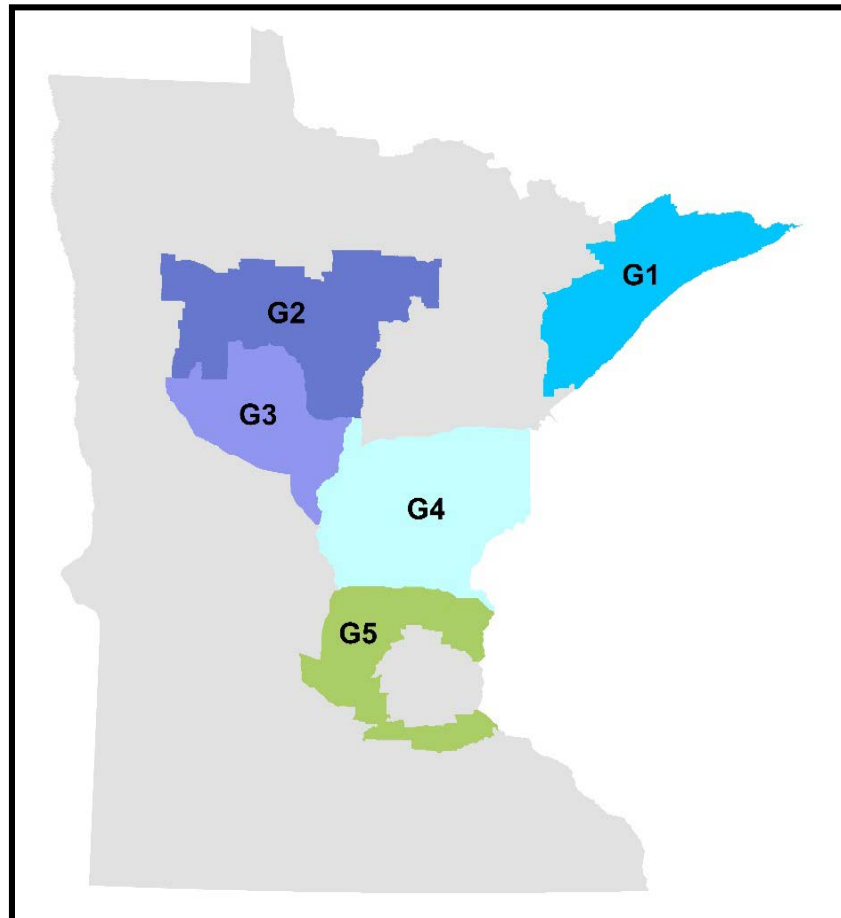


MINNESOTA DEER GOAL SETTING REPORT

A study of hunter and landowner opinions about deer
populations and management
Blocks G1 – G5



Final Report

A cooperative study conducted by:

Minnesota Cooperative Fish and Wildlife Research Unit
Minnesota Department of Natural Resources

MINNESOTA DEER GOAL SETTING REPORT

A study of hunter and landowner opinions about deer populations and management Blocks G1 – G5

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Acknowledgements

This study was a cooperative effort supported by the Minnesota Department of Natural Resources, Division of Fish and Wildlife (DNR), and the U.S. Geological Survey through the Minnesota Cooperative Fish and Wildlife Research Unit at the University of Minnesota. We thank David Miller for his assistance in working with the electronic licensing system. Finally, we thank the many deer hunters and landowners who took the time to complete the survey and helped to further our understanding of these important stakeholders.

Suggested Citation

Walberg, E., McInenly, L. E., and Cornicelli, L. 2015. Minnesota deer population goal setting – surveys of hunters and landowners. Minnesota Department of Natural Resources and University of Minnesota, Minnesota Cooperative Fish and Wildlife Research Unit, Department of Fisheries, Wildlife, and Conservation Biology.

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Goal Setting Blocks¹

Superior Uplands Arrowhead (Block G1)	3
North Central Plains Moraines (Block G2)	35
Pine Moraines (Block G3)	65
East Central Uplands (Block G4)	96
Sand Plain – Big Woods (Block G5)	129

¹ This report represents data collected as part of the Minnesota DNR deer goal setting project, which began in spring 2014. Additional reports are in process and will be appended to this report as they are completed. Questions specifically related to harvest management and DNR trust were not analyzed for this report. Those questions pertain to larger hunter/landowner attitude surveys and will be included in those reports.

Superior Uplands Arrowhead (Block G1)
Deer Goal Setting
Landowner and Hunter Survey Results



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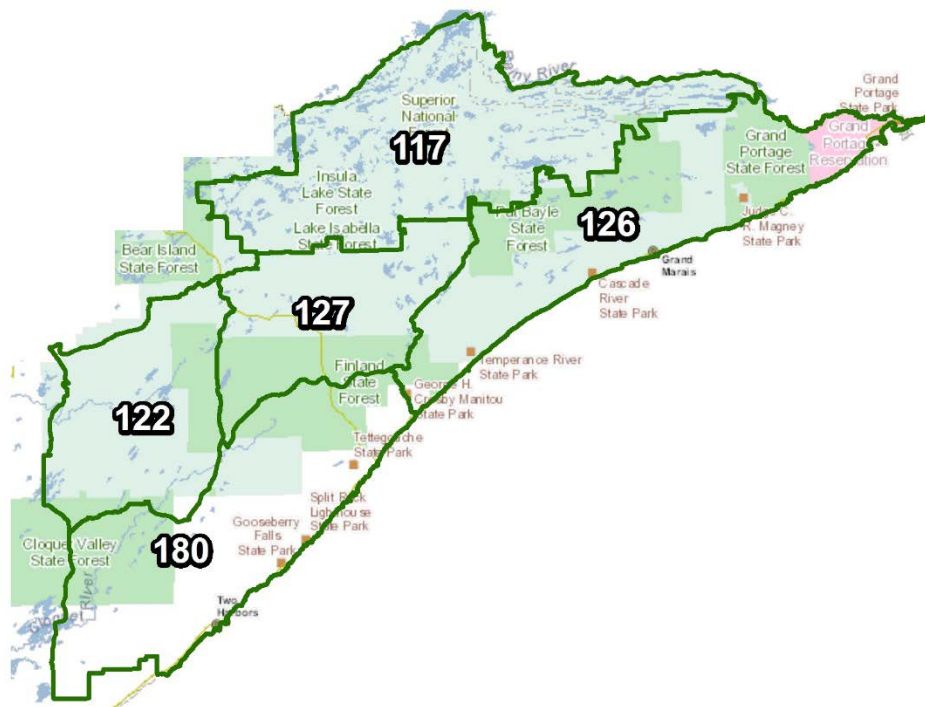
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Public Surveys for Deer Goal Setting

MN DNR periodically conducts stakeholder surveys to collect information about public desires and opinions regarding specific natural resource management issues. Survey recipients are selected randomly and provide a statistically representative sample of stakeholder opinions. Thus, these surveys differ from annual public input opportunities which may include some bias according to self-selection of interested parties. In 2014, both hunters (Appendix A) and landowners (Appendix B) in this goal setting block were surveyed; the resulting information provides a basis for the 2015 deer population goal setting process. This report covers goal block G1, Superior Uplands Arrowhead.



Methods

Hunters and private landowners were surveyed using a mixed mode design that included two waves of letters requesting survey completion online; the third wave was mailed using a self-administered mail back questionnaire (Appendices A and B).

For the hunter survey, we randomly selected 2,600 adult 2013 deer license holders who indicated they intended to hunt in deer areas 117, 122, 126, 127, or 180. A total of 60 were undeliverable and we received 1,094 completed responses, which yielded an adjusted response rate of 43%. Landowner parcels were stratified into 4 acreages, 1) 2 – 19.9, 2) 20 – 79.9, 3) 80 – 319.9, and 4) 320+. We selected a simple random sample from strata 1 and 2 ($n = 922$) and surveyed all landowners in strata 3 ($N = 669$) and 4 ($N = 86$). Overall, there were 93 undeliverable surveys; 1,049 completed landowner surveys were returned, yielding a 42% adjusted response rate. For both surveys, our error rate at the goal block level was approximately 3%.

Hunter Survey

Demographics

Nearly all respondents (97%) indicated they hunted during the 2013 firearm deer season. Overall 15% indicated they hunted deer during the archery season and 7% hunted muzzleloader. Firearm hunters spent an average of 7.4 days afield, compared to 3.9 for muzzleloader and 16.5 for archery hunters. Overall, individuals had hunted an average of 32 years in Minnesota and 23 years in the deer area they indicated they hunted most often. Overall, 93% of respondents were male and the average age was 52.1 (range = 18 – 87).

Given the amount of public land in this goal setting block, most hunters indicated they did at least some of their hunting on public land (82%). Only 46% hunted their own land, 44% hunted other people's private land, and 6.7% leased land for hunting. With respect to future populations; a majority expressed a desire for an increase in deer numbers, regardless of where they hunted (Table 1).

Population trends and perceptions about deer populations

Respondents were asked to indicate their perceptions of deer population trends over the last 5 years. Overall, 86% of respondents indicated there were fewer deer than 5 years ago, 2% indicated more, and 12% believed populations were the same. We noted differences in responses only for deer area 126, where 76% indicated deer populations had declined (Table 2). Respondents were also asked for their perceptions of total deer population size as rated by 'too low', 'about right', or 'too high'. Over three-quarters (78%) believed the population was 'too low', 19% thought it was 'about right', and 3% indicated the population was 'too high'. Respondents in deer area 126 were most likely to indicate that populations were about right (26%) (Table 3). Respondents were also asked to indicate their desires for future deer population densities and most (83%) wanted to see an increase in deer densities at some level (Table 4, Figure 1). Interestingly, a majority of respondents (71%) would shoot an antlerless deer if given the opportunity.

Table 1. Condensed table of desired deer population trends of hunters, by land type hunted.

Type of land hunted		Desired Population Trend		
		Decrease	No Change	Increase
Private land that I own	None	6%	14%	81%
	Some	3%	11%	86%
	Most	6%	12%	82%
	All	13%	17%	70%
Private land that I lease for hunting	None	6%	13%	81%
	Some	21%	0%	79%
	Most	0%	12%	88%
	All	10%	20%	70%
Private land that I do not own or lease	None	5%	12%	82%
	Some	6%	14%	80%
	Most	9%	14%	77%
	All	6%	13%	82%
Public land	None	10%	16%	74%
	Some	9%	13%	78%
	Most	3%	9%	88%
	All	4%	11%	84%

Table 2. Hunter perceptions of deer population trends over the last 5 years, by deer permit area.

Deer Area	Lower		The Same		Higher	
	N	Percent	N	Percent	N	Percent
117	16	89%	2	11%	0	0%
122	170	87%	23	12%	2	1%
126	139	76%	33	18%	10	6%
127	47	89%	5	9%	1	2%
180	459	89%	49	10%	10	2%
Total	831	86%	112	12%	23	2%

Table 3. Hunter beliefs about current deer population densities, by deer area.

Deer Area	Too Low		About Right		Too High	
	N	Percent	N	Percent	N	Percent
117	15	88%	2	12%	0	0%
122	165	85%	27	14%	2	1%
126	126	69%	48	26%	8	4%
127	44	82%	8	15%	2	4%
180	401	79%	96	19%	14	3%
Total	751	78%	181	19%	26	3%

Table 4. Deer population trend preferences for hunters, by deer permit area.

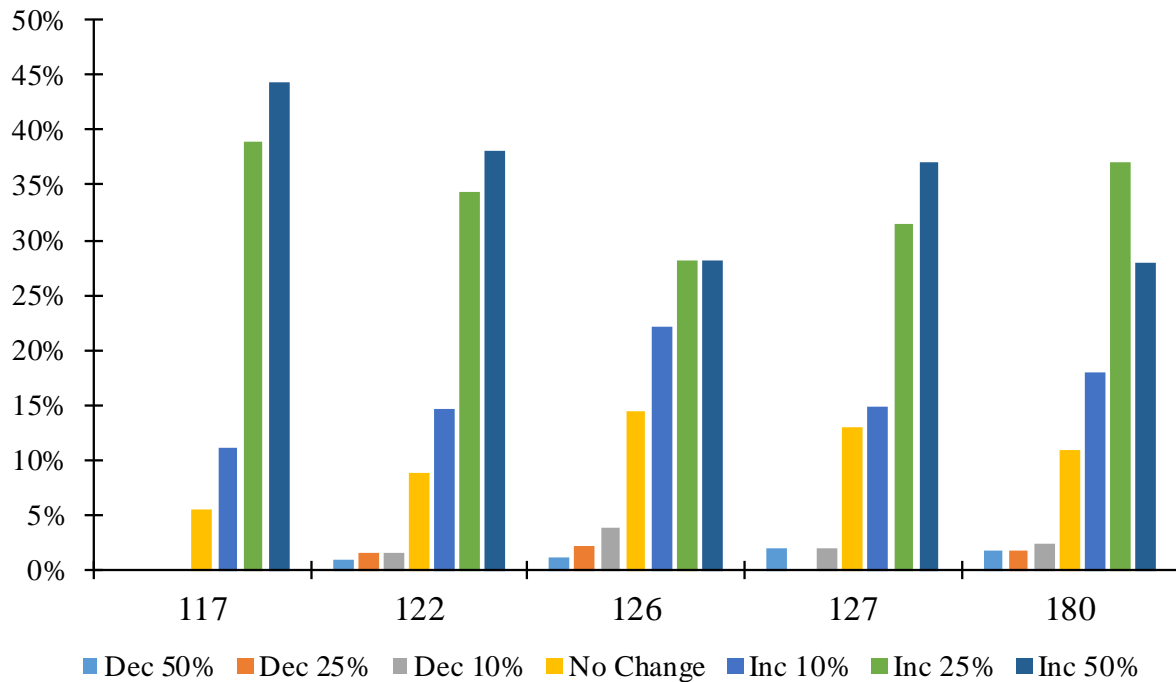
(a) By individual response

Deer Area	Dec 50%	Dec 25%	Dec 10%	No Change	Inc 10%	Inc 25%	Inc 50%
117	0%	0%	0%	6%	11%	39%	44%
122	1%	2%	2%	9%	15%	34%	38%
126	1%	2%	4%	14%	22%	28%	28%
127	2%	0%	2%	13%	15%	32%	37%
180	2%	2%	2%	11%	18%	37%	28%
Total	2%	2%	2%	11%	18%	35%	31%

(b) Summarized by decrease, same, increase

Deer Area	Decrease	Same	Increase
117	0%	6%	94%
122	4%	9%	87%
126	7%	14%	79%
127	4%	13%	83%
180	6%	11%	83%
Total	6%	11%	83%

Figure 1. Graphical representation of hunters' desired deer population trends.



