinions about allowing or not allowing hunting on their property.

	N	Mean	F	Strongly disagree	Moderately disagree	Slightly disagree	Neither	Slightly agree	Moderately agree	Strongly agree
Hunting is a tradition in my family	2175	5.28	4.285*	10.6	3.4	1.7	16.4	9.8	15.7	42.4
Hunting on my property will help keep deer from being over-abundant in the area	2186	4.99	7.317*	6.6	4.4	4.3	17.5	23.6	22.8	20.8
I am concerned about the liability of other hunters on my property	2157	4.86	1.332^{ns}	8.2	6.3	4.0	17.9	22.3	18.9	22.3
Hunting will reduce the number of deer in my property	2194	4.80	3.236*	8.0	6.8	4.5	20.6	19.7	18.9	21.5
Hunting reduces damage caused by deer on my property	2169	4.69	16.615*	9.6	5.3	4.2	22.8	21.6	18.3	18.2
Letting others hunt on my property encourages a hunting tradition	2154	4.68	2.695*	7.6	3.3	4.0	31.2	20.8	18.3	14.7
Allowing other hunters on my property will reduce my or my family's opportunity to hunt deer	2181	4.53	2.368*	13.0	6.6	5.7	23.3	14.0	15.4	22.0
Hunting will reduce the number of mature bucks on my property	2202	4.28	1.008^{ns}	12.8	7.1	5.9	29.7	17.2	12.7	14.6
Hunting improves the quality of habitat on my property	2158	4.08	.395^{ns}	10.3	7.0	5.9	43.1	16.2	10.0	7.5
Hunters cause too many problems	2088	3.98	3.946*	15.7	12.1	6.1	23.2	21.3	10.3	11.3
Hunting reduces my privacy	2108	3.92	.703^{ns}	19.5	9.6	5.3	24.4	18.9	11.1	11.1
Hunting puts my livestock at risk	2152	3.61	4.742*	23.3	8.7	4.8	32.4	16.1	7.2	7.4
I am not opposed to hunting, but I want to provide a refuge for deer	2170	3.44	9.047*	29.2	8.3	4.8	27.6	14.4	8.2	7.4
I feel pressure from my neighbors to allow hunting	2187	2.83	1.813^{ns}	40.2	8.8	3.6	32.1	8.3	4.2	2.7
I am opposed to deer hunting in general	2165	1.80	4.992*	70.2	7.6	2.7	15.7	1.2	.8	1.8

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant.; means based on a 7-point scale from strongly disagree (1) to strongly agree (7).

Section 2: Opinions regarding hunting

Table 2-6: Agreement or disagreement with the statement: Hunting is a tradition in my family.

	Strata	N	Mean	Strongly disagree	Moderately disagree	Slightly disagree	Neither	Slightly agree	Moderately agree	Strongly agree
North	Small	333	5.3	9.9%	3.3%	0.9%	20.1%	8.7%	15.9%	41.1%
	Medium	377	5.0	12.7%	5.0%	2.7%	18.0%	10.1%	13.3%	38.2%
	Large	314	5.0	10.5%	4.1%	0.6%	23.2%	13.1%	15.6%	32.8%
South	Small	361	5.5	10.2%	2.5%	1.7%	13.6%	7.8%	14.7%	49.6%
	Medium	412	5.5	8.3%	2.7%	2.9%	13.3%	9.7%	18.0%	45.1%
	Large	378	5.4	12.2%	2.6%	1.1%	11.9%	9.8%	16.4%	46.0%
		F=4.285*								

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant; means based on a 7-point scale from strongly disagree (1) to strongly agree (7).

Table 2-7: Agreement or disagreement with the statement: Hunting on my property will help keep deer from being over-abundant in the area.

	Strata	N	Mean	Strongly disagree	Moderately disagree	Slightly disagree	Neither	Slightly agree	Moderately agree	Strongly agree
North	Small	330	4.6	9.1%	5.8%	3.9%	21.5%	25.5%	21.5%	12.7%
	Medium	384	4.8	6.3%	4.9%	5.7%	21.6%	22.1%	22.9%	16.4%
	Large	312	5.1	5.4%	5.1%	3.5%	15.7%	26.0%	23.4%	20.8%
South	Small	361	4.9	9.1%	2.8%	3.3%	19.7%	24.1%	23.3%	17.7%
	Medium	414	5.2	5.6%	3.6%	4.6%	15.0%	21.0%	24.9%	25.4%
	Large	385	5.3	4.7%	4.7%	4.2%	11.9%	23.9%	20.8%	29.9%
		F=7.317*								

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant; means based on a 7-point scale from strongly disagree (1) to strongly agree (7).

Section 2: Opinions regarding hunting

Table 2-8: Agreement or disagreement with the statement: Hunting will reduce the number of deer on my property.

	Strata	N	Mean	Strongly disagree	Moderately disagree	Slightly disagree	Neither	Slightly agree	Moderately agree	Strongly agree
North	Small	334	4.5	8.7%	8.4%	6.3%	25.7%	19.2%	18.0%	13.8%
	Medium	380	4.7	7.6%	6.8%	4.5%	24.5%	17.4%	19.5%	19.7%
	Large	318	4.8	8.2%	6.6%	3.8%	20.4%	19.8%	18.6%	22.6%
South	Small	361	4.9	7.2%	6.1%	4.7%	19.7%	20.8%	19.7%	21.9%
	Medium	420	4.9	8.1%	7.6%	4.5%	17.1%	21.0%	17.4%	24.3%
	Large	381	5.0	8.1%	5.5%	3.4%	17.1%	19.9%	20.5%	25.5%
		F=3.236*								

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant; meansbebased on a 7-point scale from strongly disagree (1) to strongly agree (7).

Table 2-9: Agreement or disagreement with the statement: Hunting reduces damage caused by deer on my property.

	Strata	N	Mean	Strongly disagree	Moderately disagree	Slightly disagree	Neither	Slightly agree	Moderately agree	Strongly agree
North	Small	329	4.2	13.4%	8.8%	4.0%	27.7%	21.3%	14.6%	10.3%
	Medium	382	4.5	8.9%	7.9%	4.7%	27.5%	18.8%	17.8%	14.4%
	Large	312	4.7	9.9%	4.5%	3.5%	21.2%	23.4%	18.9%	18.6%
South	Small	358	4.4	12.3%	5.3%	4.7%	26.0%	19.8%	19.0%	12.8%
	Medium	409	4.9	7.8%	4.2%	5.6%	19.3%	22.7%	17.6%	22.7%
	Large	379	5.3	6.3%	1.6%	2.6%	16.1%	23.5%	21.4%	28.5%
		F=16.615*								

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant; means based on a 7-point scale from strongly disagree (1) to strongly agree (7).

Section 2: Opinions regarding hunting

Table 2-10: Agreement or disagreement with the statement: Letting others hunt on my property encourages a hunting tradition.

	Strata	N	Mean	Strongly disagree	Moderately disagree	Slightly disagree	Neither	Slightly agree	Moderately agree	Strongly agree
North	Small	328	4.5	8.8%	2.1%	4.9%	36.6%	21.3%	15.5%	10.7%
	Medium	374	4.6	8.0%	3.2%	5.6%	31.6%	19.8%	17.1%	14.7%
	Large	306	4.7	5.6%	4.2%	4.6%	32.7%	23.2%	17.3%	12.4%
South	Small	357	4.7	8.1%	4.2%	3.9%	29.1%	20.7%	16.5%	17.4%
	Medium	410	4.7	8.5%	4.1%	3.2%	29.8%	20.0%	18.8%	15.6%
	Large	379	4.9	6.3%	2.1%	2.4%	28.2%	20.6%	24.0%	16.4%
		F=2.695*								

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant; means based on a 7-point scale from strongly disagree (1) to strongly agree (7).

Table 2-11: Agreement or disagreement with the statement: Allowing other hunters on my property will reduce my or my family's opportunity to hunt deer.

	Strata	N	Mean	Strongly disagree	Moderately disagree	Slightly disagree	Neither	Slightly agree	Moderately agree	Strongly agree
North	Small	328	4.6	10.7%	5.5%	4.0%	30.2%	12.5%	15.5%	21.6%
	Medium	379	4.4	15.3%	6.9%	8.2%	22.2%	11.1%	15.6%	20.8%
	Large	313	4.4	11.8%	8.0%	4.8%	27.5%	15.0%	14.7%	18.2%
South	Small	363	4.7	11.8%	6.6%	4.4%	20.1%	13.5%	17.6%	25.9%
	Medium	417	4.7	12.2%	6.5%	6.2%	19.9%	14.6%	15.8%	24.7%
	Large	381	4.4	15.7%	6.3%	6.0%	22.0%	17.3%	12.9%	19.7%
		F=2.368*								

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant; means based on a 7-point scale from strongly disagree (1) to strongly agree (7).

Section 2: Opinions regarding hunting

Table 2-12: Agreement or disagreement with the statement: Hunters cause too many problems.

	Strata	N	Mean	Strongly disagree	Moderately disagree	Slightly disagree	Neither	Slightly agree	Moderately agree	Strongly agree
North	Small	316	3.9	16.8%	12.0%	6.6%	23.4%	20.3%	10.4%	10.4%
	Medium	366	3.9	16.1%	13.9%	6.8%	24.0%	18.6%	8.7%	11.7%
	Large	300	4.4	11.7%	7.3%	4.3%	22.0%	28.3%	13.3%	13.0%
South	Small	348	3.8	18.1%	11.2%	8.3%	25.9%	18.4%	8.6%	9.5%
	Medium	395	4.0	16.2%	12.7%	6.1%	20.8%	20.3%	11.9%	12.2%
	Large	363	4.0	14.9%	14.6%	4.1%	23.1%	23.1%	9.1%	11.0%
		F=3.946*								

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant; means based on a 7-point scale from strongly disagree (1) to strongly agree (7).

Table 2-13: Agreement or disagreement with the statement: Hunting puts my livestock at risk.

	Strata	N	Mean	Strongly disagree	Moderately disagree	Slightly disagree	Neither	Slightly agree	Moderately agree	Strongly agree
North	Small	324	3.6	24.7%	6.2%	4.3%	38.9%	13.3%	4.0%	8.6%
	Medium	377	3.8	19.9%	10.1%	5.3%	30.0%	18.0%	7.7%	9.0%
	Large	310	3.9	17.1%	10.0%	7.1%	27.7%	17.1%	11.9%	9.0%
South	Small	354	3.3	30.5%	8.2%	2.5%	37.3%	11.3%	5.6%	4.5%
	Medium	409	3.5	24.4%	8.6%	5.1%	33.7%	14.7%	5.9%	7.6%
	Large	378	3.7	22.5%	9.3%	4.8%	27.0%	22.0%	8.7%	5.8%
		F=4.742*								

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant; means based on a 7-point scale from strongly disagree (1) to strongly agree (7).

Section 2: Opinions regarding hunting

Table 2-14: Agreement or disagreement with the statement: <u>I am not opposed to hunting, but I want to provide a refuge for deer.</u>

	Strata	N	Mean	Strongly disagree	Moderately disagree	Slightly disagree	Neither	Slightly agree	Moderately agree	Strongly agree
North	Small	327	3.9	21.7%	5.8%	4.0%	28.4%	18.0%	11.9%	10.1%
	Medium	380	3.4	26.8%	8.9%	6.8%	28.4%	14.7%	7.6%	6.6%
	Large	311	3.5	26.4%	9.6%	3.5%	28.3%	17.7%	7.4%	7.1%
South	Small	362	3.6	23.2%	10.8%	5.2%	29.0%	14.4%	9.7%	7.7%
	Medium	413	3.3	34.9%	6.1%	4.6%	28.3%	11.9%	7.3%	7.0%
	Large	377	3.0	40.1%	8.8%	4.5%	23.1%	11.1%	6.1%	6.4%
		F=9.047*								

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant; means based on a 7-point scale from strongly disagree (1) to strongly agree (7).

Table 2-15: Agreement or disagreement with the statement: <u>I am opposed to deer hunting in general.</u>

	Strata	N	Mean	Strongly disagree	Moderately disagree	Slightly disagree	Neither	Slightly agree	Moderately agree	Strongly agree
North	Small	328	1.9	66.8%	6.4%	2.7%	18.6%	2.7%	1.8%	0.9%
	Medium	383	1.9	66.8%	7.6%	3.4%	17.0%	1.0%	0.8%	3.4%
	Large	309	2.0	61.2%	12.6%	2.9%	18.8%	1.3%	1.3%	1.9%
South	Small	359	1.7	73.5%	6.7%	3.1%	13.6%	1.4%	0.6%	1.1%
	Medium	407	1.7	74.0%	6.4%	1.7%	14.7%	1.0%	0.5%	1.7%
	Large	379	1.6	76.8%	6.6%	2.6%	12.4%	0.3%	0.0%	1.3%
		F=4.992*								

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant; means based on a 7-point scale from strongly disagree (1) to strongly agree (7).

Section 2: Opinions regarding hunting

Table 2-16: Future decisions about allowing hunting on property.

	N	Mean	F	Strongly disagree	Moderately disagree	Slightly disagree	Neither	Slightly agree	Moderately agree	Strongly agree
They follow the rules I have for hunting on my property	2168	5.42	5.319*	7.7	1.8	1.2	16.8	14.1	19.5	38.8
I knew that they were safe and ethical hunters	2165	5.25	1.933^{ns}	7.8	2.3	1.7	17.4	17.4	22.8	30.6
I felt like they were interested in getting to know me and understanding what I'm trying to do on my property	2157	4.00	3.738*	16.1	6.3	4.5	36.0	17.7	11.4	8.2
The hunters would help me out by working on the property	2167	3.73	2.424*	23.3	7.6	4.1	31.7	14.4	8.8	10.1
The hunters or an outfitter would pay me in order to hunt	2160	3.31	3.150*	30.2	8.4	4.9	33.2	10.7	5.6	6.9
The Minnesota DNR would pay me to allow others to hunt	2163	3.12	3.139*	36.0	8.1	5.2	30.3	7.4	4.6	8.3

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant; means based on a 7-point scale from strongly disagree (1) to strongly agree (7).