Satisfaction

Hunters were asked to indicate their overall satisfaction with deer numbers, whether they heard about or saw legal bucks, their satisfaction with the number of legal bucks, quality of bucks, total number of deer and total number of antlerless deer. A low percentage (15%) were satisfied with current deer numbers; a majority (73%) indicated dissatisfaction (Table 5). Similarly, 19% of respondents indicated they were satisfied with the total number of deer they saw while hunting (78% were not satisfied and 9% were neutral). Only 27% were satisfied with the total number of antlerless deer they observed. A similar percentage were satisfied with the number of legal bucks observed (23%); most were dissatisfied (65%). Slightly less than half (44%) indicated they saw heard about or saw legal bucks while hunting. More hunters (56%) were dissatisfied than satisfied (27%) with the quality of bucks observed (Table 6). Finally, we observed no real differences among land type hunted and satisfaction with total deer numbers; most expressed low levels of overall satisfaction with deer numbers (Figure 2).

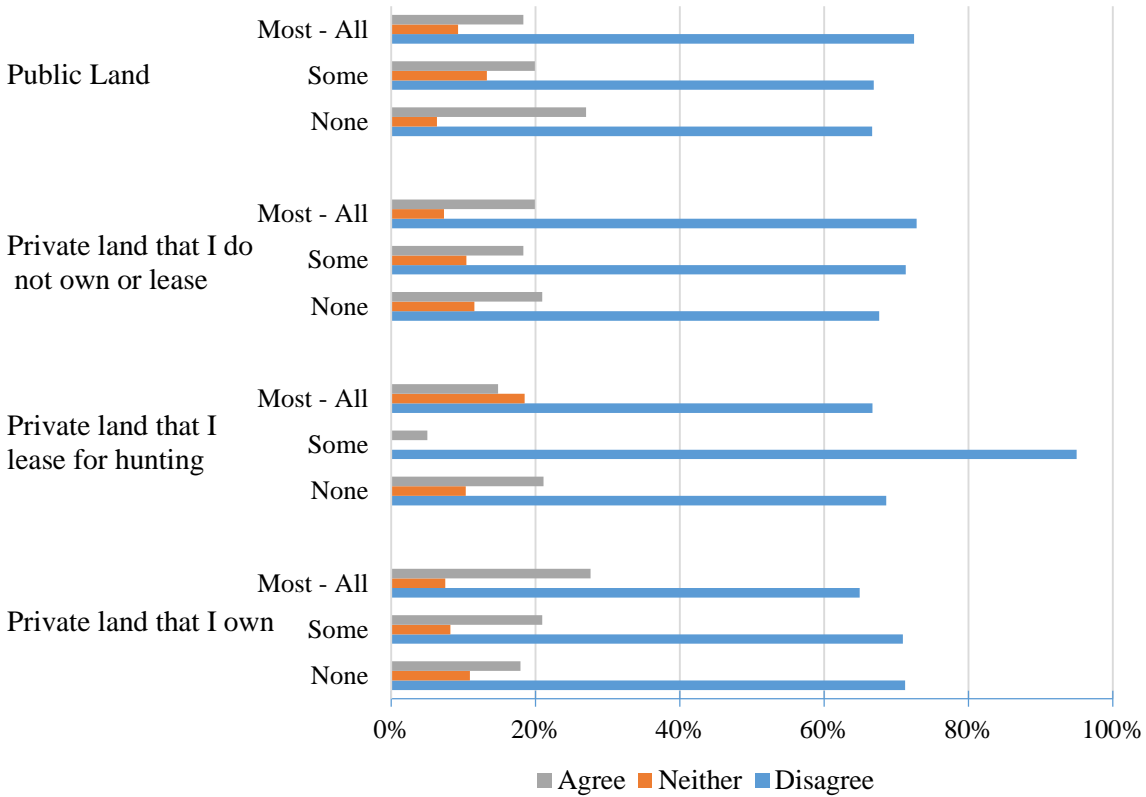
Table 5. Overall hunter satisfaction with total deer numbers, by deer area.

DPA	Dissatisfied		Neither		Satisfied	
	N	Percent	N	Percent	N	Percent
117	15	83%	2	11%	1	6%
122	155	80%	18	9%	22	11%
126	117	64%	16	9%	49	27%
127	41	76%	5	9%	8	15%
180	374	72%	79	15%	65	13%
Total	702	73%	120	12%	145	15%

Table 6. Hunter satisfaction with number and quality of bucks, antlerless deer, and total deer numbers, by area.

		Deer Area					Total
		117	122	126	127	180	
I was satisfied with the number of legal bucks	Disagree	94%	70%	54%	70%	65%	65%
	Neither	0%	9%	14%	15%	13%	13%
	Agree	6%	21%	32%	15%	22%	23%
I was satisfied with the quality of bucks	Disagree	78%	58%	44%	68%	58%	56%
	Neither	11%	18%	17%	13%	17%	17%
	Agree	11%	24%	39%	19%	25%	27%
I heard about or saw legal bucks while hunting	Disagree	56%	48%	36%	59%	47%	46%
	Neither	11%	12%	11%	14%	10%	11%
	Agree	33%	40%	54%	28%	44%	44%
I was satisfied with the total number of antlerless deer	Disagree	72%	65%	49%	62%	61%	60%
	Neither	6%	10%	17%	15%	13%	13%
	Agree	22%	25%	35%	23%	26%	27%
I was satisfied with the total number of deer I saw while hunting	Disagree	83%	82%	60%	74%	72%	72%
	Neither	0%	5%	13%	13%	9%	9%
	Agree	17%	13%	28%	13%	19%	19%

Figure 2. Hunter satisfaction with total number of deer seen, based on land type hunted.



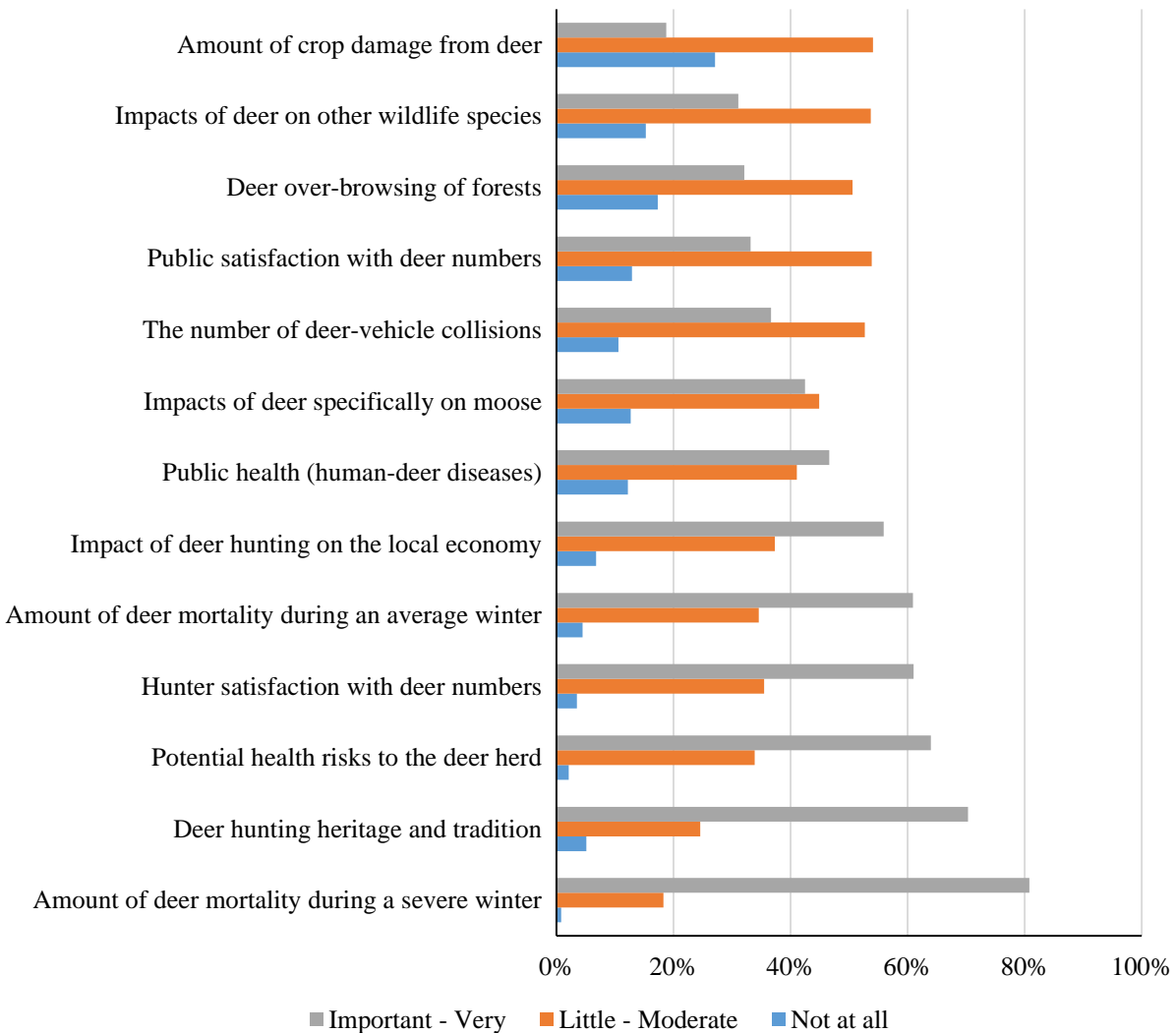
Consideration when setting deer population goals

Respondents were also asked to rate the importance of 13 items when setting deer population goals. They were expressed as items that respondents could consider as relatively important when setting deer population goals. The scale ranges from 'not at all important' to 'very important' and covered a range of items that would lead to management for either higher or lower deer populations. Overall, respondents were mixed in that they viewed severe winter mortality, deer hunting heritage, and deer health risks as the 3 most important items. The amount of crop damage, impacts on other species, and deer over-browsing of forests were the 3 lowest variables. Interestingly, impacts of deer on moose ranked 8th in relative importance with 45% indicating little-moderate and 43% noting important to very important. Impacts of deer on moose was considered not at all important by 13% of respondents (Table 7; Figure 3).

Table 7. Items that hunters believed should be important when considering setting deer population goals.

Item	Relative Importance				
	Not at all	A little	Moderately	Important	Very
Amount of deer mortality during an average winter	4%	9%	26%	41%	20%
Amount of deer mortality during a severe winter	1%	5%	14%	31%	50%
Deer over-browsing of forests	17%	25%	26%	22%	10%
Public satisfaction with deer numbers	13%	23%	31%	23%	10%
Hunter satisfaction with deer numbers	4%	13%	23%	36%	25%
The number of deer-vehicle collisions	11%	25%	28%	26%	11%
Amount of crop damage from deer	27%	31%	23%	14%	5%
Impacts of deer on other wildlife species	15%	25%	28%	23%	8%
Potential health risks to the deer herd	2%	10%	24%	40%	24%
Public health (human-deer diseases)	12%	22%	19%	26%	20%
Deer hunting heritage and tradition	5%	9%	16%	31%	39%
Impact of deer hunting on the local economy	7%	13%	24%	32%	24%
Impacts of deer specifically on moose	13%	20%	25%	25%	17%

Figure 3. Graphical importance of items that should be considered when setting deer population goals as defined by hunters. Items were consolidated into 3 groups and ranked by relative importance from low to high.



Landowner Survey

Demographics

We received 354, 387, 271, and 32 responses from the 4 strata, respectively. Because undeliverable surveys were not tracked, we did not calculate survey response by stratum. In total, 37% of respondents indicated they hunted deer in Minnesota during the 2013 deer season; similar percentages were reported for 2011 (38%) and 2012 (39%). There were no statistical differences between the online or mail survey responses for the percentage of landowners who hunted deer. Since those percentages did not vary, tables that describe hunter attitudes are based off whether or not they hunted in 2013 only. By stratum, a lower proportion of respondents who

owned 2 – 20 acres indicated they hunted (44%), as compared to other landowners (20-79.9: 68%; 80-319.9: 74%; 320+: 73%). Overall, individuals had hunted an average of 38 years. In total, 77% of respondents were male and the average age was 61.3 (range = 26 – 94).

Hunting patterns

A majority of landowners did most (24%) or all (43%) of their hunting on their own private land. More than half of all landowners did at least some hunting on public land (63%), while less than half hunted private land they didn't own (36%). Very few indicated they leased land for deer hunting (6.1%). Regardless of where they hunted, a majority of hunting landowners expressed a desire for an increase in deer numbers (Table 8).

Slightly more than half (53%) indicated they allowed hunting on their property. As expected, individuals with smaller parcels allowed hunting at lower rates (31%) than landowners with at least 20 acres (60% – 83%). Overall, only 2% (n = 11) of landowners indicated they leased their property for hunting. With respect to who is allowed to hunt, 74% indicated family members, 54% indicated friends or neighbors, and 7.4% allowed strangers who asked permission.

Reported damage from deer

The percentage of landowners who had acreage in crops was low, regardless of stratum (e.g., row crops, small grains, orchards, vegetables). The percentage of respondents who owned woodlands or residential properties was consistent among stratum (Figure 4). As only 6.1% of respondents indicated they had crops, the percentage of individuals reporting damage should be approached with caution. A minority of respondents indicated they had woodlot (20%) or residential (33%) damage from deer. With respect to residential damage, landowners who owned <20 acres were slightly more inclined to indicate damage from deer (Figure 5).

We observed no clear patterns of severity of damage based on land type (crop, woods, residential) or strata by deer permit area. Essentially, damage due to deer was typically categorized as 'negligible' or 'minor', regardless of parcel size (Table 9). We also observed no statistical differences among deer permit areas for landowners who reported damage to crops, woods, or residential acreage (Figure 6).

Table 8. Condensed table of desired deer population trends for landowners that hunted by land type hunted.

Type of land hunted		Desired Population Trend		
		Decrease	No Change	Increase
Private land that I own	None	17%	36%	48%
	Some	13%	17%	71%
	Most	10%	16%	74%
	All	14%	22%	64%
Private land that I lease for hunting	None	16%	24%	61%
	Some	0%	22%	78%
	Most	0%	0%	100%
	All	25%	0%	75%
Private land that I do not own or lease	None	15%	24%	61%
	Some	13%	15%	72%
	Most	8%	28%	64%
	All	26%	22%	52%
Public land	None	16%	29%	55%
	Some	10%	16%	74%
	Most	7%	15%	78%
	All	14%	23%	63%

Figure 4. Percent of landowners who owned crops, woods, and residential acreage.

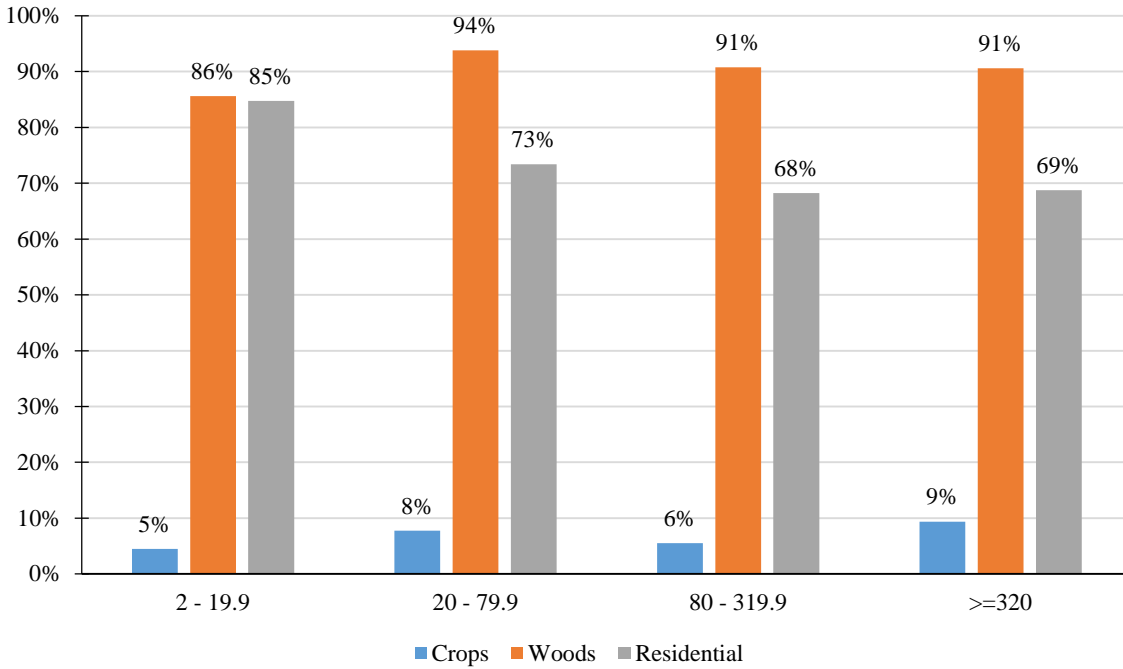


Figure 5. Percent of landowners who indicated they had damage from deer. Reported crop damage should be approached with caution because of small sample sizes.

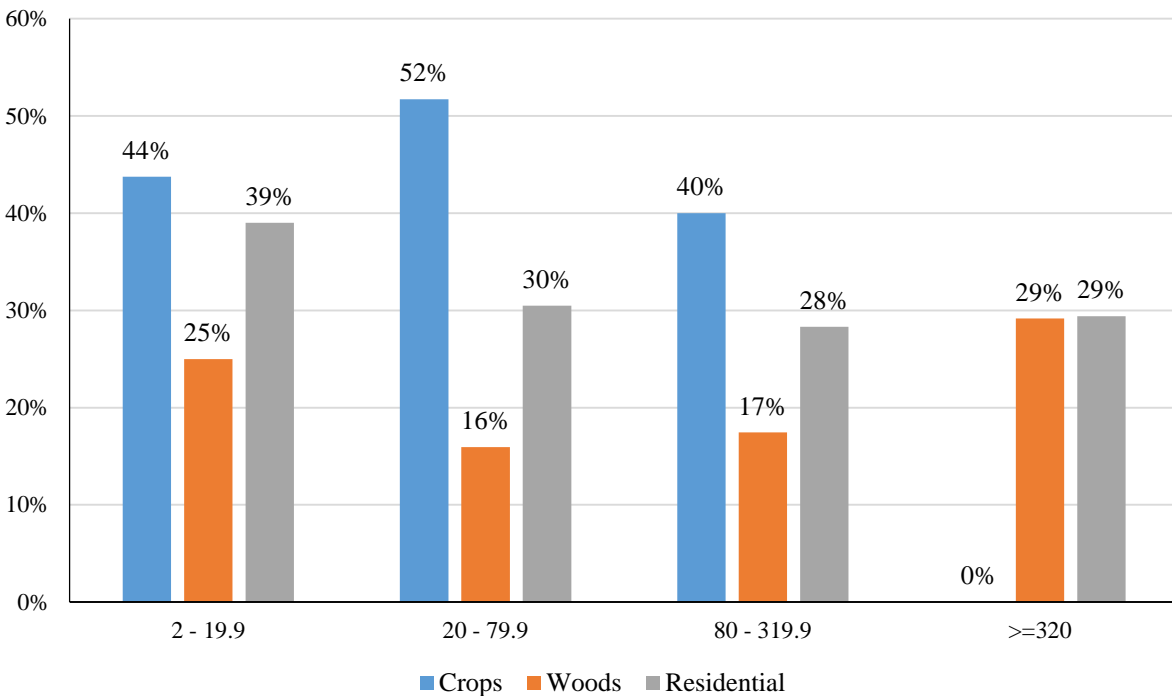
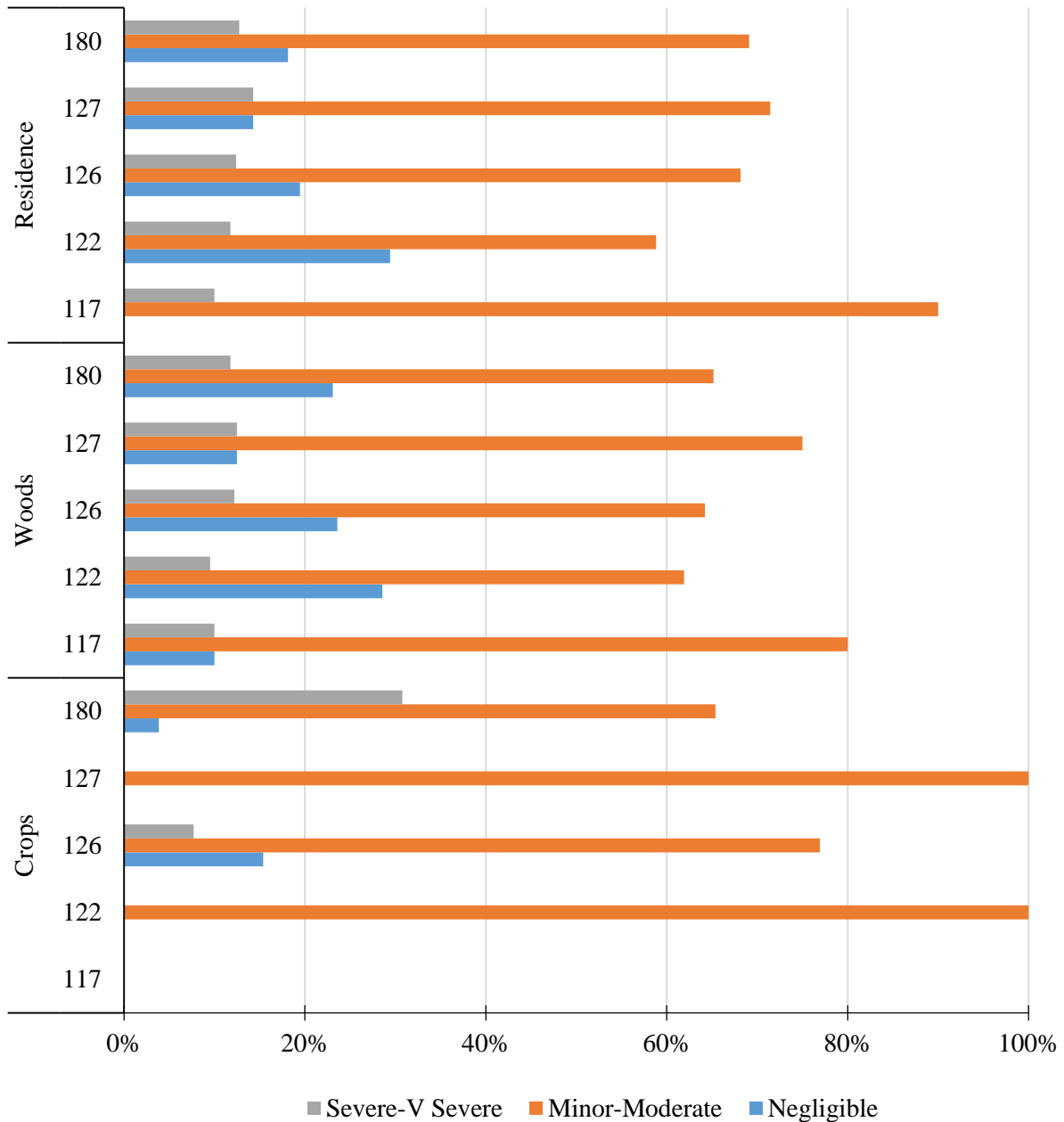


Table 9. Self-described damage caused by deer for crops, woods, and residential land types.

		Strata				Total
		2 - 19.9	20 - 79.9	80 - 319.9	>=320	
Crops	Negligible	0%	15%	0%	0%	7%
	Minor	70%	20%	33%	100%	39%
	Moderate	20%	40%	33%	0%	32%
	Severe	0%	25%	33%	0%	20%
	Very Severe	10%	0%	0%	0%	2%
Woods	Negligible	20%	29%	20%	17%	23%
	Minor	39%	40%	35%	67%	39%
	Moderate	25%	24%	32%	17%	26%
	Severe	13%	6%	11%	0%	9%
	Very Severe	3%	1%	2%	0%	2%
Residential	Negligible	17%	23%	15%	11%	19%
	Minor	38%	44%	36%	67%	40%
	Moderate	30%	25%	33%	22%	28%
	Severe	13%	7%	14%	0%	11%
	Very Severe	2%	2%	3%	0%	2%

Figure 6. Reported damage to crops, woods, and residential acreage, by deer permit area.



Population trends and perceptions about deer populations

Respondents were asked to indicate their perceptions of deer population trends over the last 5 years. Overall, 53% (43% non-hunters, 71% hunters) of respondents indicated there were fewer deer than 5 years ago, 17% (22% non-hunters, 8.9% hunters) indicated more, and 30% (35% non-hunters, 20% hunters) believed populations were the same. Comparable to the hunter survey, respondents who lived in deer area 126 had the lowest percentage of people who thought the population was lower (Table 10). Respondents were also asked for their perceptions of total deer population size as rated by ‘too low’, ‘about right’, or ‘too high’. Non-hunting landowners

were far more likely to indicate the deer population was ‘about right (53% vs. 25%), while hunters were far more likely to indicate populations were ‘too low’ (65% vs 20%). Non-hunters were much more likely to indicate the population was ‘too high’ (9.7% hunters, 27% non-hunters). Similar patterns were detected by deer area in that hunting landowners were much more likely to express different population desires than non-hunting landowners (Table 11). Respondents were also asked to indicate their desires for future deer population densities and 43% wanted to see an increase in deer densities at some level (Table 12, Figure 7). We also observed clear differences between hunting and non-hunting landowners with hunting landowners indicating stronger preferences for higher deer populations (Table 13; Figure 8).

Table 10. Perceptions of landowner deer population trends over the last 5 years, by deer area.

Deer Area	Lower		The Same		Higher	
	N	Percent	N	Percent	N	Percent
117	5	25%	9	45%	6	30%
122	39	77%	5	10%	7	14%
126	90	45%	75	37%	36	18%
127	7	41%	6	35%	4	24%
180	212	57%	103	28%	60	16%
Total	353	53%	198	30%	113	17%

Table 11. Landowner beliefs about current deer population densities, by deer area and whether or not they hunted.

Hunt	Deer Area	N	Too low	N	About right	N	Too high
No (62%)	117	5	18%	14	50%	9	32%
	122	13	33%	22	56%	4	10%
	126	39	18%	107	50%	69	32%
	127	7	37%	8	42%	4	21%
	180	61	20%	169	55%	78	25%
	Sum	125	21%	320	53%	164	27%
Yes (38%)	117	1	100%	0	0%	0	0%
	122	52	88%	4	7%	3	5%
	126	38	48%	31	39%	11	14%
	127	8	62%	3	23%	2	15%
	180	154	65%	61	26%	22	9%
	Sum	253	65%	99	25%	38	10%
Total	117	6	21%	14	48%	9	31%
	122	65	66%	26	27%	7	7%
	126	77	26%	138	47%	80	27%
	127	15	47%	11	34%	6	19%
	180	215	39%	230	42%	100	18%
	Total	378	38%	419	42%	202	20%

Table 12. Preferred landowner population trends, by deer area.

(a) by individual response

Deer Area	Dec 50%	Dec 25%	Dec 10%	No Change	Inc 10%	Inc 25%	Inc 50%
117	18%	7%	4%	36%	21%	4%	11%
122	3%	3%	2%	22%	11%	28%	31%
126	12%	12%	12%	33%	11%	12%	9%
127	13%	10%	6%	32%	10%	6%	23%
180	6%	8%	8%	31%	17%	16%	14%
Total	8%	9%	8%	31%	14%	15%	14%

(b) Summarized by decrease, stay the same, increase

Deer Area	Decrease	Same	Increase
117	29%	36%	36%
122	8%	22%	70%
126	36%	33%	32%
127	29%	32%	39%
180	22%	31%	47%
Total	25%	31%	43%

Figure 7. Graphical representation of desired deer population trends for landowners.