Table 2-17: Agreement or disagreement with the statement: <u>They follow the rules I have for hunting on my property.</u>

	Strata	N	Mean	Strongly disagree	Moderately disagree	Slightly disagree	Neither	Slightly agree	Moderately agree	Strongly agree
North	Small	329	5.1	10.3%	3.3%	0.6%	20.4%	14.0%	17.6%	33.7%
	Medium	379	5.3	7.4%	2.1%	2.1%	19.3%	14.0%	22.4%	32.7%
	Large	313	5.7	5.8%	1.6%	1.0%	12.8%	12.1%	23.3%	43.5%
South	Small	359	5.4	8.6%	2.8%	0.8%	16.4%	15.3%	14.8%	41.2%
	Medium	409	5.4	8.3%	1.2%	1.0%	18.6%	13.9%	19.1%	37.9%
	Large	379	5.7	6.1%		1.8%	12.9%	14.8%	20.1%	44.3%
		F=5.319*								

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant; means based on a 7-point scale from strongly disagree (1) to strongly agree (7).

Section 2: Opinions regarding hunting

Table 2-18: Agreement or disagreement with the statement: I felt like they were interested in getting to know me and understanding what I'm trying to do on my property.

	Strata	N	Mean	Strongly disagree	Moderately disagree	Slightly disagree	Neither	Slightly agree	Moderately agree	Strongly agree
North	Small	327	3.8	18.0%	7.0%	4.6%	39.4%	17.4%	7.6%	5.8%
	Medium	377	3.9	15.6%	8.2%	4.5%	38.2%	15.6%	10.9%	6.9%
	Large	308	4.1	14.9%	5.2%	3.6%	33.8%	22.1%	11.7%	8.8%
South	Small	359	3.9	17.8%	6.4%	6.1%	35.1%	15.3%	8.6%	10.6%
	Medium	411	4.0	18.0%	6.1%	2.2%	36.7%	15.8%	14.4%	6.8%
	Large	375	4.3	12.0%	4.5%	6.1%	32.5%	20.5%	14.1%	10.1%
		F=3.738*								

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant; means based on a 7-point scale from strongly disagree (1) to strongly agree (7).

Table 2-19: Agreement or disagreement with the statement: The hunters would help me out by working on the property.

	Strata	N	Mean	Strongly disagree	Moderately disagree	Slightly disagree	Neither	Slightly agree	Moderately agree	Strongly agree
North	Small	330	3.5	26.1%	7.0%	2.7%	36.4%	14.8%	5.2%	7.9%
	Medium	376	3.7	22.3%	7.7%	5.9%	34.8%	12.8%	8.2%	8.2%
	Large	311	3.7	25.1%	6.1%	5.1%	27.3%	17.0%	9.6%	
South	Small	361	3.7	22.7%	9.1%	4.4%	29.9%	14.4%	9.4%	10.0%
	Medium	411	3.7	23.8%	7.3%	3.2%	33.8%	12.9%	9.5%	9.5%
	Large	378	4.0	20.1%	8.2%	3.2%	27.5%	15.3%	10.6%	15.1%
		F=2.424*								

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant; means based on a 7-point scale from strongly disagree (1) to strongly agree (7).

Section 2: Opinions regarding hunting

Table 2-20: Agreement or disagreement with the statement: The hunters or an outfitter would pay me in order to hunt.

	Strata	N	Mean	Strongly disagree	Moderately disagree	Slightly disagree	Neither	Slightly agree	Moderately agree	Strongly agree
North	Small	331	3.1	31.1%	8.2%	6.3%	37.8%	8.8%	2.4%	5.4%
	Medium	376	3.3	29.0%	10.4%	5.1%	31.1%	12.2%	5.3%	6.9%
	Large	307	3.4	28.0%	9.8%	4.9%	31.6%	9.1%	7.5%	9.1%
South	Small	359	3.2	33.4%	8.9%	3.3%	32.6%	9.7%	6.1%	5.8%
	Medium	411	3.2	32.4%	6.8%	5.6%	35.0%	9.7%	5.8%	4.6%
	Large	376	3.6	26.9%	6.9%	4.0%	31.4%	14.1%	6.6%	10.1%
		F=3.150*								

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant; means based on a 7-point scale from strongly disagree (1) to strongly agree (7).

Table 2-21: Agreement or disagreement with the statement: The Minnesota DNR would pay me to allow others to hunt.

	Strata	N	Mean	Strongly disagree	Moderately disagree	Slightly disagree	Neither	Slightly agree	Moderately agree	Strongly agree
North	Small	331	3.1	35.3%	9.1%	5.7%	31.1%	8.8%	2.7%	7.3%
	Medium	374	3.2	32.9%	10.4%	7.0%	28.6%	7.2%	5.9%	8.0%
	Large	311	3.3	34.1%	7.7%	4.5%	31.5%	6.4%	5.5%	10.3%
South	Small	359	2.8	41.2%	8.6%	5.0%	30.1%	4.5%	5.6%	5.0%
	Medium	410	3.0	38.0%	7.8%	3.9%	31.2%	8.3%	3.4%	7.3%
	Large	378	3.4	34.1%	5.3%	5.3%	29.4%	9.3%	4.8%	11.9%
		F=3.139*								

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant; means based on a 7-point scale from strongly disagree (1) to strongly agree (7).

Section 3: Posting

Findings:

Reasons for posting property

Respondents were asked to indicate whether they posted their property and to identify the reasons for posting their property.

Overall, a majority of respondents (60%) do not post their property. A significantly greater proportion of small landowners in the south (51%) post their property than respondents in any other stratum. The lowest proportions of respondents who post their property were medium landowners in the north (32%, Table 3-1). Respondents who post their property were asked to rate a series of 11 reasons on a seven-point scale from strongly disagree (1) to strongly agree (7). Among respondents who post their property, controlling who uses their land is the top reason (Mean=6.72, Table 3-2). A vast majority of respondents (97%) agreed that controlling who uses their land is a reason for posting their property. A large majority of respondents also agreed that eliminating trespass (93%), liability concerns (84%), human safety (83%) and reducing property damage (75%) are reasons for posting their property. Almost two-thirds of respondents (63%) also agreed that keeping wildlife for myself/family/friends is a reason for posting their property. Although a majority of landowners agreed that conflict with other recreational users (53%) and better control of deer population (54%) are reasons for posting their property, about one-third of respondents neither agreed nor disagreed with these reasons. The greatest proportion of respondents indicated that they neither agreed nor disagreed that family tradition (38%), relationship with neighbor (35%) and livestock safety (35%) are reasons for posting their property (Table 3-2).

There were significant differences among respondents in the six strata in their level of agreement with reasons for posting their property. Small and medium landowners in the south (Mean=5.4) agreed to a greater extent than respondents in other strata that keeping wildlife for myself/family/friends is a reason for posting property (Table 3-3). Large landowners in the north (Mean=4.9) agreed to a greater extent than respondents in other strata that livestock safety is a reason for posting property (Table 3-4), while medium landowners in the south (Mean=5.3) agreed to a greater extent than respondents in other strata that better control of deer population is a reason for posting their property (Table 3-5). However, across all six strata, the greatest proportion of respondents neither agreed nor disagreed with keeping wildlife for myself/family/friends, livestock safety and better control of deer population as reasons for posting property (Tables 3-3, 3-4 and 3-5).

Section 3: Posting

Table 3-1: Percent of respondents who post their property.

	Strata	N	Yes	No
	All	2233	40.2%	59.8%
North	Small	340	42.4%	57.6%
	Medium	395	31.9%	68.1%
	Large	319	32.9%	67.1%
South	Small	369	51.2%	48.8%
	Medium	423	43.3%	56.7%
	Large	387	38.8%	61.2%
		χ^2=39.652*		

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant.

Table 3-2: Reasons for posting property

	N	Mean	F	Strongly disagree	Moderately disagree	Slightly disagree	Neither	Slightly agree	Moderately agree	Strongly agree
Control who uses my land	844	6.72	1.414^{ns}	2.1		0.2	0.5	2.1	8.6	86.4
Eliminate tresspass	822	6.48	0.690^{ns}	1.8	0.7	1.1	3.5	4.1	14.0	74.7
Liability concerns	829	5.98	1.636^{ns}	3.5	1.4	1.1	9.9	12.8	14.5	56.8
Human safety	834	5.91	1.009^{ns}	3.6	1.6	.7	11.4	12.7	16.7	53.4
Reduce property damage	829	5.48	0.960^{ns}	4.8	2.7	2.8	15.1	17.9	17.4	39.4
Keep wildlife for myself/family/friends	840	5.15	2.770*	7.3	3.8	2.7	23.1	14.9	12.9	35.4
Conflict with other recreational users	804	4.92	0.469^{ns}	7.7	3.6	1.5	34.5	10.6	13.6	28.6
Better control of deer population	815	4.88	2.709*	9.1	3.8	2.0	31.4	11.2	14.1	28.5
Family tradition	824	4.72	1.036^{ns}	10.2	2.7	2.1	37.6	10.2	12.0	25.2
Relationship with neighbor	822	4.59	1.412^{ns}	12.4	3.9	1.2	35.3	12.3	11.6	23.4
Livestock safety	805	4.52	3.145*	14.3	2.9	3.2	35.4	9.3	10.2	24.7

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant; means based on a 7-point scale from strongly disagree (1) to strongly agree (7).

Section 3: Posting

Table 3-3: Agreement or disagreement with reason for posting property: <u>keep wildlife for myself/family/friends</u>

	Strata	N	Mean	Strongly disagree	Moderately disagree	Slightly disagree	Neither	Slightly agree	Moderately agree	Strongly agree
North	Small	134	5.2	6.7%	3.0%	2.2%	23.9%	15.7%	12.7%	35.8%
	Medium	116	5.0	9.5%	5.2%	4.3%	21.6%	11.2%	10.3%	37.9%
	Large	96	4.8	10.4%	3.1%	3.1%	28.1%	17.7%	11.5%	26.0%
South	Small	183	5.4	4.4%	2.7%	2.7%	22.4%	15.3%	14.8%	37.7%
	Medium	172	5.4	5.8%	2.9%	2.3%	19.8%	16.9%	9.3%	43.0%
	Large	139	4.8	9.4%	6.5%	2.2%	25.2%	12.2%	18.0%	26.6%
		F=2.770*								

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant; means based on a 7-point scale from strongly disagree (1) to strongly agree (7).

Table 3-4: Agreement or disagreement with reason for posting property: <u>livestock safety.</u>

	Strata	N	Mean	Strongly disagree	Moderately disagree	Slightly disagree	Neither	Slightly agree	Moderately agree	Strongly agree
North	Small	132	4.4	15.2%	3.8%	2.3%	40.2%	6.1%	6.8%	25.8%
	Medium	113	4.4	17.7%	1.8%	6.2%	29.2%	11.5%	9.7%	23.9%
	Large	95	4.9	9.5%	3.2%	3.2%	28.4%	14.7%	11.6%	29.5%
South	Small	170	4.1	17.6%	2.9%	2.9%	47.1%	5.3%	5.9%	18.2%
	Medium	163	4.7	11.7%	3.7%	1.8%	33.7%	9.8%	13.5%	25.8%
	Large	132	4.8	12.9%	1.5%	3.8%	28.0%	11.4%	14.4%	28.0%
		F=3.145*								

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant.

Section 3: Posting

Table 3-5: Agreement or disagreement with reason for posting property: <u>better control of deer population.</u>

	Strata	N	Mean	Strongly disagree	Moderately disagree	Slightly disagree	Neither	Slightly agree	Moderately agree	Strongly agree
North	Small	131	4.7	9.2%	3.1%		38.9%	13.7%	11.5%	23.7%
	Medium	113	4.6	16.8%	1.8%	3.5%	28.3%	11.5%	12.4%	25.7%
	Large	92	5.1	4.3%	5.4%	1.1%	29.3%	13.0%	17.4%	29.3%
South	Small	179	4.9	6.7%	5.0%	3.4%	35.2%	7.3%	14.0%	28.5%
	Medium	161	5.3	5.0%	2.5%	2.5%	27.3%	13.0%	14.3%	35.4%
	Large	139	4.7	13.7%	5.0%	0.7%	28.1%	10.1%	15.8%	26.6%
		F=2.709*								

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant; means based on a 7-point scale from strongly disagree (1) to strongly agree (7).

Section 4: Leasing

Findings:

Perceptions about leasing

Respondents were asked to report if they leased their property for deer hunting. Respondents were also asked to indicate their level of agreement or disagreement with statements regarding their decision to lease their property to deer hunters. Response was on a seven-point scale from strongly disagree (1) to strongly agree (7).

Overall, the vast majority of respondents (96%) do not lease their property for deer hunting (Table 4-1). Respondents in the northern stratum who owned small or medium land parcels were the least likely to lease (~2%) their properties, while those owning large land parcels in the north (7.3%) and south (6.4%) were most likely to lease their properties. Of those who do lease their property, most agreed that having better control over who is using their land is a reason for leasing (91%). A large majority also agreed that leasing allows them to earn extra money from their property (86%) and that they see leasing as the future way landowners can manage their property (77%). Respondents also agreed that having better control over the type of deer harvested (61%) is a reason for leasing. About half neither agreed nor disagreed that they feel pressure from their neighbors who lease their property (51%). A minority also reported they were managing their property for mature bucks (31%, Table 4-2).

Table 4-1: Percent of respondents who lease their property for deer hunting.

	Strata	n	%Yes	%No	N[a]	%Yes (estimate)[b]
	All	2207	4.2%	95.8%	6,090	256
North	Small	334	2.1%	97.9%	830	17
	Medium	388	1.8%	98.2%	1,551	28
	Large	316	7.3%	92.7%	593	43
South	Small	362	4.1%	95.9%	795	33
	Medium	419	3.8%	96.2%	1,587	60
	Large	388	6.4%	93.6%	734	47
		χ^2=21.592*				

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; [a]population of the number of landowners in the study area; [b]estimate of total number of landowners who lease their property.