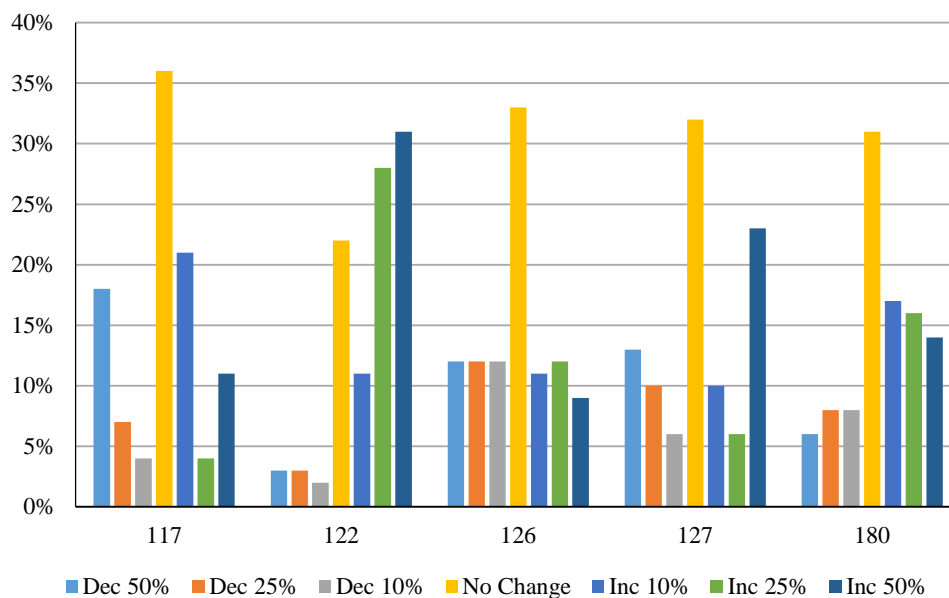
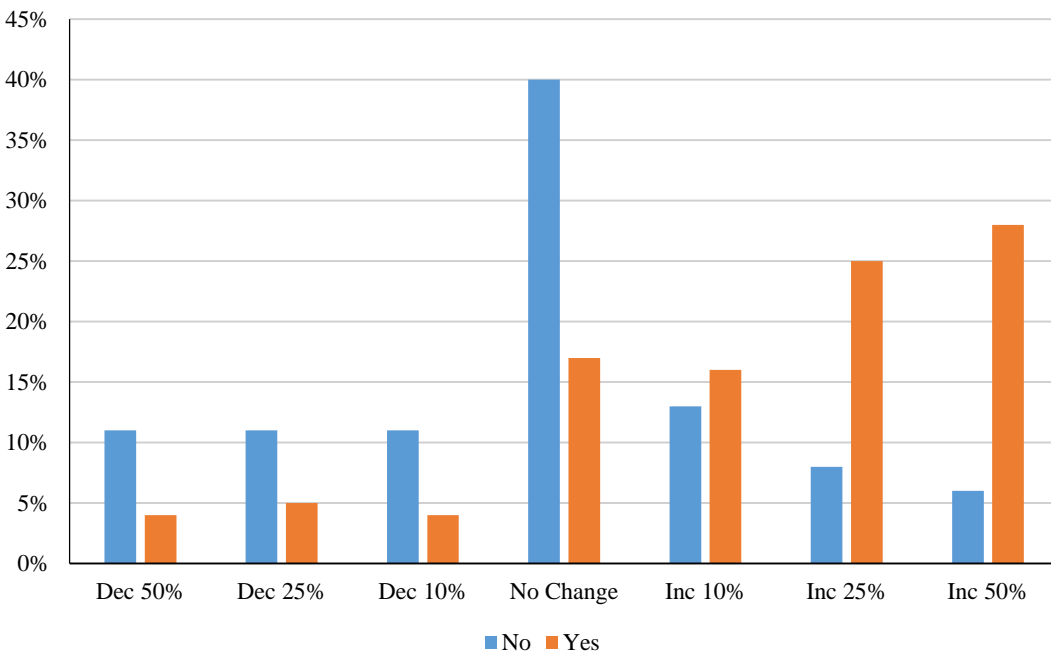


Table 13. Desired deer population trends for landowners, by deer area and whether or not they hunted.

Hunt	Deer Area	Dec 50%	Dec 25%	Dec 10%	No Change	Inc 10%	Inc 25%	Inc 50%
No	117	19%	7%	4%	37%	22%	4%	7%
	122	5%	3%	5%	49%	10%	15%	13%
	126	13%	14%	14%	35%	11%	7%	5%
	127	16%	11%	11%	42%	16%	0%	5%
	180	10%	11%	10%	42%	14%	9%	5%
	Total	11%	11%	11%	40%	13%	8%	6%
Yes	117	0%	0%	0%	0%	0%	0%	100%
	122	2%	3%	0%	5%	12%	36%	42%
	126	9%	4%	9%	28%	10%	23%	19%
	127	8%	8%	0%	17%	0%	17%	50%
	180	3%	5%	4%	17%	21%	25%	25%
	Total	4%	5%	4%	18%	16%	26%	28%

Figure 8. Graphical representation of landowner desires for future deer populations, by whether or not they hunted.



Consideration when setting deer population goals

Respondents were also asked to rate the importance of 12 items when setting deer population goals². The scale ranges from ‘not at all important’ to ‘very important’ and covered a range of items that would lead to both higher and lower deer populations. There were some similarities and some differences between the hunter and landowner surveys. While landowners believed health risks and severe winters were important (as did hunters), they viewed impacts to moose high as well (note – this item was #2 on the landowner list and #8 on the hunter list).

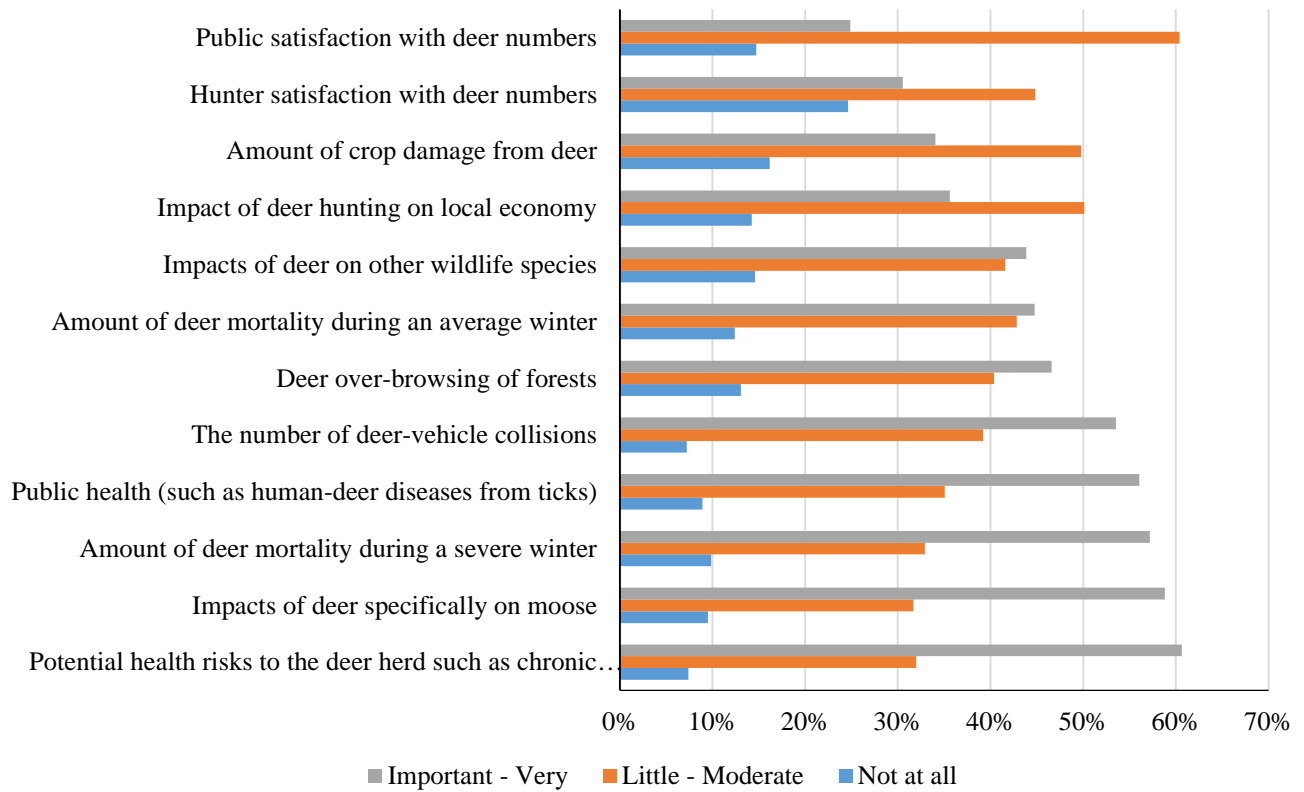
Landowners viewed crop damage, hunter satisfaction, and public satisfaction as least important (Table 14; Figure 9).

Table 14. Importance of items landowners indicated should be considered when setting deer population goals.

Item	Relative Importance				
	Not at all	A little	Moderately	Important	Very
Amount of deer mortality during an average winter	12%	17%	26%	31%	13%
Amount of deer mortality during a severe winter	10%	13%	20%	31%	26%
Deer over-browsing of forests	13%	17%	24%	26%	20%
Public satisfaction with deer numbers	15%	28%	33%	20%	5%
Hunter satisfaction with deer numbers	25%	21%	24%	20%	11%
The number of deer-vehicle collisions	7%	16%	23%	29%	25%
Amount of crop damage from deer	16%	21%	29%	22%	12%
Impacts of deer on other wildlife species	15%	17%	25%	27%	17%
Potential health risks to the deer herd	7%	13%	19%	31%	29%
Public health (such as human-deer diseases from ticks)	9%	15%	20%	30%	26%
Impacts of deer specifically on moose	10%	14%	17%	25%	34%
Impact of deer hunting on local economy	14%	22%	28%	22%	13%

² The question about hunting heritage was inadvertently omitted.

Figure 9. Graphical importance of items that should be considered when setting deer population goals as defined by landowners. Items were consolidated into 3 groups and ranked from low to high by highest importance.



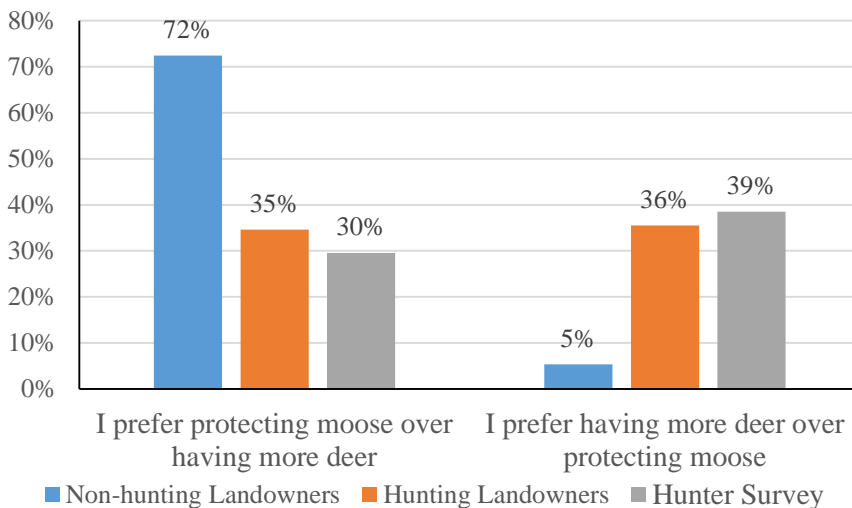
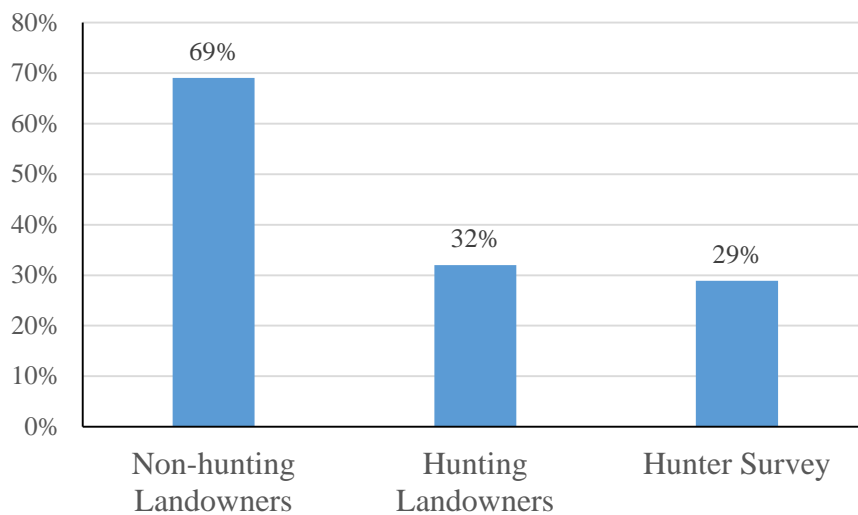
Moose specific questions (Hunter and Landowner combined)

For this goal block, we were specifically interested in hunter and landowner attitudes of the potential implications of deer on the declining moose population. Specifically, we wanted to know if, 1) respondents supported significant reductions in deer populations if it benefited moose, 2) whether they preferred protecting moose over having more deer, and 3) would prefer having more deer over protecting moose. We also broke out the respondents into 3 categories, 1) non-hunting landowners (landowner survey), 2) hunting landowners (landowner survey), and 3) hunters (hunter survey). Overall, 41% of respondents supported significantly lower deer densities if it benefited moose. However, there were differences between non-hunting landowners and hunting landowners and hunters. For non-hunting landowners, 69% supported significantly lower deer populations, whereas only 31% of hunting landowners and 29% of hunters supported significantly lower deer populations. Similar trends were observed for protecting moose over having more deer and preferring deer over moose. Essentially, non-hunting landowners were much more likely to choose moose over deer than people who hunted deer (Table 15, Figure 10 a,b).