Table 4-2: Reasons for leasing property to deer hunters.

	n	Mean	Strongly disagree	Moderately disagree	Slightly disagree	Neither	Slightly agree	Moderately agree	Strongly agree
I have better control over who is using my land	78	6.3	2.6	1.3	1.3	3.8	5.1	16.7	69.2
Leasing allows me to earn extra money from my property	78	6.0	3.8			10.3	16.7	9.0	60.3
I see leasing as the future way landowners can manage their property	78	5.6	5.1		2.6	15.4	19.2	16.7	41.0
I have better control over the type of deer that are harvested	76	5.4	2.6	2.6	1.3	32.9	9.2	13.2	38.2
I am managing my property for mature bucks	78	4.5	12.8	3.8	5.1	30.8	16.7	6.4	24.4
I feel pressure from my neighbors who also lease their property	78	3.0	30.8	6.4	5.1	51.3	3.8		2.6

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant; means based on a 7-point scale from strongly disagree (1) to strongly agree (7).

Section 5: Perceptions about deer populations

Findings:

Population trends

Respondents were asked to report deer population trends in the area of their property over the past five years on a three-point scale from more deer now (1) to fewer deer now (3). Overall, the greatest proportion of respondents (41%) indicated that the deer population in the area of their property is about the same as 5 years ago (Table 5-1).

Respondents were also asked to characterize the deer population around their property and surrounding area as too high (1), about right (2) or too low (3). Overall, the greatest proportion of respondents (48%) indicated that deer population around their property and surrounding area was about right (Table 5-2). The greatest proportion of respondents in all strata, except large landowners in the south, reported that the deer population on their property and surrounding area is about right (Table 5-2).

Respondents were also asked to identify the level deer populations should be managed on their property and surrounding area. The response was on a seven-point scale from decrease 50% (1) to increase 50% (7). Overall, the greatest proportion of respondents (44%) indicated that the level of deer population should not be changed (Table 5-3).

We compared landowners who reported hunting deer with those who did not hunt deer on each of the deer population questions. A larger percentage of landowners who hunted deer (36%) believed there were fewer deer now than landowners who did not hunt deer (19%) (Table 5-4), and a smaller percentage of landowners who hunted deer believed the deer population was too high (23%) compared to non-hunting landowners (45%) (Table 5-5). While over 40% of landowners who did not hunt deer believed deer populations should be decreased by at least 10%, only 27% of hunting landowners believed deer populations should be decreased (Table 5-6).

Respondents were asked to report the number of bucks and does killed each year on their property in the last five years and the number of bucks and does they would prefer to have killed each year on their property in the last five years. Large landowners in the south reported significantly more bucks (Mean=5) and does (Mean=9.2) killed on their property than respondents in any other stratum (Table 5-7). These respondents would also prefer to have more bucks (Mean=6.1) and does (Mean=13.2) killed each year than respondents in any other stratum. Respondents from all strata, except large landowners in the north would prefer to have more bucks and does killed on their property each year than the number they reported are killed each year (Table 5-8).

We also analyzed the relationship between perceptions of deer population size with preference to have additional deer killed. We reversed scale scores for beliefs about deer population trends and deer population around property and surrounding area for correlation analyses. Significant

correlations were found between respondents' beliefs about deer population trends in the past five years and preferences to have bucks (0.160) and does (0.201) killed on their property. These findings suggest that respondents reporting fewer deer now than 5 years ago tended to prefer to have fewer deer killed on their property. Similarly, correlations were found between respondents' perceptions of deer populations around their property and preference to have bucks (0.213) and does (0.298) killed. These findings suggest that respondents who reported that the deer population is too high tended to prefer to have more deer killed. Correlations were found between respondents' beliefs about the level at which deer populations should be managed and preference to have bucks (-0.160) and does (-0.255) killed. Respondents who believed that the deer population should be increased tended to prefer to have fewer deer killed (Table 5-9).

Section 5: Perceptions about deer population

Table 5-1. Beliefs about deer population trends in the last 5 years

	Strata	n	Mean	More deer now than 5 years ago	About the same number of deer now as 5 years ago	Fewer deer now than 5 years ago	Don't know
	All	2084	2.0	24.8%	41.4%	27.7%	6.1%
North	Small	305	2.0	23.2%	42.9%	24.7%	9.2%
	Medium	368	1.9	27.2%	45.0%	21.4%	6.4%
	Large	302	1.9	29.8%	44.8%	21.3%	4.1%
South	Small	345	2.2	19.4%	36.9%	38.0%	5.7%
	Medium	391	2.2	19.2%	38.4%	35.1%	7.3%
	Large	373	1.9	31.0%	41.1%	24.3%	3.6%
			F=10.492*				

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant; means based on a 3-point scale: more deer now than 5 years ago (1), about the same number of deer now as 5 years ago (2) and fewer deer now than 5 years ago (3).

Table 5-2. Perception of deer population around property and surrounding area.

	Strata	n	Mean	Too high	About right	Too low	Don't know
	All	2003	1.85	28.0%	48.1%	14.4%	9.4%
North	Small	292	2.0	17.6%	54.9%	14.6%	12.8%
	Medium	345	1.9	26.5%	47.7%	13.8%	12.0%
	Large	288	1.8	32.4%	49.0%	10.9%	7.7%
South	Small	333	2.0	20.3%	51.8%	19.2%	8.8%
	Medium	386	1.9	25.6%	48.3%	17.5%	8.5%
	Large	359	1.6	45.1%	38.1%	9.8%	7.0%
			F=15.075*				

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant; means based on a 3-point scale from too high (1) to too low (3).

Section 5: Perceptions about deer population

Table 5-3. Beliefs about the level at which deer populations should be managed around their property and surrounding area.

	Strata	n	Mean	Decrease 50% (Significant)	Decrease 25% (Moderate)	Decrease 10% (Slight)	No change	Increase 10% (Slight)	Increase 25% (Moderate)	Increase 50% (Significant)
	All	2119	3.8	9.0%	12.8%	11.3%	43.5%	11.6%	8.2%	3.6%
North	Small	316	4.0	4.7%	10.1%	8.9%	51.9%	10.1%	11.1%	3.2%
	Medium	372	3.7	6.7%	13.2%	12.9%	46.2%	11.8%	6.5%	2.4%
	Large	308	3.6	11.0%	12.3%	12.7%	42.9%	12.0%	7.8%	1.3%
South	Small	348	4.0	5.7%	11.2%	9.8%	43.7%	14.7%	10.1%	4.9%
	Medium	404	4.0	6.2%	10.6%	10.9%	45.0%	12.4%	8.9%	5.9%
	Large	371	3.2	19.1%	19.1%	12.4%	32.1%	8.4%	5.4%	3.5%
		F=16.575*								

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P ≤ 0.05, ns=not significant; means based on a 7-point scale from decreawse 50% (1) to increase 50% (7).

Table 5-4. Beliefs about deer population trends in the last 5 years: Comparison of landowners who hunt deer and do not hunt deer

Strata	n	More deer now than 5 years ago	About the same number of deer now as 5 years ago	Fewer deer now than 5 years ago
Hunt deer	1305	22.0%	41.9%	36.1%
Do not hunt deer	779	27.2%	45.0%	18.5%
		Chi-Sq = 80.97, P < 0.001		

Table 5-5. Perception of deer population around property and surrounding area: Comparison of landowners who hunt deer and do not hunt deer

Strata	n	Too high	About right	Too low
Hunt deer	1281	23.2%	55.4%	21.4%
Do not hunt deer	722	44.7%	49.0%	6.2%
		Chi-Sq = 139.45, P < 0.001		

Section 5: Perceptions about deer population

Table 5-6. Beliefs about the level at which deer populations should be managed around their property and surrounding area: Comparison of landowners who hunt deer and do not hunt deer

Strata	n	Decrease 50% (Significant)	Decrease 25% (Moderate)	Decrease 10% (Slight)	No change	Increase 10% (Slight)	Increase 25% (Moderate)	Increase 50% (Significant)
Hunt deer	1300	6.1%	11.3%	9.8%	42.5%	14.6%	11.0%	4.6%
Do not hunt deer	819	13.6%	15.3%	13.6%	45.1%	6.7%	3.8%	2.1%
	Chi-Sq = 112.86, P < 0.001							

Table 5-7. Number of deer killed on property each year.

	Strata	Bucks killed		Does killed	
		n	Mean	n	Mean
	All	1771	3.1	1742	5.0
North	Small	258	1.6	260	2.5
	Medium	322	2.5	301	3.5
	Large	245	4.0	239	6.0
South	Small	297	2.2	304	3.4
	Medium	337	3.0	332	5.3
	Large	312	5.0	306	9.2
		F=24.866*		F=33.364*	

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant.

Section 5: Perceptions about deer population

Table 5-8. Number of deer respondents would prefer to have killed each year.

	Strata	Bucks killed		Does killed	
		n	Mean	N	Mean
	All	1570	3.6	1556	6.5
North	Small	231	1.8	229	3.0
	Medium	278	3.1	268	4.5
	Large	198	3.8	197	6.4
South	Small	285	2.7	283	4.4
	Medium	294	3.8	295	6.6
	Large	284	6.1	284	13.2
		F=13.830*		F=32.760*	

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant.

Table 5-9. Correlations between perception of deer population size and preference to have deer killed.

	Preference to have bucks killed each year	Preference to have does killed each year
Deer population trend in the past 5 years[a]	0.160*	0.201*
Perception of deer population near property and surrounding area[a]	0.213*	0.298*
Perception of the level at which deer population should be managed	-0.160*	-0.255*

*P≤ 0.05; ns=not significant. [a]Scales on these deer population measures were reversed scored in computation of correlations.

Section 6: Hunting experiences during 2011 hunting season

Findings:

Years hunted

Respondents were asked to report if and when they hunted deer in Minnesota during the 2009, 2010 or 2011 Minnesota deer season. Respondents were also asked to report the number of years they have been hunting in Minnesota. Overall, a majority of respondents (61%) reported hunting during any one of the 2009, 2010 or 2011 Minnesota deer seasons. A significantly greater proportion of small (68%) and medium (67%) landowners in the south reported hunting during any one of the deer seasons than respondents from any other stratum (Table 6-1). Of the respondents who hunted during any of the seasons, the mean number of years hunted was 34 years. There were no significant differences among respondents in the six strata in the mean number of years hunted in Minnesota (Table 6-2).

Type of land hunted

Respondents were asked to indicate how much of their hunting they did on four different types of land: private land that they own, private land they lease for hunting, private land that they do not own and public land. Response was on a four-point scale from none (1) to all (4). Among hunters, a large majority of respondents (85%) reported that they hunted on private land they own most to all of the time. A vast majority (92%) reported that they did not hunt on private land they lease for hunting. A majority of respondents reported that they did not at all or only some of the time hunt on private land they do not own or lease (80%) or on public land (97%, Table 6-4).

Satisfaction with hunting experience after antler point restriction regulations

Respondents were asked to report their level of satisfaction with their hunting experience in southeastern Minnesota after hunting under the antler point restriction regulations. Response was on a seven-point scale from much less satisfied (1) to much more satisfied (7). Overall, the greatest proportion of respondents (29%) reported no change in their level of satisfaction with their hunting experience. Small landowners in the north (Mean=4.6) and in the south (Mean=4.5) reported being more satisfied with their hunting experience than respondents in other strata. However, mean satisfaction levels across the six strata suggests that there is no change in hunter satisfaction after hunting under antler point restriction regulations (Table 6-5).

Section 6: Hunting experiences during 2011 hunting season

Table 6-1. Proportion of deer hunters

	Strata	N	%Hunters	%Non-hunters
	All	2193	61.4%	38.6%
North	Small	335	57.6%	42.4%
	Medium	382	53.7%	46.3%
	Large	315	55.9%	44.1%
South	Small	364	68.4%	31.6%
	Medium	414	67.4%	32.6%
	Large	383	63.7%	36.3%
			χ^2=30.395*	

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant.

Table 6-2. Mean number of years hunted

	Strata	N	Mean
	All	1276	33.9
North	Small	182	32.6
	Medium	199	33.8
	Large	163	35.2
South	Small	237	32.5
	Medium	260	34.0
	Large	235	35.5
		F=1.548^{ns}	

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant.

Section 6: Hunting experiences during 2011 hunting season

Table 6-3. Permit area hunted.

Permit area	N	Percent
338	2	0.2
339	25	2.2
341	202	18.1
342	158	14.1
343	66	5.9
344	56	5.0
345	127	11.4
346	202	18.1
347	18	1.6
348	9	0.8
349	220	19.7
602	32	2.9
Total	1117	100.0

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned.

Table 6-4. Hunting on various types of land during the most recent deer hunting season.

	n	Mean	None	Some	Most	All	Don't know
Private land that I own	1282	3.4	2.9	11.6	26.2	59.2	0.1
Private land that I do **not** own or lease	932	1.8	48.6	31.7	13.2	6.2	0.3
Public land	853	1.3	78.2	19.1	1.4	1.1	0.2
Private land that I lease for hunting	789	1.2	92.3	4.1	1.9	1.4	0.4

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant; means based on a four-point scale from none (1) to all (4).

Table 6-5. Satisfaction with hunting experience after the antler point restriction regulations.

	Strata	n	Mean	Much less satisfied	Somewhat less satisfied	Slightly less satisfied	No change	Slightly more satisfied	Somewhat more satisfied	Much more satisfied
	All	1302	4.2	16.8%	6.9%	6.3%	28.7%	8.8%	12.0%	20.5%
North	Small	186	4.6	12.9%	7.5%	4.8%	26.9%	7.5%	14.0%	26.3%
	Medium	200	4.1	21.0%	5.5%	7.5%	26.5%	11.0%	10.0%	18.5%
	Large	168	4.3	14.9%	7.7%	4.2%	31.0%	9.5%	12.5%	20.2%
South	Small	240	4.5	10.4%	5.8%	7.1%	31.7%	10.0%	13.3%	21.7%
	Medium	269	3.9	20.8%	8.2%	7.4%	30.1%	6.7%	9.3%	17.5%
	Large	239	4.2	19.7%	6.7%	5.9%	25.9%	8.4%	13.4%	20.1%
		F=3.594*								

Section 6: Hunting experiences during 2011 hunting season

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant; Means based on a seven-point scale from much less satisfied (1) to much more satisfied (7).

Section 7: Opinions regarding hunting regulations

Findings:

Support for regulations

All respondents, deer hunters and non-hunters, were asked to indicate the extent to which they support or oppose regulations that would increase the proportion of antlered bucks. Response was on a five-point scale from strongly oppose (1) to strongly support (5). Overall, a greater proportion of respondents supported the regulation (39%) than opposed it (23%). Small landowners in the north support the regulation to a greater extent than respondents in all other strata. However, an inspection of the means suggests that, overall, respondents in all six strata are neutral (i.e., neither support nor oppose) to moderately supportive of the regulation (Table 7-1). When hunters and non-hunters were examined separately, almost half (50%) of the non-hunting landowners neither opposed or supported regulations that would increase the proportion of antlered bucks, while one in four (25%) supported increasing the proportion of antlered bucks. Among respondents that deer hunted, over half (53%) supported regulations that would increase the proportion of antlered bucks, while one in four (27%) opposed such regulations.

Respondents who hunted deer were asked to report their level of support for regulations before they were implemented in the 2010 deer seasons. These special regulations were designed to put more harvest pressure on antlerless deer and at the same time protect a large percentage of yearling bucks. Response was on a five-point scale from strongly opposed (1) to strongly supported (5). Overall, a majority of respondents (51%) reported that they supported the regulations when they were announced before the 2010 deer seasons. Small landowners in the north supported the regulations to a greater extent (Mean=3.6) than respondents in any other stratum (Table 7-2).

Respondents who hunted deer were asked to report change in support for antler point restrictions in southeastern Minnesota after hunting under the special regulations. Response was on a seven-point scale from much less support (1) to much more support (7). More than 40% of respondents reported that they support the regulations slightly to much more after hunting under the antler point restriction regulations. Small landowners in the north reported significantly more support for the regulation (Mean=4.7) than respondents in any other stratum (Table 7-3).

All respondents were asked to report their level of support for continuation of the regulations that were enacted in 2010. Respondents were asked to report their level of support on a five-point scale from strongly oppose (1) to strongly support (5) for four regulations: (i) keeping the 3A season at 9 days, (ii) continue the 4-point to one side antler point restriction, (iii) continue the prohibition of buck cross-tagging, and (iv) exemption of youth from the antler point restriction. Hunters supported the regulations to a greater extent than those who did not hunt. A majority of hunters (61%) support regulations to keep the 3A season at 9 days. The overall level of support for this regulation is higher among hunters (Mean=3.8) than among non-hunters (Mean=3.5) (Table 7-4). A majority of hunters (54%) support continuation of 4-point to one side antler point restrictions (Table 7-5). While close to half of non-hunters (47%) are neutral (i.e., neither support

nor oppose the prohibition of buck cross-tagging), more than 40% of hunters support the continuation of this regulation (Table 7-6). More than two-thirds of hunters (70%) support the exemption of youth from antler point restriction (Table 7-7). A majority of non-hunters expressed neutral opinions (i.e., neither support nor oppose or don't know) about all the regulations (Tables 7-4 to 7-7).

Section 7: Opinions regarding hunting regulations

Table 7-1. Support for regulation that would increase the proportion of antlered bucks in the deer area respondents hunt most often.

	Strata	n	Mean	Strongly oppose	Moderately oppose	Neither oppose nor support	Moderately support	Strongly support	Don't know
	All	1925	3.25	15.2%	8.2%	26.2%	16.6%	22.1%	11.7%
North	Small	282	3.47	8.4%	7.8%	25.9%	21.1%	21.7%	15.1%
	Medium	321	3.23	13.4%	8.4%	27.8%	14.4%	20.2%	15.7%
	Large	281	3.17	15.7%	10.6%	28.2%	13.5%	22.1%	9.9%
South	Small	327	3.40	13.5%	7.4%	24.5%	18.4%	26.1%	10.2%
	Medium	359	3.15	17.6%	7.6%	26.7%	15.9%	20.0%	12.2%
	Large	355	3.12	21.7%	7.6%	24.3%	16.5%	22.8%	7.1%
		F=3.429*							

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P ≤ 0.05, ns=not significant; means based on a five-point scale from strongly oppose (1) to strongly support (5).

Table 7-2. Support for regulations among hunters prior to the 2010 deer season.

	Strata	n	Mean	Strongly opposed	Moderately opposed	Neither opposed nor supported	Moderately supported	Strongly supported	Don't know
	All	1271	3.32	21.5%	12.3%	12.2%	16.5%	34.7%	2.8%
North	Small	185	3.61	13.5%	13.0%	13.0%	14.6%	42.2%	3.6%
	Medium	196	3.28	21.5%	15.0%	11.5%	14.5%	35.5%	2.0%
	Large	163	3.28	21.6%	11.4%	14.4%	19.2%	31.1%	2.4%
South	Small	234	3.32	20.9%	13.8%	10.5%	18.4%	34.3%	2.1%
	Medium	259	3.14	23.7%	12.2%	15.6%	15.9%	28.5%	4.1%
	Large	234	3.33	25.9%	8.8%	8.4%	16.7%	38.1%	2.1%
		$F=1.977^{ns}$							

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant; means based on a five-point scale from strongly opposed (1) to strongly supported (5).

Section 7: Opinions regarding hunting regulations

Table 7-3. Change in support for antler point restriction regulations among hunters after hunting under the regulations.

	Strata	n	Mean	Much less support	Somewhat less support	Slightly less support	No change	Slightly more support	Somewhat more support	Much more support
	All	1288	4.25	19.5%	4.1%	5.0%	29.0%	10.2%	10.6%	21.6%
North	Small	185	4.66	13.5%	3.8%	3.8%	29.2%	8.1%	15.1%	26.5%
	Medium	198	4.20	19.7%	5.1%	4.0%	30.3%	11.1%	7.6%	22.2%
	Large	165	4.27	18.2%	4.2%	6.1%	27.3%	13.3%	10.3%	20.6%
South	Small	239	4.43	16.3%	3.8%	6.3%	28.0%	11.3%	8.4%	25.9%
	Medium	263	3.94	24.3%	3.4%	5.7%	31.6%	8.0%	9.9%	17.1%
	Large	238	4.11	22.7%	4.6%	3.8%	26.9%	10.5%	13.0%	18.5%
		F=3.231*								

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant.; means based on a seven-point scale from much less support (1) to much more support (7).

Table 7-4. Level of support for continuation of regulations that were enacted in 2010: keeping the 3A season at 9 days.

	N	Mean	Strongly oppose	Slightly oppose	Neither oppose nor support	Slightly support	Strongly support	Don't know
All	1860	3.70	8.6%	5.6%	28.0%	10.7%	37.6%	9.5%
Non-hunters	587	3.48	2.1%	2.8%	46.7%	9.1%	17.6%	21.6%
Hunters	1273	3.80	12.3%	7.3%	17.2%	11.6%	49.1%	2.5%
	F=24.791*							

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant; means based on a five-point scale from strongly oppose (1) to strongly support (5).

Table 7-5. Level of support for continuation of regulations that were enacted in 2010: continue the 4-point to one side antler point restriction.

	N	Mean	Strongly oppose	Slightly oppose	Neither oppose nor support	Slightly support	Strongly support	Don't know
All	1905	3.26	21.1%	8.3%	20.4%	10.8%	31.8%	7.7%
Non-hunters	616	3.05	12.9%	7.3%	38.2%	9.7%	13.7%	18.3%
Hunters	1289	3.36	25.9%	8.9%	10.1%	11.4%	42.2%	1.5%
	F=16.233*							

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant; means based on a five-point scale from strongly oppose (1) to strongly support (5).

Section 7: Opinions regarding hunting regulations

Table 7-6. Level of support for continuation of regulations that were enacted in 2010: <u>continue the prohibition of buck cross-tagging</u>.

	N	Mean	Strongly oppose	Slightly oppose	Neither oppose nor support	Slightly support	Strongly support	Don't know
All	1767	3.22	15.7%	7.4%	30.8%	7.1%	25.6%	13.3%
Non-hunters	550	3.16	6.2%	3.9%	47.2%	5.1%	11.4%	26.2%
Hunters	1217	3.25	21.3%	9.4%	21.4%	8.3%	33.8%	6.0%
	F=1.743^{ns}							

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant; means based on a five-point scale from strongly oppose (1) to strongly support (5).

Table 7-7. Level of support for continuation of regulations that were enacted in 2010: <u>exemption of youth from the antler point restriction</u>.

	N	Mean	Strongly oppose	Slightly oppose	Neither oppose nor support	Slightly support	Strongly support	Don't know
All	1893	3.91	8.6%	5.1%	20.9%	9.1%	48.2%	8.1%
Non-hunters	613	3.60	4.9%	4.8%	36.3%	7.7%	27.8%	18.5%
Hunters	1280	4.05	10.7%	5.2%	12.1%	9.9%	60.0%	2.1%
	F=49.298*							

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant; means based on a five-point scale from strongly oppose (1) to strongly support (5).

Section 8: Perceptions about deer management

Findings:

Knowledge

Respondents were asked to indicate whether they knew a great deal, a moderate amount, a little or nothing about deer management in southeastern Minnesota. A greater proportion of hunters (93%) than non-hunters (7%) reported knowing "a great deal" about deer management. A greater proportion of non-hunters (64%) than hunters (36%) reported knowing nothing about deer management in southeastern Minnesota (Table 8-1).

Beliefs about deer management

Respondents were asked to report the extent to which they agreed or disagreed with statements regarding deer management. Response was on a seven-point scale from strongly disagree (1) to strongly agree (7). A large majority of respondents agreed that the Minnesota DNR should be responsible for talking to community members about managing deer populations (77%) and that the Minnesota DNR should be responsible for managing deer populations (65%). A majority of respondents (57%) also agreed that landowners in their community should talk to each other about managing deer populations. Respondents expressed neutral opinions about their personal responsibility to manage the deer population. Over a quarter of respondents (27%) were neutral on whether it is their personal responsibility to manage the deer population. The greatest proportion of respondents (35%) was neutral on whether it is their personal responsibility to talk to others in their community about deer management. More respondents agreed (46%) than disagreed (30%) with the statement "landowners in my community should be responsible for managing deer populations" (Table 8-2).

Beliefs about the use of wildlife, their community and land management

Respondents were asked to rate the extent to which they agreed or disagreed with a series of 16 statements about land management, use of wildlife, and their community. Response was on a seven-point scale from strongly disagree (1) to strongly agree (7). A vast majority of respondents (88%) agreed that it is acceptable for people to kill wildlife, if they think it poses a threat to their life. A large majority (78%) also agreed that it is acceptable to kill wildlife, if they think it poses a threat to their property. A majority of respondents disagreed that hunting does not respect the lives of animals (75%) and that hunting is inhumane and cruel to the animals (82%). Three-fourths of respondents (75%) agreed that people who want to hunt should be provided the opportunity to do so. A large majority of respondents agreed that we should strive for a world where there's an abundance of fish and wildlife for hunting and fishing (79%) and that humans should manage fish and wildlife populations so that humans benefit (71%). Although a slight majority of respondents agreed that fish and wildlife are on earth primarily for people to use (51%), fewer than half the respondents agreed that the needs of humans should take priority over fish and wildlife protection (45%, Table 8-3).

Respondents generally expressed agreement with statements regarding their community. A large majority of respondents (86%) agreed that there are many people in their community who they

think of as good friends. A large majority also agreed that they often talk about their community as being a great place to live (84%) and that they feel strongly attached to the community in which they live in (82%).

Respondents generally perceive themselves as private land wildlife stewards. More than three-fourths of respondents (78%) agreed that being a good private land wildlife steward is an important part of who they are. A large majority of respondents (79%) also agreed with the statement "I often think of myself as a good private land wildlife steward." A majority of respondents (56%) also agreed that managing deer and other wildlife on their land is central to who they are, while less than half (39%) agreed that managing deer on their land is something they rarely think about (Table 8-3).

Strategies to lower deer population

Respondents were asked to rank six strategies that could be implemented to reduce deer populations. Overall, the greatest proportion of respondents (36%) ranked antler point restrictions as the most preferred strategy, while the greatest proportion of respondents ranked buck license lottery as the least preferred strategy (Tables 8-4 to 8-9). A majority of respondents in all strata ranked buck license lottery as the least preferred strategy (Table 8-5). Among the six strategies, the greatest proportion of respondents in all strata (35.7%) ranked antler point restriction as the most preferred strategy (Table 8-6). A significantly greater proportion of large landowners in the north (22.4%) ranked earn-a-buck as the most preferred strategy than respondents in any other stratum (~15%) (Table 8-4). A significantly greater proportion of large landowners in the south (24.8%) ranked early antlerless season as the most preferred strategy (Table 8-7). There were no significant differences among respondents in the six strata in their preferences for buck license lottery (~8%) (Table 8-5), antler point restriction (~36%) (Table 8-6), limited depredation permits (~25%) (Table 8-8) and localized special seasons (~17%) (Table 8-9).

Opinions about localized seasons

We wanted to know if respondents supported the idea of a localized season, and if so, when it should be. Respondents were asked to rate the extent to which they agreed or disagreed with a series of five statements about localized special seasons to lower deer population in local areas. While 43% agreed that in general they support the idea of firearms hunts on private lands before or after the regular season, 39% disagreed with the statement (Table 8-10). A majority of respondents (61%) disagreed that they would prefer such a season be before the regular firearm deer season in late summer (i.e., August- Sept., Table 8-11). A slight majority of respondents (52%) also disagreed that they would prefer such a season be before the regular firearm deer season in early fall (i.e., mid-Sept.-early Oct., Table 8-12). More than a quarter of respondents (26%) neither agreed nor disagreed that they would prefer such a season be after the muzzleloader deer season (i.e., mid-Dec., Table 8-13). More than 40% of respondents (41%) disagreed that they would prefer such a season be after all seasons are over.