Table 15. Percent of respondents who agreed with the questions regarding lowering deer densities to benefit moose, protecting moose over deer, and preferring deer over moose.

Question	Percent who agree with question		
	Non-hunting Landowners	Hunting Landowners	Hunter Survey
I would support significantly lower deer populations if it would benefit moose	69%	32%	29%
I prefer protecting moose over having more deer	72%	35%	30%
I prefer having more deer over protecting moose	5%	36%	39%

Figure 10. Graphical representation of respondents who agreed with the question regarding (a) significantly lowering deer densities to benefit moose and (b) preference for moose or deer.



Appendix A. Superior Uplands Arrowhead (Block G1) hunter survey

2014 Survey of Area G1 Minnesota Deer Hunters: Population Management

The Minnesota DNR will be evaluating deer population goals in northeastern Minnesota this year. An important component of this project is to collect information from deer hunters regarding their opinions towards deer populations. You have been selected at random to participate in this survey. Please take a few moments to answer the questions below. Your responses will help guide deer population goals in the area you hunt. This survey should take less than ten minutes to complete.

1. Please check the boxes below to report if you hunted deer in Minnesota during the 2011, 2012 or 2013 Minnesota deer season. *(Please check all that apply).*

2011 | 2012 | 2013

I did not hunt deer any of these years → Please skip to Question 13

2. Minnesota allows people to hunt deer during all 3 seasons. For the most recent year you hunted, which seasons did you participate? Please mark ‘Yes’ if you hunted a season and also estimate the number of days you hunted.

Season	Yes	No	If Yes, Number of Days
Archery	<input type="checkbox"/>	<input type="checkbox"/>	_____
Firearm	<input type="checkbox"/>	<input type="checkbox"/>	_____
Muzzleloader	<input type="checkbox"/>	<input type="checkbox"/>	_____

3. Which **ONE** deer permit area did you hunt most often during the most recent deer season you hunted?

117 | 122 | 126 | 127 | 180 | I hunted a permit area not listed

4. If you did not hunt one of the permit areas listed above, please tell us which one you hunted most often:

_____ Area Number

5. Including 2013, how many years have you hunted deer in the permit area you hunt most often?

_____ Years

6. Including 2013, how many years have you been hunting deer in Minnesota? _____ Years

7. How much of your deer hunting did you do on each of the following types of land during your most recent deer hunting season? *(Please circle one item from each row.)*

	None	Some	Most	All
Private land that I own	1	2	3	4
Private land that I lease for hunting	1	2	3	4
Private land that I do not own or lease	1	2	3	4
Public land	1	2	3	4

8. Please indicate if there are any deer harvest restrictions on the property you hunt most often.
- 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
 - Other (please explain): _____

9. Please indicate whether you agree or disagree with the following statements regarding your most recent deer hunt. *(Please circle one number for each statement below).*

	Strongly Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Strongly Agree
I was satisfied with the number of legal bucks	1	2	3	4	5
I was satisfied with the quality of bucks	1	2	3	4	5
I heard about or saw legal bucks while hunting	1	2	3	4	5
I was satisfied with the total number of antlerless deer	1	2	3	4	5
I was satisfied with the total number of deer I saw while hunting	1	2	3	4	5

10. Will you shoot an antlerless deer if given the opportunity?

- Yes No

11. Over the past 5 years, what trend have you seen in the deer population in the deer area you hunt most often?

- Much fewer deer now than 5 years ago
- Slightly fewer deer now than 5 years ago
- About the same number of deer as 5 years ago
- Slightly more deer now than 5 years ago
- Many more deer now than 5 years ago

12. In thinking about the deer permit area you hunt, please indicate your overall satisfaction with current deer numbers.

- Very Dissatisfied
- Slightly Dissatisfied
- Neutral Dissatisfied or Satisfied
- Slightly Satisfied
- Very Satisfied

13. How much importance should we assign to each of the following considerations when setting deer population goals? (*Please circle one number for each statement below*).

	Not at all Important	A little Important	Moderately Important	Important	Very Important
Amount of deer mortality during an average winter	1	2	3	4	5
Amount of deer mortality during a severe winter	1	2	3	4	5
Potential health risks to the deer herd	1	2	3	4	5
Public health (human-deer diseases)	1	2	3	4	5
Amount of crop damage from deer	1	2	3	4	5
The number of deer-vehicle collisions	1	2	3	4	5
Deer over-browsing of forests	1	2	3	4	5
Impacts of deer on other wildlife species	1	2	3	4	5
Impacts of deer specifically on moose	1	2	3	4	5
Deer hunting heritage and tradition	1	2	3	4	5
Hunter satisfaction with deer numbers	1	2	3	4	5
Public satisfaction with deer numbers	1	2	3	4	5
Impact of deer hunting on the local economy	1	2	3	4	5

14. Please identify up to 3 other factors that you believe are important and should be considered when setting deer population goals.

- A. _____
- B. _____
- C. _____

16. In thinking about your property and the surrounding area, would you say the deer population is, (*Check one*)

- Much too Low Too Low About Right Too High Much too High

17. 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
Population
50%
(Significant) | Decrease
Population
25%
(Moderate) | Decrease
Population
10%
(Slight) | No Change | Increase
Population
10%
(Slight) | Increase
Population
25%
(Moderate) | Increase
Population
50%
(Significant) |

17. 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?

Strongly Oppose Slightly Oppose Neither Slightly Support Strongly Support

18. Moose are known to die from diseases that white-tailed deer carry. Although researchers have not yet determined that a significant proportion of the moose population dies from deer diseases, please tell us how you feel about deer populations as they relate to moose.

	Strongly Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Strongly Agree
I would support significantly lower deer populations if it would benefit moose.	1	2	3	4	5
I prefer protecting moose over having more deer.	1	2	3	4	5
I prefer having more deer over protecting moose.	1	2	3	4	5

19. Please let us know how you feel about the Minnesota Department of Natural Resources. *(Please circle one response for each of the following statements.)*

	Strongly Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Strongly Agree
The MnDNR does a good job of managing deer in Minnesota.	1	2	3	4	5
When deciding about deer management in Minnesota, the MnDNR will be open and honest in the things they do and say.	1	2	3	4	5
The MnDNR can be trusted to make decisions about deer management that are good for the resource.	1	2	3	4	5
The MnDNR will make decisions about deer management in a way that is fair.	1	2	3	4	5
The MnDNR has deer managers and biologists who are well-trained for their jobs.	1	2	3	4	5
The MnDNR listens to deer hunters' concerns.	1	2	3	4	5

20. What is your gender?

Male | Female

21. What year were you born? _____ *(Please use the 4 digit year).*

If you would be willing to respond to additional questions about deer management and hunting in Minnesota and are willing to provide your email address, please write it below. We will only use your email address for research related to deer management and will not share it with anyone.

e-mail address: _____

2014 Survey of Area G1 Minnesota Landowners: Deer Management

The Minnesota Department of Natural Resources (DNR) will be evaluating deer population goals in northeastern Minnesota this year. An important component of this project is to collect information from landowners regarding their opinions towards deer populations and land management. You have been selected at random to participate in this survey. Please take a few moments to answer the questions below. Your responses will help guide deer population goals in the area you own land.

1. How many total acres did you own and/or lease at the end of 2013?

_____ 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. Please also estimate the percentage of that land type you have enrolled in a State or Federal Conservation Program.

Land Type	Acres Owned	Acres Leased	% Enrolled in Conservation Program
Private Residence (house, lawns, associated buildings)			%
Woodlands (natural forest or tree plantings)			%
Brushland (including abandoned, overgrown fields)			%
Hayfields, Pasture, or Grassland			%
Wetlands			%
Row Crops			%
Small Grains			%
Orchards or Vineyards			%
Vegetables or other Truck Crops			%
Prairie (Native or Restored)			%
Wildlife Food Plots			%
Other (please list: _____)			%

3. Did you experience deer damage to land that you own or leased in 2013?

- | | | | |
|-------------|------------------------------|-----------------------------|---|
| Crops | <input type="checkbox"/> Yes | <input type="checkbox"/> No | } IF ALL ARE <u>NO</u> PLEASE
SKIP TO QUESTION 6 |
| Woodlands | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| Landscaping | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |

4. How would you describe the total amount of deer damage you experienced in 2013? (*Check one*).

- Negligible Minor Moderate Severe Very Severe

5. How would you compare the amount of deer damage you experienced in 2013 to what you experienced 5 years ago? (*Check one*).

- Much less damage than 5 years ago
- Slightly less damage than 5 years ago
- About the same damage as 5 years ago
- Slightly more damage than 5 years ago
- Much more damage than 5 years ago
- I was not farming/managing lands 5 years ago

6. Over the past 5 years, what trend have you seen in the deer population in the area of your property? (*Check one*).
- Much fewer deer now than 5 years ago
 - Slightly fewer deer now than 5 years ago
 - About the same number of deer now as 5 years ago
 - Slightly more deer now than 5 years ago
 - Many more deer now than 5 years ago
7. In thinking about your property and the surrounding area, please indicate your overall satisfaction with current deer numbers. (*Please check one below*).
- Very Dissatisfied Slightly Dissatisfied Neutral Slightly Satisfied Very Satisfied
8. How much importance should we assign to each of the following considerations when setting deer population goals? (*Please circle one number for each statement below*).

	Not at all Important	A little Important	Moderately Important	Important	Very Important
Amount of deer mortality during an average winter	1	2	3	4	5
Amount of deer mortality during a severe winter	1	2	3	4	5
Potential health risks to the deer herd such as chronic wasting disease	1	2	3	4	5
Public health (such as human-deer diseases from ticks)	1	2	3	4	5
Amount of crop damage from deer	1	2	3	4	5
The number of deer-vehicle collisions	1	2	3	4	5
Deer over-browsing of forests	1	2	3	4	5
Impacts of deer on other wildlife species	1	2	3	4	5
Impacts of deer specifically on moose	1	2	3	4	5
Hunter satisfaction with deer numbers	1	2	3	4	5
Public satisfaction with deer numbers	1	2	3	4	5
Impact of deer hunting on the local economy	1	2	3	4	5

9. Please identify up to 3 other factors that you believe are important and should be considered when setting deer population goals.
- A. _____
- B. _____
- C. _____

11. In thinking about your property and the surrounding area, would you say the deer population is, (*Check one*)
- Much too Low Too Low About Right Too High Much too High

12. 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 Population 50%	Decrease Population 25%	Decrease Population 10%	No Change	Increase Population 10%	Increase Population 25%	Increase Population 50%
(Significant)	(Moderate)	(Slight)		(Slight)	(Moderate)	(Significant)

13. Did you allow hunting on your property during the 2013 deer season? (*Check only one*)

- Yes
- No → PLEASE SKIP TO QUESTION 16

14. Do you lease any of your property for deer hunting?

- Yes
- No

15. Who did you allow to hunt deer on your property? (*Check mark all that apply*). Please also estimate the number of people who hunted your property in 2013.

- | | | |
|---|--|--|
| <input type="checkbox"/> Myself or family members _____ people
<input type="checkbox"/> Friends or neighbors _____ people
<input type="checkbox"/> Other (please list: _____) _____ people | | <input type="checkbox"/> Strangers who ask permission _____ people
<input type="checkbox"/> People who lease my property _____ people |
|---|--|--|

16. Please indicate if you impose any deer harvest restrictions on your property. (*Please check one only*).

- 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
- Other (please list: _____)

17. Please check the boxes below to report if you hunted deer in Minnesota during the 2011, 2012 or 2013 Minnesota deer season? (*Please check all that apply*).

- 2011 | 2012 | 2013
- I hunt deer but did not hunt any of these years → Please skip to Question 21
- I do not hunt deer at all → Please skip to Question 22

18. Which **ONE** deer permit area did you hunt most often during the most recent deer season you hunted?

- 117 | 122 | 126 | 127 | 180 | I hunted a permit area not listed

19. If you did not hunt one of the permit areas listed above, please tell us which one you hunted most often:

_____ Area Number

20. 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
Private land that I own	1	2	3	4
Private land that I lease for hunting	1	2	3	4
Private land that I do not own or lease	1	2	3	4
Public land	1	2	3	4

21. Including 2013, how many years have you been hunting deer in Minnesota? _____ Years.

22. To what extent would you support or oppose a regulation that would increase the proportion of antlered bucks in the area you own property? (*Check one.*)

- Strongly Oppose Slightly Oppose Neither Slightly Support Strongly Support

22. Moose are known to die from diseases that white-tailed deer carry. Although researchers have not yet determined that a significant proportion of the moose population dies from deer diseases, please tell us how you feel about deer populations as they relate to moose.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I would support significantly lower deer populations if it would benefit moose.	1	2	3	4	5
I prefer protecting moose over having more deer.	1	2	3	4	5
I prefer having more deer over protecting moose.	1	2	3	4	5

23. Please let us know how you feel about the Minnesota Department of Natural Resources. (*Please circle one response for each of the following statements.*)

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
The MnDNR does a good job of managing deer in Minnesota.	1	2	3	4	5
When deciding about deer management in Minnesota, the MnDNR will be open and honest in the things they do and say.	1	2	3	4	5
The MnDNR can be trusted to make decisions about deer management that are good for the resource.	1	2	3	4	5
The MnDNR will make decisions about deer management in a way that is fair.	1	2	3	4	5
The MnDNR has deer managers and biologists who are well-trained for their jobs.	1	2	3	4	5
The MnDNR listens to the concerns of landowners.	1	2	3	4	5

24. What is your gender?

- Male Female

25. What year were you born? _____ (*Please use the 4 digit year*)

If you would be willing to respond to additional questions about deer management and hunting in Minnesota and are willing to provide your email address, please write it below. We will only use your email address for research related to deer management and will not share it with anyone.

e-mail address: _____

North Central Plains Moraines (Block G2)
Deer Goal Setting
Landowner and Hunter Survey Results