We compared landowners who hunted deer with those who did not hunt deer on all questions concerning localized seasons (Tables 8-15 through 8-20). Hunters (15%) were less likely to select localized seasons as their most preferred strategies to lower deer populations compared to non-hunters (20%) (Table 8-15). Less than half (44%) of hunters supported the idea of localized

seasons while a majority (52%) of non-hunters supported the strategy. About 44% of hunters disagreed with the strategy (Table 8-16). A majority of hunters disagreed with localized seasons before the regular firearm season (Tables 8-17 and 8-18), while a smaller percentage of non-hunters than hunters disagreed with any of the seasons. While no timing of localized seasons had majority support from either hunters or non-hunters, 44% of hunters agreed with a localized season after muzzleloader season in December and 39% of hunters disagreed with idea (Table 8-19). A January season received less support (Table 8-20).

Section 8: Perceptions about deer management

Table 8-1. Respondents' reported level of knowledge about deer management in southeastern Minnesota

	N	Hunters	Non-hunters
A great deal	501	93.0%	7.0%
A moderate amount	652	80.1%	19.9%
A little	502	51.0%	49.0%
Nothing	103	35.9%	64.1%
Don't know	352	9.7%	90.3%
Total	2110		

Table 8-2. Respondents' beliefs about deer management.

	N	Mean	Strongly disagree	Moderately disagree	Slightly disagree	Neither	Slightly agree	Moderately agree	Strongly agree
The Minnesota DNR should be responsible for talking to community members about managing deer populations.	2129	5.34	4.7	2.2	2.3	14.1	25.6	24.5	26.8
The Minnesota DNR should be responsible for managing deer populations.	2114	4.79	9.1	4.7	6.4	14.7	25.4	22.0	17.7
Landowners in my community should talk to each other about managing deer populations.	2123	4.59	7.3	4.7	4.8	26.5	29.3	16.6	10.8
It is my personal responsibility to manage deer population.	2121	4.18	15.2	7.4	5.5	26.8	18.8	14.1	12.2
Landowners in my community should be responsible for managing deer populations.	2117	4.15	13.6	8.9	7.7	23.9	21.4	13.2	11.3
The deer populations in my community are well managed.	2130	4.14	10.4	7.8	11.4	26.7	21.3	16.6	5.8
It is my personal responsibility to talk to others in my community about deer	2119	3.82	15.8	7.2	8.7	34.8	19.8	8.1	5.6

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	N	Mean	Strongly disagree	Moderately disagree	Slightly disagree	Neither	Slightly agree	Moderately agree	Strongly agree
management.									

Means based on a seven-point scale from strongly disagree (1) to strongly agree (7).

Table 8-3. Respondents' perceptions about land management, use of wildlife and their community.

	N	Mean	Strongly disagree	Moderately disagree	Slightly disagree	Neither	Slightly agree	Moderately agree	Strongly agree
It is acceptable for people to kill wildlife, if they think it poses threat to their life.	2103	6.10	2.3	1.2	2.3	6.3	11.6	19.4	56.9
There are many people in my community who I think of as good friends.	2109	5.84	1.3	1.2	1.3	10.1	18.4	30.0	37.6
I often talk about my community as being a great place to live.	2108	5.83	.9	1.4	1.0	12.5	16.9	29.3	38.0
I feel strongly attached to the community I live in.	2098	5.66	1.3	1.4	1.9	14.0	21.0	27.5	33.0
Being a good private land wildlife steward is an important part of who I am.	2112	5.58	1.8	2.1	1.8	15.8	21.1	23.4	33.9
We should strive for a world where there's an abundance of fish and wildlife for hunting and fishing.	2105	5.58	2.2	2.2	3.8	12.8	18.7	26.5	33.7
I often think of myself as a good private land wildlife steward.	2116	5.58	1.7	1.4	1.3	16.4	21.9	26.2	31.0
People who want to hunt should be provided the opportunity to do so.	2088	5.47	3.6	2.9	3.9	15.1	18.0	20.9	35.7
It is acceptable for people to kill wildlife, if they think it poses threat to their property.	2104	5.39	3.8	3.2	5.1	10.1	24.0	23.7	30.1
Humans should manage fish and wildlife populations so that humans benefit.	2105	5.29	3.8	3.7	5.3	16.1	18.1	24.8	28.3
Managing deer and other wildlife on my land is central to who I am.	2091	4.82	4.5	5.4	4.9	29.3	20.0	16.4	19.6
Fish and wildlife are on earh primarily for people to use.	2093	4.31	12.6	10.1	8.1	18.6	19.4	16.5	14.8
The needs of humans should take	2097	4.10	14.1	11.2	11.4	18.7	17.7	12.6	14.3

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	N	Mean	Strongly disagree	Moderately disagree	Slightly disagree	Neither	Slightly agree	Moderately agree	Strongly agree
priority over fish and wildlife protection.									
Managing deer on my land is something I rarely think about.	2119	3.69	21.8	14.7	12.8	10.2	16.3	12.7	11.6
Hunting does not respect the lives of animals.	2073	2.30	48.5	17.0	9.8	14.1	4.7	2.7	3.0
Hunting is cruel and inhumane to the animals.	2079	1.95	59.9	15.3	6.6	11.1	4.0	1.3	1.7

Means based on a seven-point scale from strongly disagree (1) to strongly agree (7).

Table 8-4. Strategies to lower deer population: Earn-a-Buck.

	Strata	Most preferred (1)	Second most preferred (2)	Third most preferred (3)	Third least preferred (4)	Second least preferred (5)	Least preferred (6)
	All	16.9%	10.2%	13.1%	10.8%	14.8%	34.1%
North	Small	13.8%	12.7%	13.1%	11.2%	17.3%	31.9%
	Medium	15.2%	10.1%	16.2%	11.8%	13.8%	33.0%
	Large	22.4%	11.0%	15.6%	11.0%	11.0%	28.9%
South	Small	15.4%	7.5%	7.2%	10.5%	18.0%	41.3%
	Medium	14.1%	9.8%	13.8%	10.4%	16.1%	35.7%
	Large	21.0%	10.7%	13.1%	10.4%	12.5%	32.3%
		χ^2 =43.377*					

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant.

Table 8-5. Strategies to lower deer population: Buck license lottery.

	Strata	Most preferred (1)	Second most preferred (2)	Third most preferred (3)	Third least preferred (4)	Second least preferred (5)	Least preferred (6)
	All	7.8%	6.2%	9.4%	7.4%	16.2%	53.1%
North	Small	9.1%	5.3%	11.0%	6.1%	13.3%	55.1%
	Medium	8.1%	7.1%	8.8%	9.2%	14.9%	51.9%
	Large	9.6%	7.7%	6.9%	9.6%	15.7%	50.6%
South	Small	5.6%	7.6%	7.9%	5.3%	17.2%	56.4%
	Medium	8.7%	5.2%	8.7%	6.7%	17.2%	53.5%
	Large	5.8%	4.6%	12.6%	8.0%	18.1%	50.9%
		χ^2 =27.050^{ns}					

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant.

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Table 8-6. Strategies to lower deer population: Antler point restriction.

	Strata	Most preferred (1)	Second most preferred (2)	Third most preferred (3)	Third least preferred (4)	Second least preferred (5)	Least preferred (6)
	All	35.7%	12.5%	12.7%	9.9%	8.8%	20.5%
North	Small	35.1%	14.5%	13.7%	10.3%	8.4%	17.9%
	Medium	37.5%	13.2%	9.5%	13.2%	9.8%	16.9%
	Large	36.3%	12.0%	13.5%	9.3%	8.5%	20.5%
South	Small	41.7%	10.9%	12.9%	9.6%	6.6%	18.2%
	Medium	32.0%	11.0%	13.8%	8.6%	7.8%	26.8%
	Large	32.3%	13.7%	12.8%	8.8%	11.3%	21.0%
		$\chi^2 = 30.948^{ns}$					

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant.

Table 8-7. Strategies to lower deer population: Early antlerless season.

	Strata	Most preferred (1)	Second most preferred (2)	Third most preferred (3)	Third least preferred (4)	Second least preferred (5)	Least preferred (6)
	All	20.1%	17.2%	20.0%	13.4%	7.8%	21.5%
North	Small	16.7%	13.2%	20.5%	17.8%	9.3%	22.5%
	Medium	19.6%	18.2%	18.2%	14.2%	9.5%	20.3%
	Large	17.1%	19.5%	21.8%	12.5%	4.7%	24.5%
South	Small	19.0%	19.0%	18.7%	13.0%	6.7%	23.7%
	Medium	21.7%	17.6%	17.1%	10.4%	10.1%	23.1%
	Large	24.8%	15.6%	24.2%	13.5%	6.1%	15.9%
		$\chi^2 = 39.596$*					

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant.

Table 8-8. Strategies to lower deer population: limited depredation permits

	Strata	Most preferred (1)	Second most preferred (2)	Third most preferred (3)	Third least preferred (4)	Second least preferred (5)	Least preferred (6)
	All	25.3%	18.5%	20.6%	12.0%	9.2%	14.4%
North	Small	18.8%	20.7%	23.8%	12.3%	8.8%	15.7%
	Medium	24.4%	15.6%	22.4%	13.2%	9.8%	14.6%
	Large	22.9%	21.7%	17.1%	14.3%	11.6%	12.4%
South	Small	26.6%	17.9%	19.6%	11.3%	8.3%	16.3%
	Medium	23.6%	18.7%	21.3%	11.0%	9.8%	15.6%

	Large	33.5%	16.9%	19.6%	10.6%	7.3%	12.1%
		χ^2 =31.655^{ns}					

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant.

Table 8-9. Strategies to lower deer population: Localized special seasons.

	Strata	Most preferred (1)	Second most preferred (2)	Third most preferred (3)	Third least preferred (4)	Second least preferred (5)	Least preferred (6)
	All	16.5%	12.0%	19.2%	13.4%	10.8%	28.1%
North	Small	14.9%	11.1%	20.3%	13.0%	13.8%	26.8%
	Medium	11.5%	12.8%	21.6%	13.2%	10.5%	30.4%
	Large	18.1%	10.4%	20.1%	12.4%	13.1%	25.9%
South	Small	16.3%	11.0%	20.9%	14.0%	8.3%	29.6%
	Medium	15.2%	12.1%	18.1%	15.8%	10.3%	28.4%
	Large	22.4%	14.2%	14.8%	11.8%	9.4%	27.3%
		χ^2 =30.190^{ns}					

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant.

Table 8-10. Opinions about localized seasons: In general, I support the idea of firearms hunts on private lands either before or after the regular season.

	Strata	N	Mean	Strongly disagree	Moderately disagree	Slightly disagree	Neither	Slightly agree	Moderately agree	Strongly agree
	All	2048	3.8	23.7%	9.1%	6.4%	17.7%	17.5%	14.2%	11.3%
North	Small	305	3.8	21.3%	12.5%	5.6%	18.4%	18.4%	13.8%	10.2%
	Medium	350	3.8	22.9%	8.9%	6.9%	19.1%	22.0%	13.1%	7.1%
	Large	296	3.6	25.7%	11.8%	6.8%	18.2%	14.2%	12.5%	10.8%
South	Small	339	3.8	26.5%	6.2%	6.5%	18.6%	17.4%	13.3%	11.5%
	Medium	394	3.8	24.9%	9.4%	7.4%	17.5%	16.8%	12.7%	11.4%
	Large	364	4.2	21.2%	6.9%	5.5%	14.6%	15.9%	19.5%	16.5%
		F=3.211*								

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant; means based on a seven-point scale from strongly disagree (1) to strongly agree (7).

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Table 8-11. Perceptions about localized seasons: I would prefer that such a season be before the regular firearm deer season in late summer (August-Sept.).

	Strata	N	Mean	Strongly disagree	Moderately disagree	Slightly disagree	Neither	Slightly agree	Moderately agree	Strongly agree
	All	2015	2.8	37.7%	12.8%	10.5%	23.4%	6.6%	4.3%	4.8%
North	Small	302	2.8	37.1%	12.3%	11.9%	23.5%	6.0%	5.6%	3.6%
	Medium	344	2.8	34.9%	12.2%	12.2%	25.3%	9.0%	3.2%	3.2%
	Large	293	2.7	40.3%	12.3%	9.9%	24.6%	5.8%	3.8%	3.4%
South	Small	333	2.7	41.7%	10.5%	11.1%	21.6%	6.9%	3.3%	4.8%
	Medium	386	2.7	38.9%	15.0%	10.4%	22.5%	5.4%	2.8%	4.9%
	Large	357	3.1	33.6%	14.0%	7.6%	23.0%	6.4%	7.3%	8.1%
		F=2.606*								

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant; means based on a seven-point scale from strongly disagree (1) to strongly agree (7).

Table 8-12. Perceptions about localized seasons: I would prefer that such a season be before the regular firearm deer season in early fall (mid-Sept.- early Oct.).

	Strata	N	Mean	Strongly disagree	Moderately disagree	Slightly disagree	Neither	Slightly agree	Moderately agree	Strongly agree
	All	2010	3.2	32.7%	10.9%	8.2%	21.6%	11.5%	8.6%	6.4%
North	Small	304	3.3	31.3%	10.2%	7.6%	22.4%	11.8%	10.9%	5.9%
	Medium	342	3.2	30.4%	9.9%	9.4%	24.0%	13.7%	7.6%	5.0%
	Large	292	3.0	34.9%	12.7%	8.6%	20.5%	9.2%	8.2%	5.8%
South	Small	334	3.1	37.1%	9.9%	6.9%	20.4%	10.5%	9.0%	6.3%
	Medium	383	3.1	33.7%	11.5%	8.9%	21.9%	11.7%	6.8%	5.5%
	Large	355	3.4	29.3%	11.3%	7.6%	20.6%	11.8%	9.6%	9.9%
		$F=1.914^{ns}$								

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant; means based on a seven-point scale from strongly disagree (1) to strongly agree (7).

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Table 8-13. Perceptions about localized seasons: I would prefer that such a season be after the muzzleloader deer season (mid-Dec.).

	Strata	N	Mean	Strongly disagree	Moderately disagree	Slightly disagree	Neither	Slightly agree	Moderately agree	Strongly agree
	All	2009	3.9	21.0%	7.0%	6.7%	25.7%	14.5%	12.4%	12.7%
North	Small	304	3.9	18.1%	7.2%	6.3%	30.3%	16.8%	12.2%	9.2%
	Medium	342	3.9	19.9%	8.2%	8.2%	26.9%	14.3%	10.8%	11.7%
	Large	287	3.9	21.3%	7.7%	4.9%	28.9%	13.6%	10.8%	12.9%
South	Small	333	3.9	24.9%	4.2%	7.5%	23.4%	14.7%	12.6%	12.6%
	Medium	388	4.0	21.9%	6.4%	6.4%	24.0%	14.4%	14.2%	12.6%
	Large	355	4.1	19.4%	8.2%	6.8%	22.3%	13.2%	13.5%	16.6%
		$F=0.579^{ns}$								

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant; means based on a seven-point scale from strongly disagree (1) to strongly agree (7).

Table 8-14. Perceptions about localized seasons: I would prefer that such a season be after all season are over (January).

	Strata	N	Mean	Strongly disagree	Moderately disagree	Slightly disagree	Neither	Slightly agree	Moderately agree	Strongly agree
	All	2008	3.6	26.2%	8.6%	5.9%	27.2%	12.2%	9.8%	10.2%
North	Small	302	3.7	24.2%	7.9%	7.3%	27.5%	11.6%	12.3%	9.3%
	Large	341	3.5	24.9%	10.6%	5.0%	28.7%	13.8%	9.7%	7.3%
	Medium	290	3.7	24.8%	6.6%	5.5%	32.8%	12.1%	6.9%	11.4%
South	Small	334	3.6	29.3%	6.9%	5.7%	23.7%	13.2%	9.9%	11.4%
	Medium	388	3.6	26.8%	9.3%	6.2%	25.0%	10.6%	11.3%	10.8%
	Large	353	3.6	26.6%	9.6%	5.9%	26.9%	11.9%	8.2%	10.8%
		$F=0.258^{ns}$								

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P≤ 0.05; ns=not significant; means based on a seven-point scale from strongly disagree (1) to strongly agree (7).

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Table 8-15. Strategies to lower deer population: Localized special seasons: Hunters vs. Non-hunters.

Strata	N	Most preferred (1)	Second most preferred (2)	Third most preferred (3)	Third least preferred (4)	Second least preferred (5)	Least preferred (6)
Hunters	1222	14.8%	11.2%	19.6%	15.1%	11.2%	28.2%
Non-hunters	573	20.1%	13.8%	18.3%	9.9%	9.8%	28.1%
		χ^2 =17.34, P = 0.004					

Table 8-16. Opinions about localized seasons: In general, I support the idea of firearms hunts on private lands either before or after the regular season: Hunters vs. Non-hunters.

Strata	N	Strongly disagree	Moderately disagree	Slightly disagree	Neither	Slightly agree	Moderately agree	Strongly agree
Hunters	1286	27.3%	9.7%	6.5%	13.1%	18.4%	13.8%	11.2%
Non-hunters	762	17.7%	8.1%	6.4%	25.5%	25.9%	14.8%	11.5%
	Chi-Sq = 142.4, P < 0.001							

Table 8-17. Perceptions about localized seasons: I would prefer that such a season be before the regular firearm deer season in late summer (August-Sept.): Hunters vs. Non-hunters.

Strata	N	Strongly disagree	Moderately disagree	Slightly disagree	Neither	Slightly agree	Moderately agree	Strongly agree
Hunters	1273	45.0%	12.9%	11.2%	15.6%	6.0%	4.3%	4.9%
Non-hunters	742	25.1%	12.7%	9.2%	36.7%	7.7%	4.3%	4.4%
	Chi-Sq = 147.3, P < 0.001							

Section 8: Perceptions about deer management

Table 8-18. Perceptions about localized seasons: I would prefer that such a season be before the regular firearm deer season in early fall (mid-Sept.- early Oct.): Hunters vs. Non-hunters.

Strata	N	Strongly disagree	Moderately disagree	Slightly disagree	Neither	Slightly agree	Moderately agree	Strongly agree
Hunters	1274	39.7%	11.1%	8.0%	14.1%	11.1%	9.3%	6.7%
Non-hunters	736	20.7%	10.5%	8.4%	34.8%	12.2%	7.5%	6.0%
	Chi-Sq = 147.3, P < 0.001							

Table 8-19. Perceptions about localized seasons: I would prefer that such a season be after the muzzleloader deer season (mid-Dec.): Hunters vs. Non-hunters.

Strata	N	Strongly disagree	Moderately disagree	Slightly disagree	Neither	Slightly agree	Moderately agree	Strongly agree
Hunters	1271	23.9%	8.1%	6.6%	17.2%	15.3%	13.8%	14.9%
Non-hunters	738	15.9%	5.0%	6.9%	40.4%	13.0%	10.0%	8.8%
	Chi-Sq = 139.3, P < 0.001							

Table 8-20. Perceptions about localized seasons: I would prefer that such a season be after all season are over (January).

Strata	N	Strongly disagree	Moderately disagree	Slightly disagree	Neither	Slightly agree	Moderately agree	Strongly agree
Hunters	1271	30.6%	9.4%	6.5%	20.1%	11.6%	10.6%	11.2%
Non-hunters	737	18.6%	7.2%	4.9%	39.5%	13.2%	8.3%	8.4%
	Chi-Sq = 101.6, P < 0.001							

Section 9: Property characteristics and sociodemographics

Findings:

Property characteristics

Respondents were asked to report the total number of acres they owned or leased at the end of 2011. For approximately 20% of small landowners, the self-report of acreage exceeded the acreage used for assignment based on property tax records. We decided not to correct for potential miss assignment because we did not specify in the questionnaire where the property was located and so the acreage reports might include properties outside the study area. We also had concerns that the self-reports might be inflated estimates. For this reason, the mean property size estimate of small landowners slightly exceeds the critera used for assignment (40-79 acres). The potential miscategorization suggests that any difference among the small strata and other strata could be underestimates.

Overall, respondents owned an average of 265 acres and leased 314 acres (i.e. as lessees) at the end of 2011 (Table 9-1). Respondents were also asked to report acres owned and leased by type of land. On average, the highest number of acres respondents across the six strata owned (159 acres) and leased (253 acres) were in row crops. Among the various types of land listed, the highest total acres respondents owned was in row crops (262,364 acres), followed by woodlands (140,845 acres) and hay/pasture (88,421 acres) (Tables 9-2 to 9-11). Respondents owned and leased relatively fewer acres in orchards/vineyards, vegetables, brushland and wetlands. In addition, respondents owned an average of 45 acres and leased 55 acres of land enrolled in State or Federal Conservation Programs (Table 9-10).

Sociodemographics

A vast majority of respondents in all six strata were male (86% to 93%, Table 9-12). Median total household income before taxes across the six strata ranged from $75,000 to $85,000. There were no significant differences among respondents in the six strata in mean income (Table 9-13). The mean age of respondents was 60. Large landowners in the north and medium landowners in the south (Mean= 61) were significantly older than small landowners in the north and south (Mean=58) (Table 9-14). Overall, 45% of respondents have attended some college. A significantly greater proportion of medium landowners in the south (17%) have a graduate or professional degree.

Section 9: Property characteristics and sociodemographics

Table 9-1. Total acres owned and leased.

	Strata	Acres owned			Acres leased		
		N	Mean	Sum	N	Mean	Sum
	All	2212	264.9	586039	486	314.1	152641
North	Small	333	86.8	28895	45	263.4	11854
	Medium	386	215.2	83066	95	379.7	36069
	Large	317	554.2	175673	114	366.2	41744
South	Small	367	92.1	33808	46	173.4	7978
	Medium	425	185.7	78906	64	230.1	14727
	Large	384	483.6	185691	122	330.1	40270

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned.

Table 9-2. Total acres owned and leased: Private residence.

	Strata	Acres owned			Acres leased		
		N	Mean	Sum	N	Mean	Sum
	All	1714	14.6	24981	95	28.5	2707
North	Small	263	10.4	2737	5	55.4	277
	Medium	301	10.9	3275	18	21.2	381
	Large	265	25.2	6664	25	40.6	1016
South	Small	262	6.3	1641	8	5.4	43
	Medium	312	13.6	4232	18	25.0	450
	Large	311	20.7	6432	21	25.7	540

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned.

Table 9-3. Acres owned and leased: Row crops.

	Strata	Acres owned			Acres leased		
		N	Mean	Sum	N	Mean	Sum
	All	1651	158.9	262364	450	253.3	114000
North	Small	219	49.9	10930	45	211.3	9508
	Medium	315	146.9	46258	92	306.1	28160
	Large	288	335.4	96589	103	330.7	34062
South	Small	191	54.9	10481	45	111.8	5029
	Medium	301	76.0	22879	57	129.5	7384
	Large	337	223.2	75228	108	276.5	29858

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned.

Section 9: Property characteristics and sociodemographics

Table 9-4. Acres owned and leased: Hay fields or pasture.

	Strata	Acres owned			Acres leased		
		N	Mean	Sum	N	Mean	Sum
	All	1386	63.8	88421	268	66.1	17722
North	Small	151	27.2	4102	23	51.5	1184
	Medium	225	52.1	11713	50	84.6	4231
	Large	228	95.5	21777	55	52.4	2882
South	Small	189	22.9	4324	32	44.8	1435
	Medium	293	40.4	11832	38	43.5	1654
	Large	300	115.6	34674	70	90.5	6336

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned.

Table 9-5. Acres owned and leased: Orchards or vineyards.

	Strata	Acres owned			Acres leased		
		N	Mean	Sum	N	Mean	Sum
	All	122	9.2	1123	7	11.7	82
North	Small	14	5.4	76	0	.	.
	Medium	16	6.5	105	2	1.5	3
	Large	13	20.3	264	0	.	.
South	Small	34	4.6	155	1	52.0	52
	Medium	24	10.4	248	4	6.8	27
	Large	21	13.2	276	0	.	.

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned.

Table 9-6. Acres owned and leased: Vegetables or other truck crops.

	Strata	Acres owned			Acres leased		
		N	Mean	Sum	N	Mean	Sum
	All	123	30.5	3753	20	78.6	1572
North	Small	17	8.0	135	2	26.0	52
	Medium	14	24.5	343	6	90.8	545
	Large	27	44.6	1204	5	76.4	382
South	Small	22	7.2	157	0	.	.
	Medium	28	32.1	899	4	87.5	350
	Large	15	67.7	1016	3	81.0	243

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned.

Section 9: Property characteristics and sociodemographics

Table 9-7. Acres owned and leased: Woodlands (natural forest or tree plantings).

	Strata	Acres owned			Acres leased		
		N	Mean	Sum	N	Mean	Sum
	All	1680	83.8	140845	148	90.0	13316
North	Small	247	33.4	8249	14	67.9	950
	Medium	244	55.2	13474	27	93.6	2526
	Large	226	126.4	28570	23	75.6	1739
South	Small	304	43.6	13269	27	88.3	2383
	Medium	351	73.9	25925	23	96.9	2229
	Large	308	166.7	51357	34	102.6	3490

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned.

Table 9-8. Acres owned and leased: Brushland (including abandoned, overgrown fields).

	Strata	Acres owned			Acres leased		
		N	Mean	Sum	N	Mean	Sum
	All	404	23.0	9296	33	19.6	648
North	Small	62	10.9	674	4	28.8	115
	Medium	76	20.6	1563	7	18.4	129
	Large	53	45.8	2425	8	29.9	239
South	Small	59	12.9	764	4	4.8	19
	Medium	84	19.7	1652	8	16.8	134
	Large	70	31.7	2218	2	6.0	12

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned.

Table 9-9. Acres owned and leased: Wetlands.

	Strata	Acres owned			Acres leased		
		N	Mean	Sum	N	Mean	Sum
	All	259	14.9	3849	22	20.7	456
North	Small	37	10.9	403	4	7.3	29
	Medium	40	14.0	561	9	24.1	217
	Large	58	23.2	1345	6	19.2	115
South	Small	39	13.8	537	0	.	.
	Medium	40	11.6	463	2	7.5	15
	Large	45	12.0	541	1	80.0	80

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned.

Section 9: Property characteristics and sociodemographics

Table 9-10. Acres owned and leased: Lands enrolled in State or Federal Conservation Programs.

	Strata	Acres owned			Acres leased		
		N	Mean	Sum	N	Mean	Sum
	All	461	44.5	20493	33	54.5	1797
North	Small	42	30.7	1287	5	55.8	279
	Medium	65	40.1	2606	7	44.0	308
	Large	70	61.6	4313	6	23.7	142
South	Small	78	23.6	1840	4	14.7	59
	Medium	92	32.9	3027	4	33.8	135
	Large	114	65.1	7419	7	124.9	875

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned.

Table 9-11. Acres owned and leased: Other.

	Strata	Acres owned			Acres leased		
		N	Mean	Sum	N	Mean	Sum
	All	124	63.0	7806	13	182.1	2368
North	Small	19	33.6	638	2	17.5	35
	Medium	28	22.0	616	2	8.8	18
	Large	19	47.4	901	0	.	.
South	Small	16	23.3	374	3	70.0	210
	Medium	21	83.7	1758	2	227.5	455
	Large	21	167.6	3520	4	412.5	1650

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned.

Table 9-12. Gender.

	Strata	Male	Female
	All	88.7%	11.3%
North	Small	86.4%	13.6%
	Medium	86.5%	13.5%
	Large	90.9%	9.1%
South	Small	86.9%	13.1%
	Medium	88.9%	11.1%
	Large	92.7%	7.3%
		χ^2=12.365*	

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P ≤ 0.05, ns=not significant.

Table 9-13. Income.