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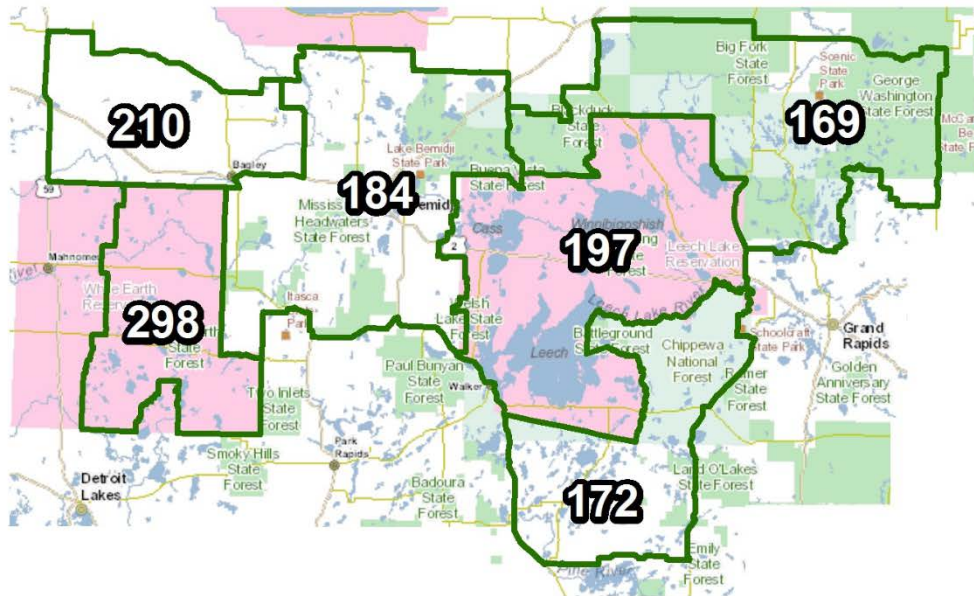
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Public Surveys for Deer Goal Setting

MN DNR periodically conducts stakeholder surveys to collect information about public desires and opinions regarding specific natural resource management issues. Survey recipients are selected randomly and provide a statistically representative sample of stakeholder opinions. Thus, these surveys differ from annual public input opportunities which may include some bias according to self-selection of interested parties. In 2014, both hunters (Appendix A) and landowners (Appendix B) in this goal setting block were surveyed; the resulting information provides a basis for the 2015 deer population goal setting process. This report covers goal block G2, North Central Plains Moraines.



Methods

Hunters and private landowners were surveyed using a mixed mode design that included two waves of letters requesting survey completion online; the third wave was mailed using a self-administered mail back questionnaire (Appendices A and B).

For the hunter survey, we randomly selected 2,600 adult 2013 deer license holders who indicated they intended to hunt in deer areas 169, 172, 184, 197, 210, or 298. A total of 172 were undeliverable and we received 939 completed responses, which yielded an adjusted response rate of 39%. Landowner parcels were stratified into 4 acreages, 1) 2 – 19.9, 2) 20 – 79.9, 3) 80 – 319.9, and 4) 320+. We selected a simple random sample from strata 1 - 3 ($n = 635$) and surveyed all landowners in strata 4 ($N = 696$). Overall, there were 162 undeliverable surveys; 952 completed landowner surveys were returned, yielding a 43% adjusted response rate. For both surveys, our error rate at the goal block level was approximately 3%.

Hunter Survey

Demographics

Nearly all respondents (96%) indicated they hunted during the 2013 firearm deer season. Overall 16% indicated they hunted deer during the archery season and 11% hunted muzzleloader. Firearm hunters spent an average of 6.3 days afield, compared to 5.2 for muzzleloader and 11.5 for archery hunters. Overall, individuals had hunted an average of 32 years in Minnesota and 21 years in the deer area they indicated they hunted most often. Overall, 90% of respondents were male and the average age was 51.1 (range = 19 – 88).

A slight majority of hunters did at least some of their hunting on their own private land (56%) or other private land (56%). A majority also did at least some of their hunting on public land (87%). Another 6.1% indicated they did at least some hunting on lands that they leased for deer hunting. Only 1.4% of respondents hunted exclusively on land they leased. With respect to future populations; a majority expressed a desire for an increase in deer numbers, regardless of where they hunted (Table 1).

Population trends and perceptions about deer populations

Respondents were asked to indicate their perceptions of deer population trends over the last 5 years. Overall, 84% of respondents indicated there were fewer deer than 5 years ago, 4% indicated more, and 11% believed populations were the same. We noted no statistical differences in responses for any of the deer permit areas (Table 2). Respondents were also asked for their perceptions of total deer population size as rated by ‘too low’, ‘about right’, or ‘too high’. Over three-quarters (79%) believed the population was ‘too low’, 19% thought it was ‘about right’, and 2% indicated the population was ‘too high’. We again observed no statistical differences among deer permit areas (Table 3). Respondents were also asked to indicate their desires for future deer population densities and most (85%) wanted to see an increase in deer densities at some level (Table 4, Figure 1). Interestingly, a majority of respondents (82%) would shoot an antlerless deer if given the opportunity.

Table 16. Condensed table of desired deer population trends of hunters, by land type hunted.

Type of land hunted		Desired Population Trend		
		Decrease	No Change	Increase
Private land that I own	None	5%	9%	86%
	Some	3%	10%	87%
	Most	5%	11%	84%
	All	5%	18%	77%
Private land that I lease for hunting	None	5%	12%	83%
	Some	0%	0%	100%
	Most	0%	0%	100%
	All	0%	0%	100%
Private land that I do not own or lease	None	5%	11%	84%
	Some	5%	10%	85%
	Most	1%	8%	91%
	All	9%	13%	79%
Public land	None	9%	19%	72%
	Some	2%	10%	88%
	Most	7%	7%	87%
	All	5%	9%	86%

Table 17. Hunter perceptions of deer population trends over the last 5 years, by deer permit area.

Deer Area	Lower		The Same		Higher	
	N	Percent	N	Percent	N	Percent
169	158	87%	16	9%	7	4%
172	174	81%	26	12%	14	7%
184	192	81%	33	14%	12	5%
197	71	88%	10	12%	0	0%
210	55	92%	4	7%	1	2%
298	65	88%	8	11%	1	1%
Total	715	84%	97	11%	35	4%

Table 18. Hunter beliefs about current deer population densities, by deer area.

Deer Area	Too Low		About Right		Too High	
	N	Percent	N	Percent	N	Percent
169	159	88%	19	11%	3	2%
172	164	77%	47	22%	3	1%
184	171	73%	59	25%	6	3%
197	68	83%	13	16%	1	1%
210	46	77%	13	22%	1	2%
298	61	82%	12	16%	1	1%
Total	669	79%	163	19%	15	2%

Table 19. Deer population trend preferences for hunters, by deer permit area.

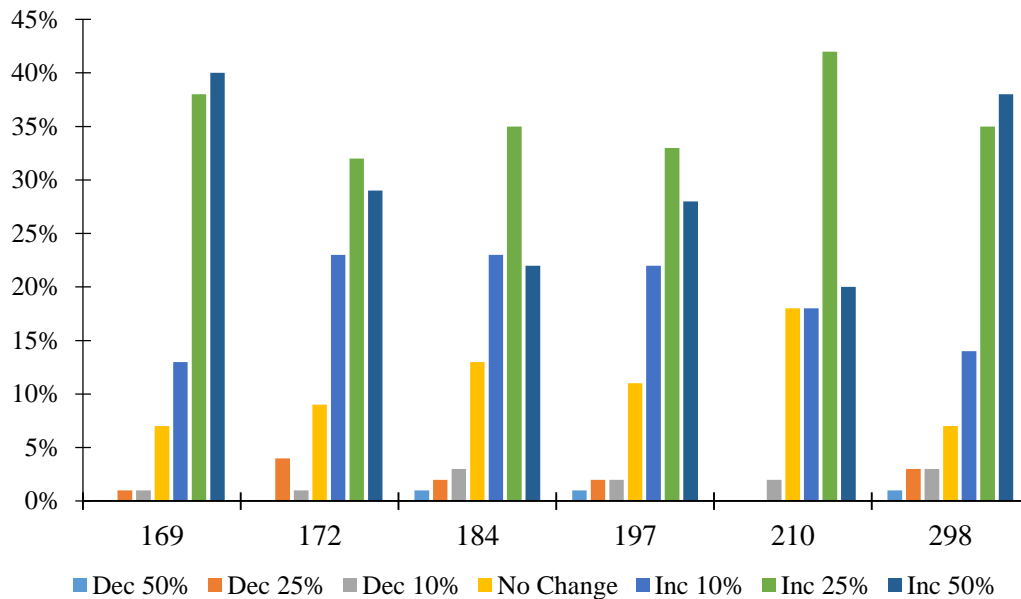
(c) By individual response

Deer Area	Dec 50%	Dec 25%	Dec 10%	No Change	Inc 10%	Inc 25%	Inc 50%
169	0%	1%	1%	7%	13%	38%	40%
172	0%	4%	1%	9%	23%	32%	29%
184	1%	2%	3%	13%	23%	35%	22%
197	1%	2%	2%	11%	22%	33%	28%
210	0%	0%	2%	18%	18%	42%	20%
298	1%	3%	3%	7%	14%	35%	38%
Total	1%	2%	2%	11%	20%	35%	30%

(d) Summarized by decrease, same, increase

Deer Area	Decrease	Same	Increase
169	2%	7%	91%
172	5%	9%	84%
184	6%	13%	80%
197	5%	11%	83%
210	2%	18%	80%
298	7%	7%	87%
Total	5%	11%	85%

Figure 11. Graphical representation of hunters' desired deer population trends.



Satisfaction

Hunters were asked to indicate their overall satisfaction with deer numbers, whether they heard about or saw legal bucks, their satisfaction with the number of legal bucks, quality of bucks, total number of deer and total number of antlerless deer. A low percentage (14%) were satisfied with current deer numbers; a majority (75%) indicated dissatisfaction (Table 5). Similarly, 22% of respondents indicated they were satisfied with the total number of deer they saw while hunting (67% were not satisfied and 11% were neutral). Almost one-third (32%) were satisfied with the total number of antlerless deer they observed. A low percentage (20%) were satisfied with the number of legal bucks observed; most were dissatisfied (66%). Slightly less than half (46%) indicated they saw heard about or saw legal bucks while hunting. More hunters (61%) were dissatisfied than satisfied (21%) with the quality of bucks observed (Table 6). Finally, we observed no real differences among land type hunted and satisfaction with total deer numbers; most expressed low levels of overall satisfaction with deer numbers (Figure 2).

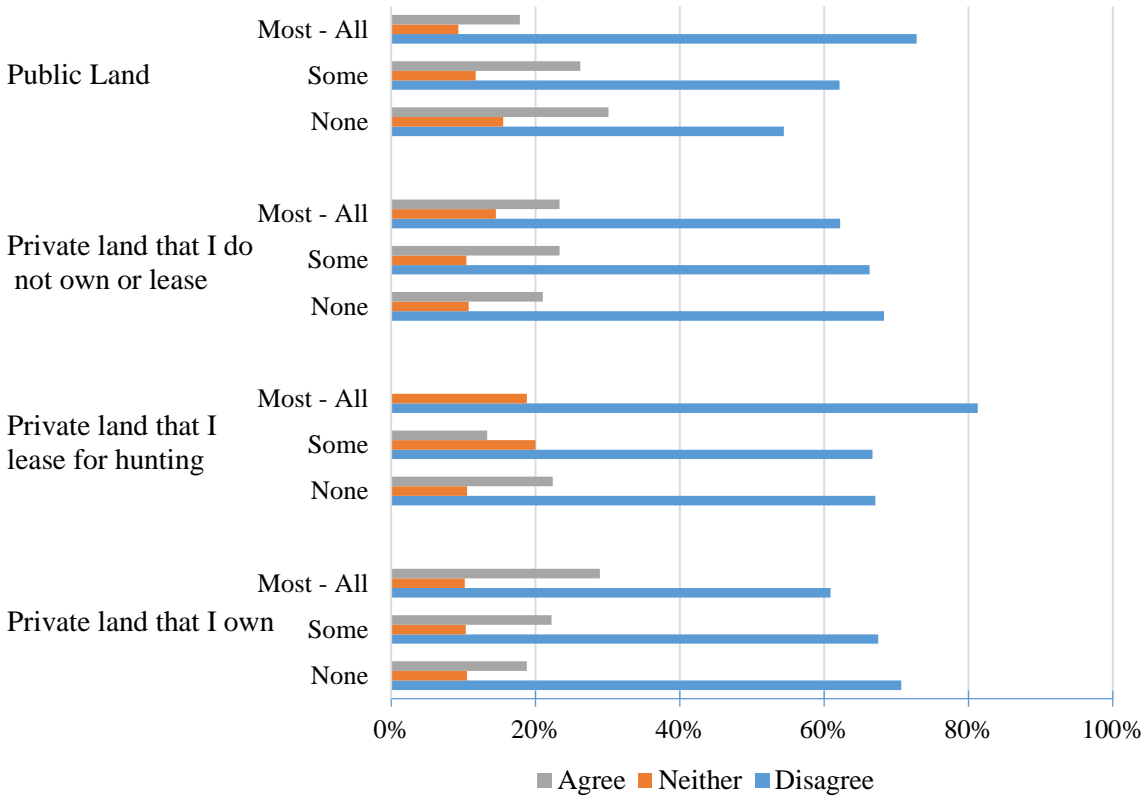
Table 20. Overall hunter satisfaction with total deer numbers, by deer area.

DPA	Dissatisfied		Neither		Satisfied	
	N	Percent	N	Percent	N	Percent
169	155	86%	13	7%	13	7%
172	159	74%	23	11%	32	15%
184	160	67%	27	11%	52	22%
197	63	77%	12	15%	7	9%
210	44	73%	8	13%	8	13%
298	56	76%	15	20%	3	4%
Total	637	75%	98	12%	115	14%

Table 21. Hunter satisfaction with number and quality of bucks, antlerless deer, and total deer numbers, by area.

		Deer Area						
		169	172	184	197	210	298	Total
I was satisfied with the number of legal bucks	Disagree	73%	70%	62%	70%	48%	66%	66%
	Neither	12%	11%	15%	17%	15%	11%	13%
	Agree	15%	19%	23%	13%	37%	23%	20%
I was satisfied with the quality of bucks	Disagree	60%	65%	55%	62%	58%	68%	61%
	Neither	24%	16%	17%	18%	15%	15%	18%
	Agree	15%	19%	28%	20%	27%	18%	21%
I heard about or saw legal bucks while hunting	Disagree	48%	50%	33%	48%	32%	42%	43%
	Neither	12%	6%	13%	13%	10%	18%	11%
	Agree	40%	44%	53%	39%	58%	41%	46%
I was satisfied with the total number of antlerless deer	Disagree	63%	53%	46%	60%	43%	60%	54%
	Neither	12%	10%	16%	17%	20%	18%	14%
	Agree	25%	36%	39%	23%	37%	22%	32%
I was satisfied with the total number of deer I saw while hunting	Disagree	74%	66%	62%	76%	55%	72%	67%
	Neither	10%	9%	12%	12%	15%	11%	11%
	Agree	16%	26%	27%	12%	30%	18%	22%

Figure 12. Hunter satisfaction with total number of deer seen, based on land type hunted.



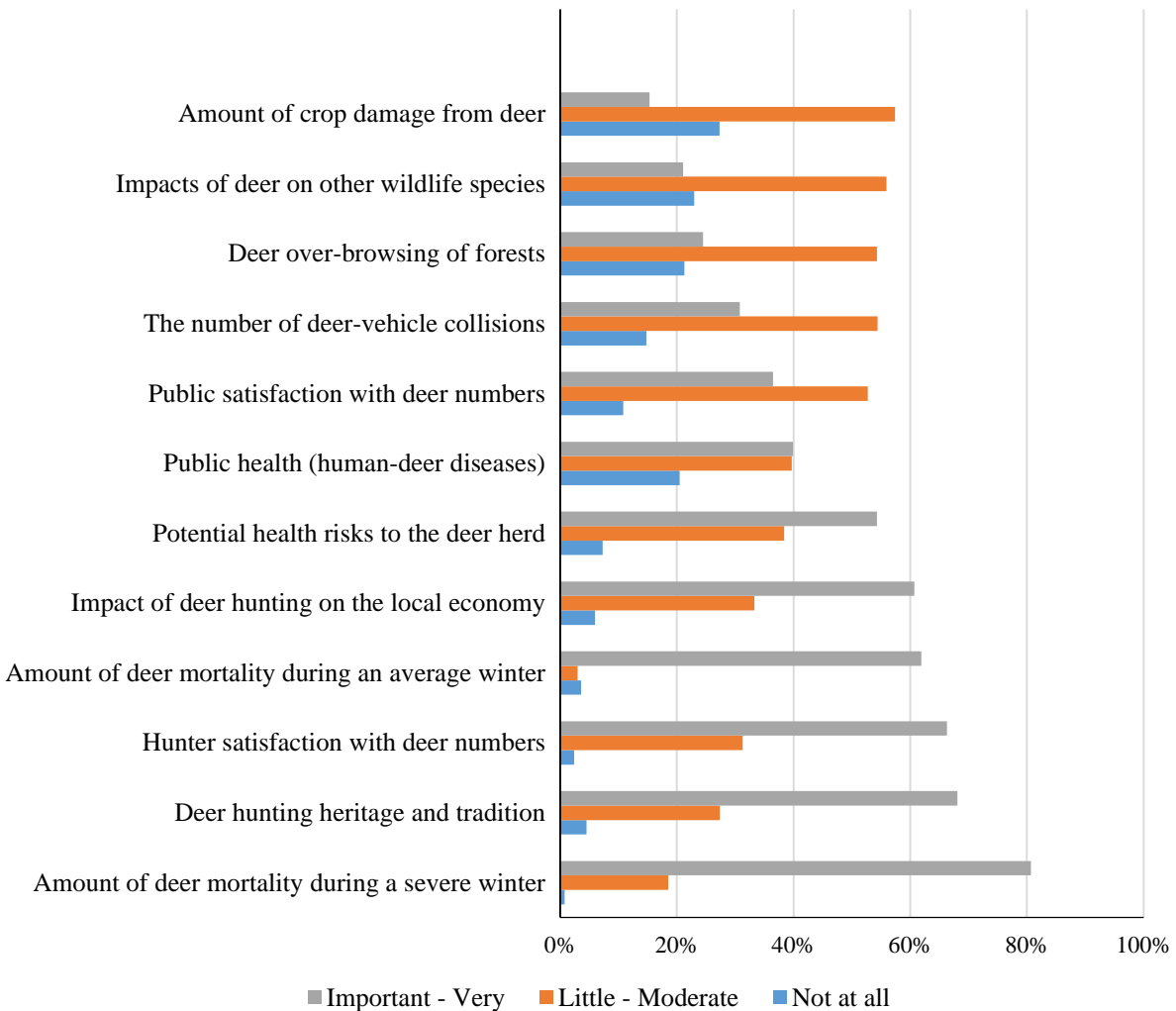
Consideration when setting deer population goals

Respondents were also asked to rate the importance of 12 items when setting deer population goals. They were expressed as items that respondents could consider as relatively important when setting deer population goals. The scale ranges from ‘not at all important’ to ‘very important’ and covered a range of items that would lead to management for either higher or lower deer populations. Overall, respondents were mixed in that they viewed severe winter mortality, hunter satisfaction, and deer hunting heritage as the 3 most important items. The amount of crop damage, impacts on other species, and deer over-browsing of forests were the 3 lowest variables (Table 7; Figure 3).

Table 22. Items that hunters believed should be important when considering setting deer population goals.

Item	Not at all	A little	Moderately	Important	Very Important
Amount of deer mortality during an average winter	4%	11%	24%	44%	18%
Amount of deer mortality during a severe winter	1%	5%	13%	37%	43%
Deer over-browsing of forests	21%	26%	29%	19%	5%
Public satisfaction with deer numbers	11%	20%	33%	25%	12%
Hunter satisfaction with deer numbers	2%	8%	23%	39%	27%
The number of deer-vehicle collisions	15%	27%	27%	21%	10%
Amount of crop damage from deer	27%	32%	25%	12%	4%
Impacts of deer on other wildlife species	23%	27%	29%	16%	5%
Potential health risks to the deer herd	7%	17%	22%	29%	25%
Public health (human-deer diseases)	21%	22%	18%	22%	18%
Impact of deer hunting on the local economy	6%	11%	23%	31%	29%
Deer hunting heritage and tradition	5%	9%	19%	30%	39%

Figure 13. Graphical importance of items that should be considered when setting deer population goals as defined by hunters. Items were consolidated into 3 groups and ranked by relative importance from low to high.



Landowner Survey

Demographics

We received 204, 231, 252, and 265 responses from the 4 strata, respectively. In total, 62% of respondents indicated they hunted deer in Minnesota during the 2013 deer season; similar percentages were reported for 2011 (64%) and 2012 (63%). Since those percentages did not vary, tables that describe hunter attitudes are based off whether or not they hunted in 2013 only. By stratum, a lower proportion of respondents who owned 2 – 20 acres indicated they hunted (48%), as compared to other landowners (20-79.9: 61%; 80-319.9: 66%; 320+: 69%). Overall, individuals had hunted an average of 39 years. In total, 91% of respondents were male and the average age was 62.0 (range = 24 – 94).

Hunting patterns

A majority of landowners did most (22%) or all (58%) of their hunting on their own private land. More than half (58%) did at least some hunting on public land and small percentage leased land for hunting (8.2%). In total, 31% hunted on private land they did not own. Regardless of where they hunted, a majority of hunting landowners expressed a desire for an increase in deer numbers (Table 8).

In total, 73% indicated they allowed hunting on their property. As expected, individuals with smaller parcels allowed hunting at lower rates (45%) than landowners with at least 20 acres (73% – 86%). Overall, only 3.4% (n = 24) of landowners indicated they leased their property for hunting. With respect to who is allowed to hunt, 83% indicated family members, 57% indicated friends or neighbors, and 9.4% allowed strangers who asked permission.

Reported damage from deer

The percentage of landowners who had acreage in crops (e.g., row crops, small grains, orchards, vegetables) increased by stratum. The percentage of respondents who owned woodlands or residential properties was consistent among stratum (Figure 4). Overall, 56% of landowners reported crop damage from deer and that percentage was not statistically different among stratum. Only 10% of woodlot owners indicated they had damage from deer; more landowners indicated residential damage (23%) (Figure 5).

We observed no clear patterns of severity of damage based on land type (crop, woods, residential) or strata by deer permit area. Landowners were most likely to describe their crop damage as ‘minor’ (52%) or ‘moderate’ (26%). Only 14% described damage as ‘negligible’ and smaller percentages indicated ‘severe’ or ‘very severe’ (8%) (Table 9). We observed a statistical difference among deer permit areas for landowners who reported damage to crops in that landowners in deer area 172 reported lower damage amounts. We found no differences in woods, or residential acreage damage (Figure 6).

Table 23. Condensed table of desired deer population trends for landowners that hunted by land type hunted.

Type of land hunted		Desired Population Trend		
		Decrease	No Change	Increase
Private land that I own	None	9%	12%	79%
	Some	10%	18%	72%
	Most	5%	12%	83%
	All	7%	14%	79%
Private land that I lease for hunting	None	6%	14%	80%
	Some	0%	0%	100%
	Most	25%	25%	50%
	All	0%	0%	100%
Private land that I do not own or lease	None	7%	14%	79%
	Some	10%	10%	79%
	Most	7%	27%	67%
	All	0%	25%	75%
Public land	None	7%	12%	81%
	Some	9%	16%	76%
	Most	6%	11%	83%
	All	5%	11%	84%

Figure 14. Percent of landowners who owned crops, woods, and residential acreage.

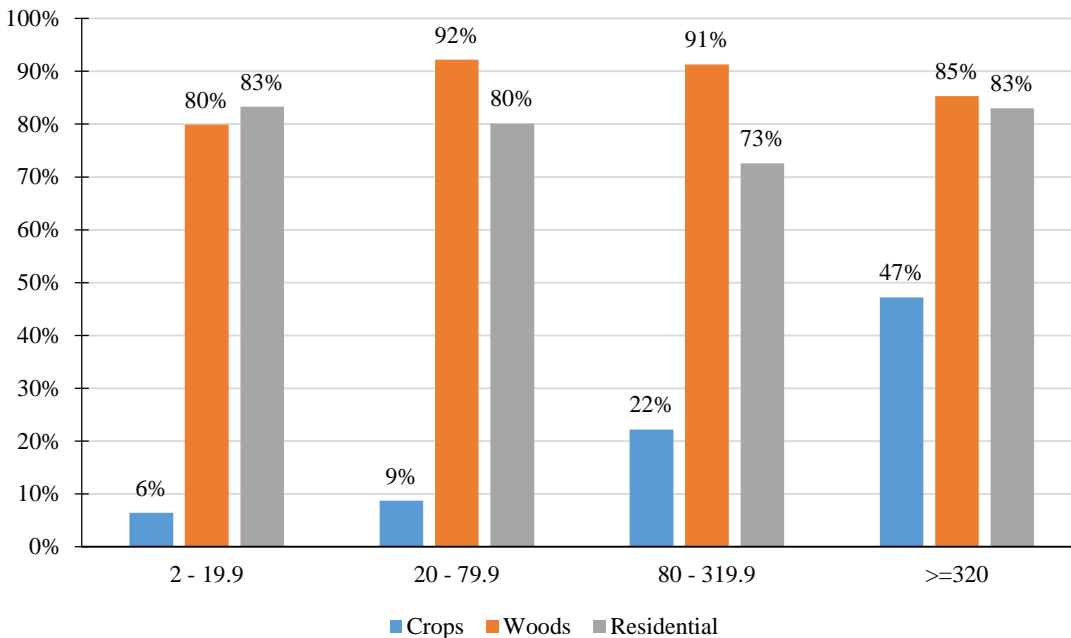


Figure 15. Percent of landowners who indicated they had damage from deer.