	Strata	N	Mean	Median	Range

Section 9: Property characteristics and sociodemographics

	All	1274	117,429	80,000	1-5,000,000
North	Small	193	109,696	83,500	70-1,000,000
	Medium	199	107,184	75,000	100-600,000
	Large	168	132,235	80,000	1000-1,600,000
South	Small	239	98,895	80,000	12000-1,000,000
	Medium	255	112,522	75,000	1-1,200,000
	Large	222	147,665	80,000	10,000-5,000,000
		$F=0.585^{ns}$			

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P ≤ 0.05, ns=not significant.

Table 9-14. Age.

	Strata	N	Mean	Median	Minimum	Maximum
	All	2035	60	59	25	99
North	Small	305	58	58	27	91
	Medium	351	60	59	29	95
	Large	289	61	60	28	90
South	Small	339	58	57	27	94
	Medium	385	61	61	26	99
	Large	366	60	60	25	91
		F=4.175*				

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P ≤ 0.05, ns=not significant.

Table 9-15. Education.

	Strata	Grade school	Some high school	High school diploma or GED	Some vocational or technical school	Vocational or technical school (Associate's)	Some college	4-year college (Bachelor's)	Some grad. school	Grad. or prof. degree
	All	1.8%	2.8%	26.8%	9.0%	14.7%	14.2%	15.7%	3.8%	11.2%
North	Small	.9%	1.9%	23.6%	10.2%	13.4%	14.9%	17.1%	4.0%	14.0%
	Medium	1.6%	1.9%	32.9%	8.0%	13.9%	11.8%	16.6%	4.3%	9.1%
	Large	1.3%	4.3%	36.4%	9.5%	13.8%	14.1%	13.1%	1.6%	5.9%
South	Small	2.0%	1.1%	20.6%	6.0%	13.8%	17.8%	18.6%	2.9%	17.2%
	Medium	3.0%	4.9%	20.7%	10.6%	15.0%	12.6%	15.8%	6.2%	11.3%
	Large	1.6%	2.6%	27.8%	9.5%	17.7%	14.3%	13.2%	3.4%	9.8%
		$\chi^2=100.938$*								

Strata: small = 40-79 acres owned, medium = 80-250 acres owned, large >250 acres owned; *P ≤ 0.05, ns=not significant.

References

Dillman, D. A., Smyth, J. D., & Christian, L. M. (2009). *Internet, mail, and mixed-mode surveys: The tailored design method*. Wiley & Sons.

Appendix A: Survey Mailed to Landowners

Appendix A: Survey mailed to landowners

2012 STUDY OF DEER MANAGEMENT ON PRIVATE LANDS IN SOUTHEAST MINNESOTA

A cooperative study conducted by the University of Minnesota for the Minnesota Department of Natural Resources

Your help on this study is greatly appreciated!

Please return your completed questionnaire in the enclosed envelope. The envelope is self-addressed and no postage is required. Thanks!

Minnesota Cooperative Fish and Wildlife Research Unit
Department of Fisheries, Wildlife, and Conservation Biology
University of Minnesota
St. Paul, Minnesota 55108

Appendix A: Survey mailed to landowners

First, we would like to know about your property.

1. How many total number of acres did you own or lease at the end of 2011.

   _____ Acres Owned
   _____ Acres Leased

2. Please make a "rough" estimate as to how many acres of your property (owned and leased) are in each of the following categories:

Acres Owned	Acres Leased	Land Type
_____	_____	Private Residence (house, lawns, associated buildings)
_____	_____	Row Crops
_____	_____	Hay fields or Pasture
_____	_____	Orchards or vineyards
_____	_____	Vegetables or other truck crops
_____	_____	Woodlands (natural forest or tree plantings)
_____	_____	Brushland (including abandoned, overgrown fields)
_____	_____	Wetlands
_____	_____	Lands enrolled in State or Federal Conservation Programs
_____	_____	Other (please list:_____)

Next we would like to understand how you manage hunting on your land.

3. Is your property posted? Posting means signs displayed on the property line that indicate the land is private.
   - ❑ Yes
   - ❑ No → PLEASE SKIP TO QUESTION 6

4. Please indicate whether you agree or disagree with the following reasons for posting your property:

	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
(A) Control who uses my land	1	2	3	4	5	6	7
(B) Human safety	1	2	3	4	5	6	7
(C) Liability concerns	1	2	3	4	5	6	7
(D) Eliminate trespass	1	2	3	4	5	6	7
(E) Keep wildlife for myself/family/friends	1	2	3	4	5	6	7
(F) Reduce property damage	1	2	3	4	5	6	7
(G) Livestock safety	1	2	3	4	5	6	7
(H) Relationship with neighbor	1	2	3	4	5	6	7
(I) Better control of deer population	1	2	3	4	5	6	7
(J) Family tradition	1	2	3	4	5	6	7

Question 4 continued.

	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
(K) Conflict with other recreational users	1	2	3	4	5	6	7
(L) Other (please describe below):	1	2	3	4	5	6	7

5. Did a single event cause you to post your property? (*Check only one*)
   - ❑ Yes. If yes, please choose the one letter (select one from A through L) from **question 4** that best describes why you posted your property: _____
   - ❑ No

6. Did you allow hunting on your property during the 2011 deer season? (*Check only one*)
   - ❑ Yes
   - ❑ No→**PLEASE SKIP TO QUESTION 9**

7. Who did you allow to hunt deer on your property? (*Check all that apply*). Please also estimate the number of people who hunted your property in 2011.
   - ❑ Myself or family members _____ # of people
   - ❑ Friends or neighbors _____ # of people
   - ❑ Strangers who ask permission _____ # of people
   - ❑ Specific groups of people who are affiliated with an organized hunting group _____ # of people
   - ❑ People who lease my property _____ # of people
   - ❑ Other (please list: _____) _____ # of people

8. Please indicate if you impose any deer harvest restrictions on your property. (*Please check <u>one only</u>*)
   - ❑ Antlerless harvest is restricted, but hunters can take any legal buck
   - ❑ Buck harvest is restricted to only large antlered bucks, but hunters can take any antlerless deer
   - ❑ Buck harvest restricted to only large antlered bucks, and antlerless harvest is also restricted
   - ❑ No restrictions on the type of deer that can be harvested
   - ❑ Don't know
   - ❑ Other (please list: _____)

9. To what extent do you agree or disagree with the following statements regarding your decision about allowing or not allowing deer hunting on your property. (*Please circle one number for each statement*)

	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Hunting will reduce the number of deer on my property.	1	2	3	4	5	6	7
Hunting is a tradition in my family.	1	2	3	4	5	6	7
I feel pressure from my neighbors to allow hunting.	1	2	3	4	5	6	7
Hunting will reduce the number of mature bucks on my property.	1	2	3	4	5	6	7

Question 9 continued.

	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Allowing other hunters on my property will reduce my or my family's opportunity to hunt deer.	1	2	3	4	5	6	7
Hunters cause too many problems.	1	2	3	4	5	6	7
I am concerned about the liability of other hunters on my property.	1	2	3	4	5	6	7
I am opposed to deer hunting in general.	1	2	3	4	5	6	7
I am not opposed to hunting, but I want to provide a refuge for deer.	1	2	3	4	5	6	7
Hunting reduces my privacy.	1	2	3	4	5	6	7
Hunting reduces damage caused by deer on my property.	1	2	3	4	5	6	7
Hunting improves the quality of habitat on my property.	1	2	3	4	5	6	7
Hunting on my property will help keep deer from being over-abundant in the area.	1	2	3	4	5	6	7
Letting others hunt on my property encourages a hunting tradition.	1	2	3	4	5	6	7
Hunting puts my livestock at risk.	1	2	3	4	5	6	7

10. To what extent do you agree or disagree with the following statements about your <u>future decisions</u> about allowing other people to hunt deer on your property. (*Please circle one number for each statement below*).

I would be more likely to allow or continue to allow other people to deer hunt on my property if…	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
The hunters would help me out by working on the property.	1	2	3	4	5	6	7
I felt like they were interested in getting to know me and understanding what I'm trying to do on my property.	1	2	3	4	5	6	7
I knew that they were safe and ethical hunters.	1	2	3	4	5	6	7
The hunters or an outfitter would pay me in order to hunt.	1	2	3	4	5	6	7
The Minnesota DNR would pay me to allow others to hunt.	1	2	3	4	5	6	7
They follow the rules I have for hunting on my property.	1	2	3	4	5	6	7

11. Do you lease any of your property for deer hunting?
    - ❑ Yes
    - ❑ No→PLEASE SKIP TO QUESTION 13

12. Please indicate to the extent you agree or disagree regarding your decision to lease your property to deer hunters. (*Please circle one number for each statement below*).

	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
I have better control over who is using my land.	1	2	3	4	5	6	7
I have better control over the type of deer that are harvested.	1	2	3	4	5	6	7
I am managing my property for mature bucks.	1	2	3	4	5	6	7
Leasing allows me to earn extra money from my property.	1	2	3	4	5	6	7
I feel pressure from my neighbors who also lease their property.	1	2	3	4	5	6	7
I see leasing as the future way landowners can manage their property	1	2	3	4	5	6	7
Other (please describe below):	1	2	3	4	5	6	7

In the next section we have questions about your deer hunting participation in Minnesota.

13. To what extent would you support or oppose a regulation that would increase the proportion of antlered bucks in the deer area you hunt most often? (*Please check one only*).

    - ❑ Strongly Oppose
    - ❑ Moderately Oppose
    - ❑ Neither Oppose nor Support
    - ❑ Moderately Support
    - ❑ Strongly Support
    - ❑ Don't Know

14. Please check the boxes below to report when you hunted deer in Minnesota during the 2009, 2010 or 2011 Minnesota deer season? (*Please check all that apply*).
    - ❑ 2009→ ❒ Archery | ❒ Firearm | ❒ Muzzleloader
    - ❑ 2010→ ❒ Archery | ❒ Firearm | ❒ Muzzleloader
    - ❑ 2011→ ❒ Archery | ❒ Firearm | ❒ Muzzleloader

❑ I DID NOT HUNT ANY OF THESE YEARS→**PLEASE SKIP TO QUESTION 20 BELOW**

15. Which **ONE** deer permit area did you hunt most often during the most recent deer season you hunted ***(check one)***:

❑ 338 |❑ 339 |❑ 341 | ❑ 342 |❑ 343 | ❑ 344 | ❑ 345 | ❑ 346 | ❑ 347 | ❑ 348 |❑ 349 | ❑ 602

If you did not hunt one of the permit areas listed above, please tell us which one you did hunt: _____

16. How much of your deer hunting did you do on each of the following types of land during your most recent deer hunting season? (*Circle one number for each item*).

	None	Some	Most	All	Don't Know
Private land that I own	1	2	3	4	9
Private land that I lease for hunting	1	2	3	4	9
Private land that I do **not** own or lease	1	2	3	4	9
Public land	1	2	3	4	9

The next section will address deer populations and harvest management strategies in southeastern Minnesota. Please answer the questions to the best of your ability, even if you are not entirely familiar with the deer regulations. The regulations we refer to in this survey include:

- **A 4-point to one side antler point restriction regulation for all deer seasons**
- **A prohibition on buck cross-tagging**
- **The 3A season was lengthened to 9 days (from 7).**
- **Youth hunters (17 or younger) are exempt from the regulation and can take any buck**

17. The regulations that were put in place in southeastern Minnesota in 2010 were designed to put more harvest pressure on antlerless deer and at the same time protect a large percentage of yearling bucks. In thinking back to when the regulations were announced before the 2010 deer season, please indicate your level of support at that time (again, *prior* to the 2010 deer season).

❑ Strongly Opposed
❑ Slightly Opposed
❑ Neither Opposed nor Supported
❑ Slightly Supported
❑ Strongly Supported
❑ Don't Know

18. After hunting under the antler point restriction regulations, please indicate whether or not your overall satisfaction with your hunting experience in southeastern Minnesota may have changed over time. (*Circle one response*)

1	2	3	4	5	6	7
Much Less Satisfied	Somewhat Less Satisfied	Slightly Less Satisfied	No Change	Slightly More Satisfied	Somewhat More Satisfied	Much More Satisfied

19. After hunting under the antler point restriction regulations, please indicate whether or not your support for antler point restrictions in southeastern Minnesota may have changed over time. (*Circle one response*)

1	2	3	4	5	6	7
Much Less Support	Somewhat Less Support	Slightly Less Support	No Change	Slightly More Support	Somewhat More Support	Much More Support

20. While no decision has been made to continue the following deer hunting regulations, please indicate your level of support for continuation of the regulations that were enacted in 2010. (*Please circle one number for each item*).

	Strongly Oppose	Slightly Oppose	Neither Oppose or Support	Slightly Support	Strongly Support	Don't Know
Keeping the 3A season at 9 days	1	2	3	4	5	9
Continue the 4-point to one side antler point restriction	1	2	3	4	5	9
Continue the prohibition of buck cross-tagging	1	2	3	4	5	9
Exemption of youth from the antler point restriction	1	2	3	4	5	9

21. Including 2011, how many years have you been hunting deer in Minnesota? _____ Years.

Please check this box ❒ if you have not hunted deer in Minnesota.

Next we would like to know about crop and other damage caused by wildlife on your property.

22. Did you experience deer damage to crops on lands that you own or leased in 2011?
    - ❑ Yes
    - ❑ No→PLEASE SKIP TO QUESTION 24
    - ❑ Don't have crops→PLEASE SKIP TO QUESTION 28

23. How would you describe the total amount of deer damage you experienced in 2011?
    - ❑ Negligible
    - ❑ Minor
    - ❑ Moderate
    - ❑ Severe
    - ❑ Don't Know

24. How would you compare the amount of deer damage you experienced in 2011 to what you experienced 5 years ago?
    - ❑ Much less damage in 2011 than 5 years ago
    - ❑ Slightly less damage in 2011 than 5 years ago
    - ❑ About the same damage in 2011 than 5 years ago

- ❑ Slightly more damage in 2011 than 5 years ago
- ❑ Much more damage in 2011 than 5 years ago
- ❑ I was not farming 5 years ago

25. In addition to deer, please indicate which other species caused damage to your crops in 2011. (*check <u>all</u> that apply*)
    - ❑ Raccoon
    - ❑ Turkey
    - ❑ Geese
    - ❑ Small rodents (mice, voles)
    - ❑ Gophers/Woodchucks
    - ❑ Other (please list: _____)

26. Of all the damage you attributed to wildlife in 2011, what percentage do you feel was due to deer? (*Please circle one percentage*).

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

27. In the table below, for each type of crop you grew in 2011, please provide your best estimate of the total acres you grew, the dollar value of deer damage to that crop, and the estimated percentage of the total crop value lost to deer damage.

Crop	Acres grown, 2011	Estimated dollar loss from deer damage to crop	Estimated percent of total crop value lost to deer damage
Corn	_____ acres	$ _____	_____% lost
Soybeans	_____ acres	$ _____	_____% lost
Alfalfa	_____ acres	$ _____	_____% lost
Other hay	_____ acres	$ _____	_____% lost
Tree fruits	_____ acres	$ _____	_____% lost
Grapes	_____ acres	$ _____	_____% lost
Stored Forage	_____ acres	$ _____	_____% lost
Nursery Products	_____ acres	$ _____	_____% lost
Vegetables	_____ acres	$ _____	_____% lost
Other: _____	_____ acres	$ _____	_____% lost
TOTALS	_____ acres	$ _____	_____% lost

In the next section we would like to understand your preferences for deer management.

28. Would you say you know A GREAT DEAL, A MODERATE AMOUNT, A LITTLE, OR NOTHING about deer management in southeastern Minnesota? (*Please check one only*).
    - ❑ A GREAT DEAL - I read most of the hunting handbook, DNR news releases, follow the outdoor media, and am very familiar with the Zone 3 deer season changes
    - ❑ A MODERATE AMOUNT - I read parts of the handbook and occasionally follow the outdoor media
    - ❑ A LITTLE - I only read the parts that pertain to me and otherwise don't follow the outdoor media
    - ❑ NOTHING - I buy my license but I am not following the southeast deer management issue

- ❑ DON'T KNOW

29. Over the past 5 years, what trend have you seen in the deer population in the area of your property?
    - ❑ More deer now than 5 years ago
    - ❑ About the same number of deer now as 5 years ago
    - ❑ Fewer deer now than 5 years ago
    - ❑ Don't know

30. In thinking about your property and the surrounding area, would you say the deer population is,
    - ❑ Too high
    - ❑ About right
    - ❑ Too low
    - ❑ Don't know

31. In thinking about your property and the surrounding area, at what level do you think the deer population should be managed? (*Please circle one*)

1	**2**	**3**	**4**	**5**	**6**	**7**
Decrease 50% (Significant)	Decrease 25% (Moderate)	Decrease 10% (Slight)	No Change	Increase 10% (Slight)	Increase 25% (Moderate)	Increase 50% (Significant)

32. During the last 5 years, about how many deer were killed on your property each year?

_____number of bucks/antlered deer each year
_____number of does/antlerless deer each year

33. How many deer would you prefer to have killed on your property each year?

_____number of bucks/antlered deer each year
_____number of does/antlerless deer each year

34. When you think about deer management in your area, to what extent do you agree or disagree with the following statements?

	Strongly Disagree	**Moderately Disagree**	**Slightly Disagree**	**Neither**	**Slightly Agree**	**Moderately Agree**	**Strongly Agree**
It is my personal responsibility to manage deer populations.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Landowners in my community should be responsible for managing deer populations.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
The Minnesota DNR should be responsible for managing deer populations.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
The Minnesota DNR should be responsible for talking to community members about managing deer populations.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
It is my personal responsibility to talk to others in my community about deer management.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Landowners in my community should talk to each other about managing deer populations.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
The deer populations in my community are	**1**	**2**	**3**	**4**	**5**	**6**	**7**

well managed.

35. With 1 being your most preferred and 6 being your least preferred, please rank (from 1 to 6) the following strategies that could be implemented to lower deer populations.

_____ **Earn-A-Buck**. This would require all deer hunters to kill an antlerless deer before killing an antlered buck. Under this regulation, hunters cannot shoot a buck until they first killed an antlerless deer. As a result, harvest rates on antlerless deer will increase.

_____ **Buck License Lottery**. The annual firearm license would be valid for antlerless deer only. Hunters interested in killing antlered bucks would need to apply for a permit through a lottery system. Only lottery winners would be eligible to hunt antlered deer. Unsuccessful applicants would be restricted to hunting antlerless deer during the current year, but would gain preference points in the lottery which would improve their chance of getting drawn for a buck license in future years. A hunter would likely win a buck permit every 2-3 years depending on hunting pressure.

_____ **Antler Point Restriction**. This regulation has been used since 2010. Only bucks with at least one 4-point antler would be legal to harvest. Hunters could take any antlerless deer.

_____ **Early Antlerless Season**. This regulation has been used since 2005. A 2-day antlerless only season would be implemented over the MEA weekend and deer taken during this season would not count against the annual bag limit.

_____ **Limited Depredation Permits**. These are permits issued to landowners that could be used during the deer season. The permits would be valid for antlerless deer only and only on specified private lands.

_____ **Localized special seasons**. These would be firearms hunts on private lands before or after the regular firearms season.

36. One idea for lowering deer populations in local areas is to develop localized special seasons. In general please let us know what you think about such seasons. Please circle one response to indicate how much you agree or disagree with each statement.

Do you agree or disagree with the following…	**Strongly Disagree**	**Moderately Disagree**	**Slightly Disagree**	**Neither**	**Slightly Agree**	**Moderately Agree**	**Strongly Agree**
In general I support the idea of firearms hunts on private lands either before or after the regular season.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
I would prefer that such a season be **before** the regular firearm deer season in **late summer (August-Sept.)**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
I would prefer that such a season be **before** the regular firearm deer season in **early fall (mid-Sept – early Oct.)**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
I would prefer that such a season be **after** the muzzleloader deer season (**mid-Dec**.)	**1**	**2**	**3**	**4**	**5**	**6**	**7**
I would prefer that such a season be **after** all the seasons are over (**January)**	**1**	**2**	**3**	**4**	**5**	**6**	**7**

37. To what extent do you agree or disagree with the following statements about managing your land, use of wildlife and how you see your community.

	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
Managing deer on my land is something I rarely think about.	1	2	3	4	5	6	7
Being a good private land wildlife steward is an important part of who I am.	1	2	3	4	5	6	7
I often think of myself as a good private land wildlife steward.	1	2	3	4	5	6	7
Managing deer and other wildlife on my land is central to who I am.	1	2	3	4	5	6	7
I feel strongly attached to the community I live in.	1	2	3	4	5	6	7
There are many people in my community who I think of as good friends.	1	2	3	4	5	6	7
I often talk about my community as being a great place to live.	1	2	3	4	5	6	7
Humans should manage fish and wildlife populations so that humans benefit.	1	2	3	4	5	6	7
We should strive for a world where there's an abundance of fish and wildlife for hunting and fishing.	1	2	3	4	5	6	7
Hunting does not respect the lives of animals.	1	2	3	4	5	6	7
The needs of humans should take priority over fish and wildlife protection.	1	2	3	4	5	6	7
Fish and wildlife are on earth primarily for people to use.	1	2	3	4	5	6	7
Hunting is cruel and inhumane to the animals.	1	2	3	4	5	6	7
People who want to hunt should be provided the opportunity to do so.	1	2	3	4	5	6	7
It is acceptable for people to kill wildlife, if they think it poses a threat to their life.	1	2	3	4	5	6	7
It is acceptable for people to kill wildlife, if it poses a threat to their property.	1	2	3	4	5	6	7

38. What is your gender?
    - ❑ Male
    - ❑ Female

39. What was your total household income before taxes last year? $ _____

40. What year were you born? _____YEAR

41. What is the highest level of formal education you have completed? *(Please check one).*

- ❑ Grade school
- ❑ Some high school
- ❑ High school diploma or GED
- ❑ Some vocational or technical school
- ❑ Vocational or technical school (associate's)
- ❑ Some college
- ❑ Four-year college (bachelor's)
- ❑ Some graduate school
- ❑ Graduate/Professional degree

Please write any additional comments you might have in the space below:

Thank you for your help!

Please complete the survey and mail it back in the enclosed self-addressed envelope. No postage is necessary.

Appendix A: Survey mailed to landowners

Non-Response Questions

First, we would like to know about your property.

1. How many total number of acres did you own at the end of 2011.

   _____ Acres

2. Is your property posted? Posting means signs displayed on the property line that indicate the land is private.
   - ❑ Yes
   - ❑ No

3. Did you allow hunting on your property during the 2011 deer season? (*Check only one*)
   - ❑ Yes
   - ❑ No→**PLEASE SKIP TO QUESTION 5**

4. Who did you allow to hunt deer on your property? (*Check all that apply*). Please also estimate the number of people who hunted your property in 2011.
   - ❑ Myself and/or family members _____ # of people
   - ❑ Friends or neighbors _____ # of people
   - ❑ Strangers who ask permission _____ # of people
   - ❑ Specific groups of people who are affiliated with an organized hunting group _____ # of people
   - ❑ People who lease my property _____ # of people
   - ❑ Other (please list: _____) _____ # of people

5. Do you lease any of your property for deer hunting?
   - ❑ Yes
   - ❑ No

6. To what extent would you support or oppose a regulation that would increase the proportion of antlered bucks in the deer area you hunt most often? (*Please check one only*).

   - ❑ Strongly Oppose
   - ❑ Moderately Oppose
   - ❑ Neither Oppose nor Support
   - ❑ Moderately Support
   - ❑ Strongly Support
   - ❑ Don't Know

7. Please check the boxes below to report when you hunted deer in Minnesota during the 2009, 2010 or 2011 Minnesota deer season? (*Please check all that apply*).

   ❑ 2009→ ❒ Archery | ❒ Firearm | ❒ Muzzleloader
   ❑ 2010→ ❒ Archery | ❒ Firearm | ❒ Muzzleloader
   ❑ 2011→ ❒ Archery | ❒ Firearm | ❒ Muzzleloader

   ❑ I DID NOT HUNT ANY OF THESE YEARS

The next section will address deer populations and harvest management strategies in southeastern Minnesota. Please answer the questions to the best of your ability, even if you are not entirely familiar with the deer regulations. The regulations we refer to in this survey include:

- **A 4-point to one side antler point restriction regulation for all deer seasons**
- **A prohibition on buck cross-tagging**
- **The 3A season was lengthened to 9 days (from 7).**
- **Youth hunters (17 or younger) are exempt from the regulation and can take any buck**

8. While no decision has been made to continue the following deer hunting regulations, please indicate your level of support for continuation of the regulations that were enacted in 2010. (*Please circle one number for each item*).

	Strongly Oppose	Slightly Oppose	Neither Oppose or Support	Slightly Support	Strongly Support	Don't Know
Keeping the 3A season at 9 days	1	2	3	4	5	9
Continue the 4-point to one side antler point restriction	1	2	3	4	5	9
Continue the prohibition of buck cross-tagging	1	2	3	4	5	9
Exemption of youth from the antler point restriction	1	2	3	4	5	9

9. Including 2011, how many years have you been hunting deer in Minnesota? _____ Years.
   Please check this box ❒ if you have not hunted deer in Minnesota.

Appendix A: Survey mailed to landowners

Next we would like to know about crop and other damage caused by wildlife on your property.

10. Did you experience deer damage to crops on lands that you own or leased in 2011?
    - ❑ Yes
    - ❑ No
    - ❑ Don't have crops

11. How would you describe the total amount of deer damage you experienced in 2011?
    - ❑ Negligible
    - ❑ Minor
    - ❑ Moderate
    - ❑ Severe
    - ❑ Don't Know

12. How would you compare the amount of deer damage you experienced in 2011 to what you experienced 5 years ago?
    - ❑ Much less damage in 2011 than 5 years ago
    - ❑ Slightly less damage in 2011 than 5 years ago
    - ❑ About the same damage in 2011 than 5 years ago
    - ❑ Slightly more damage in 2011 than 5 years ago
    - ❑ Much more damage in 2011 than 5 years ago
    - ❑ I was not farming 5 years ago

In the next section we would like to understand your preferences for deer management.

13. Would you say you know A GREAT DEAL, A MODERATE AMOUNT, A LITTLE, OR NOTHING about deer management in southeastern Minnesota? (*Please check one only*).
    - ❑ A GREAT DEAL - I read most of the hunting handbook, DNR news releases, follow the outdoor media, and am very familiar with the Zone 3 deer season changes
    - ❑ A MODERATE AMOUNT - I read parts of the handbook and occasionally follow the outdoor media
    - ❑ A LITTLE - I only read the parts that pertain to me and otherwise don't follow the outdoor media
    - ❑ NOTHING - I buy my license but I am not following the southeast deer management issue
    - ❑ DON'T KNOW

14. Over the past 5 years, what trend have you seen in the deer population in the area of your property?
    - ❑ More deer now than 5 years ago
    - ❑ About the same number of deer now as 5 years ago
    - ❑ Fewer deer now than 5 years ago
    - ❑ Don't know

15. In thinking about your property and the surrounding area, would you say the deer population is,
    - ❑ Too high
    - ❑ About right
    - ❑ Too low
    - ❑ Don't know

16. In thinking about your property and the surrounding area, at what level do you think the deer population should be managed? (*Please circle one*)

1	**2**	**3**	**4**	**5**	**6**	**7**
Decrease 50% (Significant)	Decrease 25% (Moderate)	Decrease 10% (Slight)	No Change	Increase 10% (Slight)	Increase 25% (Moderate)	Increase 50% (Significant)

17. What is your gender?
    - ❑ Male
    - ❑ Female

18. What year were you born? _____YEAR

19. What is the highest level of formal education you have completed? *(Please check one).*

- ❑ Grade school
- ❑ Some high school
- ❑ High school diploma or GED
- ❑ Some vocational or technical school
- ❑ Vocational or technical school (associate's)
- ❑ Some college
- ❑ Four-year college (bachelor's)
- ❑ Some graduate school
- ❑ Graduate/Professional degree

Thank you for your help!

Please complete the survey and mail it back in the enclosed self-addressed envelope. No postage is necessary.