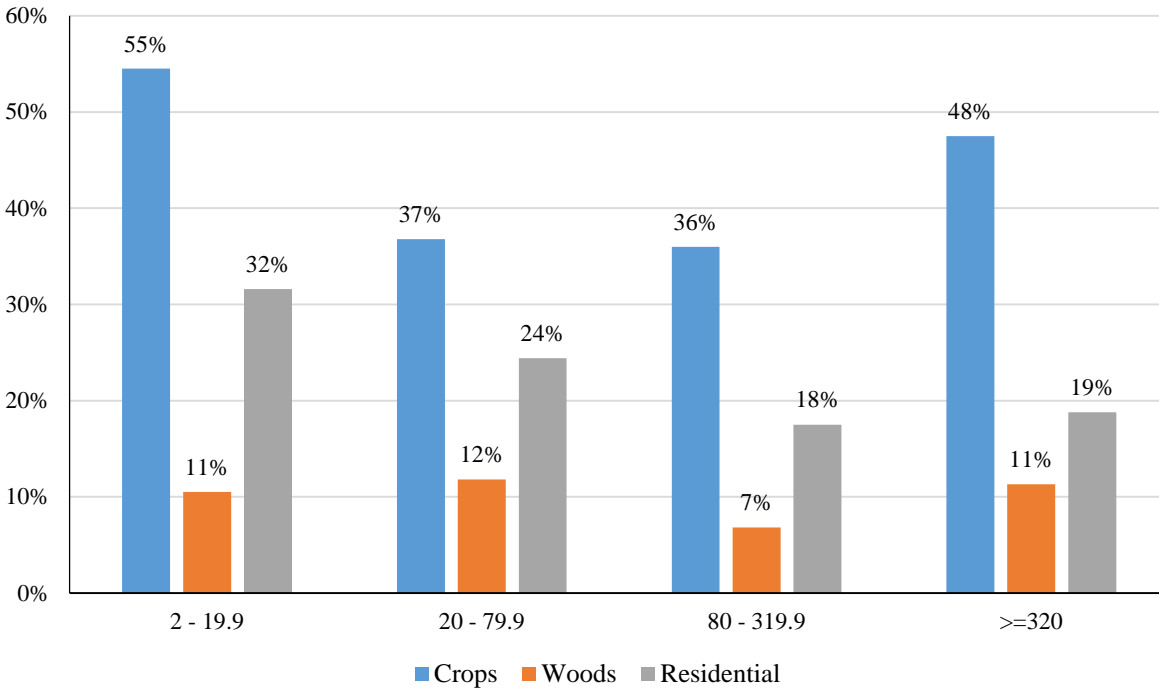
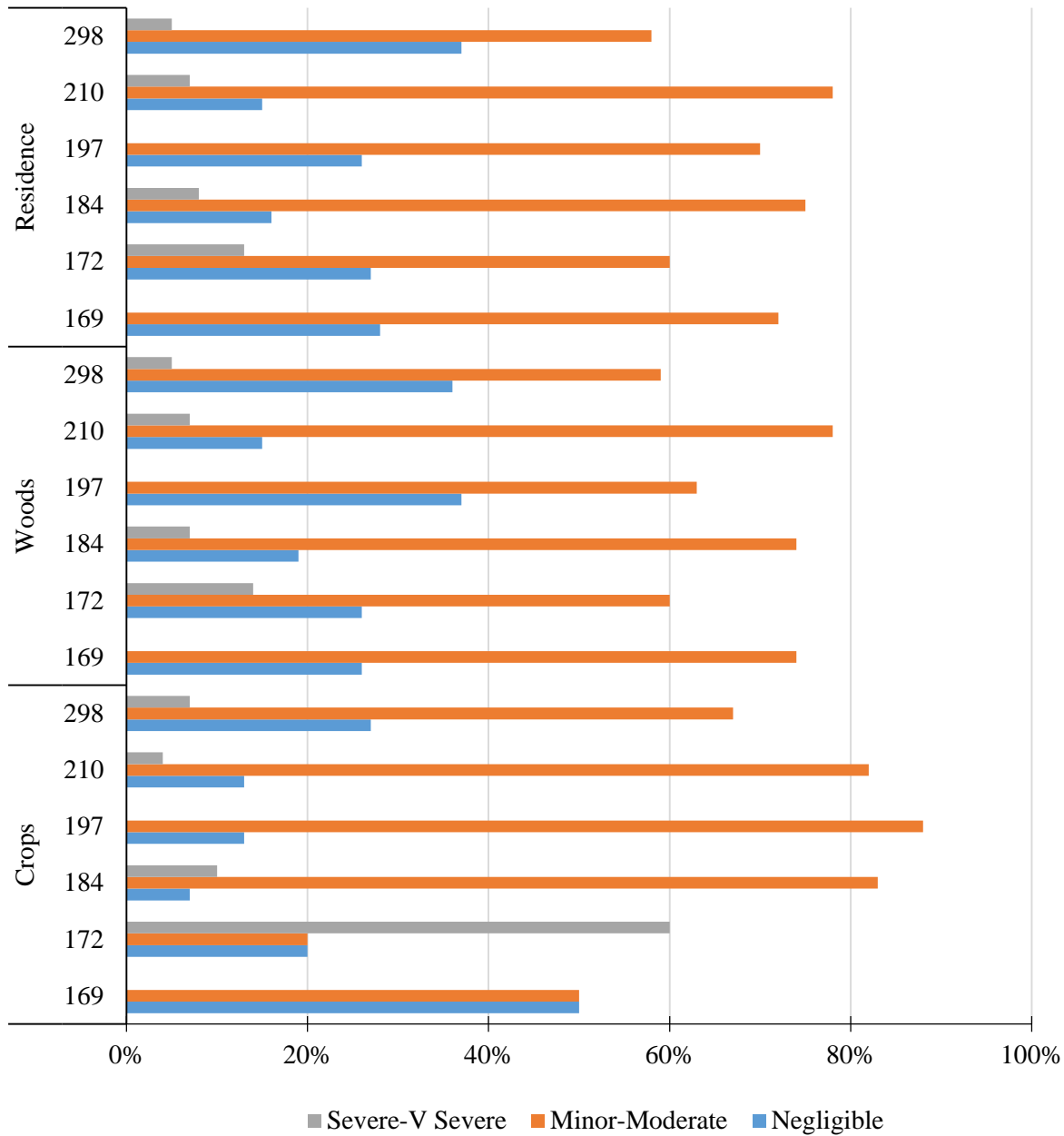


Table 24. Self-described damage caused by deer for crops, woods, and residential land types.

		Strata				Total
		2 - 19.9	20 - 79.9	80 - 319.9	>=320	
Crops	Negligible	11%	10%	7%	17%	14%
	Minor	44%	30%	56%	54%	52%
	Moderate	33%	30%	30%	23%	26%
	Severe	11%	30%	7%	4%	8%
	Very Severe	0%	0%	0%	1%	1%
Woods	Negligible	25%	22%	32%	16%	23%
	Minor	48%	52%	45%	55%	51%
	Moderate	23%	18%	17%	23%	20%
	Severe	2%	9%	5%	6%	6%
	Very Severe	2%	0%	0%	1%	1%
Residential	Negligible	24%	21%	25%	16%	21%
	Minor	52%	49%	44%	54%	50%
	Moderate	21%	21%	22%	21%	21%
	Severe	2%	10%	8%	7%	7%
	Very Severe	2%	0%	0%	1%	1%

Figure 16. Reported damage to crops, woods, and residential acreage, by deer permit area.



Population trends and perceptions about deer populations

Respondents were asked to indicate their perceptions of deer population trends over the last 5 years. Overall, 75% (63% non-hunters, 82% hunters) of respondents indicated there were fewer deer than 5 years ago, 7.1% (11% non-hunters, 4.9% hunters) indicated more, and 18% (26% non-hunters, 14% hunters) believed populations were the same. Respondents in deer area 172 were most likely to indicate populations were the same from 5 years ago (33%; Table 10). Respondents were also asked for their perceptions of total deer population size as rated by ‘too low’, ‘about right’, or ‘too high’. Non-hunting landowners were far more likely to indicate the

deer population was ‘about right (53% vs. 25%), while hunters were far more likely to indicate populations were ‘too low’ (65% vs 20%). Non-hunters were much more likely to indicate the population was ‘too high’ (9.7% hunters, 27% non-hunters). Similar patterns were detected by deer area in that hunting landowners were much more likely to express different population desires than non-hunting landowners (Table 11). Respondents were also asked to indicate their desires for future deer population densities and 68% wanted to see an increase in deer densities at some level (Table 12, Figure 7). We also observed clear differences between hunting and non-hunting landowners with hunting landowners indicating stronger preferences for higher deer populations (Table 13; Figure 8).

Table 25. Perceptions of landowner deer population trends over the last 5 years, by deer area.

Deer Area	Lower		The Same		Higher	
	N	Percent	N	Percent	N	Percent
169	109	78%	26	19%	4	3%
172	67	55%	41	33%	15	12%
184	216	74%	49	17%	28	10%
197	71	75%	15	16%	9	10%
210	146	85%	19	11%	7	4%
298	78	83%	15	16%	1	1%
Total	687	75%	165	18%	64	7%

Table 26. Landowner beliefs about current deer population densities, by deer area and whether or not they hunted.

Hunt	Deer Area	N	Too low	N	About right	N	Too high
No (38%)	169	19	40%	28	58%	1	2%
	172	12	25%	25	52%	11	23%
	184	32	34%	46	48%	17	18%
	197	18	46%	21	54%	0	0%
	210	20	32%	36	58%	6	10%
	298	19	59%	11	34%	2	6%
	Sum	120	37%	167	52%	37	11%
Yes (62%)	169	73	82%	14	16%	2	2%
	172	42	57%	28	38%	4	5%
	184	134	68%	54	27%	10	5%
	197	38	68%	16	29%	2	4%
	210	74	68%	32	29%	3	3%
	298	51	84%	10	16%	0	0%
	Sum	412	70%	154	26%	21	4%
Total	169	92	67%	42	31%	3	2%
	172	54	44%	53	43%	15	12%
	184	166	57%	100	34%	27	9%
	197	56	59%	37	39%	2	2%
	210	94	55%	68	40%	9	5%
	298	70	75%	21	23%	2	2%
	Total	532	58%	321	35%	58	6%

Table 27. Preferred landowner population trends, by deer area.

(a) by individual response

Deer Area	Dec 50%	Dec 25%	Dec 10%	No Change	Inc 10%	Inc 25%	Inc 50%
169	1%	2%	2%	20%	18%	26%	31%
172	2%	7%	5%	22%	25%	24%	14%
184	3%	6%	4%	22%	19%	31%	15%
197	0%	0%	3%	23%	27%	29%	17%
210	2%	2%	4%	26%	28%	25%	12%
298	3%	2%	1%	17%	18%	40%	18%
Total	2%	4%	4%	22%	22%	29%	17%

(b) Summarized by decrease, stay the same, increase

Deer Area	Decrease	Same	Increase
169	5%	20%	75%
172	14%	22%	63%
184	13%	22%	65%
197	3%	23%	73%
210	8%	26%	65%
298	6%	17%	76%
Total	10%	22%	68%

Figure 17. Graphical representation of desired deer population trends for landowners.

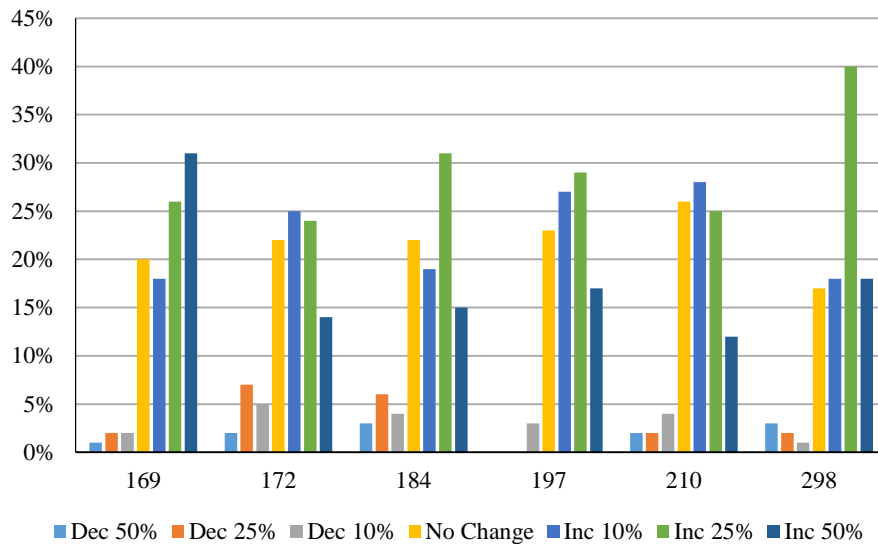
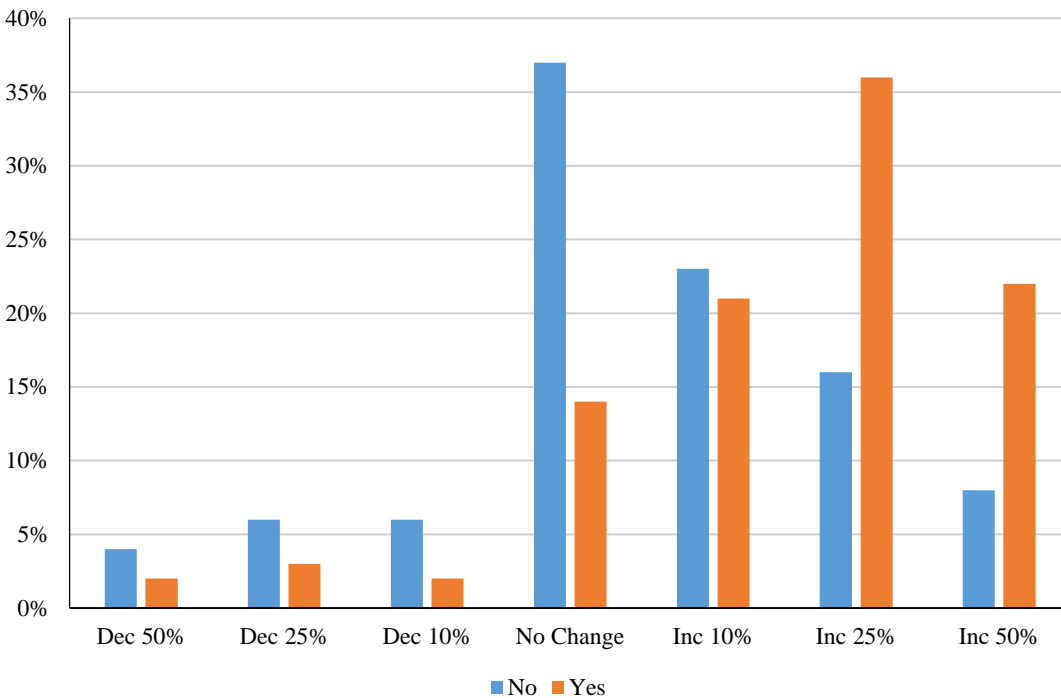


Table 28. Desired deer population trends for landowners, by deer area and whether or not they hunted.

Hunt	Deer Area	Dec 50%	Dec 25%	Dec 10%	No Change	Inc 10%	Inc 25%	Inc 50%
No (38%)	169	0%	2%	2%	49%	21%	13%	13%
	172	4%	15%	11%	30%	19%	19%	2%
	184	8%	11%	5%	34%	19%	13%	10%
	197	0%	0%	3%	33%	28%	23%	13%
	210	3%	2%	9%	47%	26%	10%	3%
	298	3%	3%	3%	25%	34%	22%	9%
	Total		4%	6%	6%	37%	23%	16%
Yes (62%)	169	1%	2%	2%	5%	16%	33%	41%
	172	1%	3%	1%	18%	28%	27%	22%
	184	2%	4%	4%	16%	18%	39%	17%
	197	0%	0%	4%	16%	27%	34%	20%
	210	2%	3%	2%	16%	29%	32%	17%
	298	3%	2%	0%	13%	10%	49%	23%
	Total		2%	3%	2%	14%	21%	36%

Figure 18. Graphical representation of landowner desires for future deer populations, by whether or not they hunted.



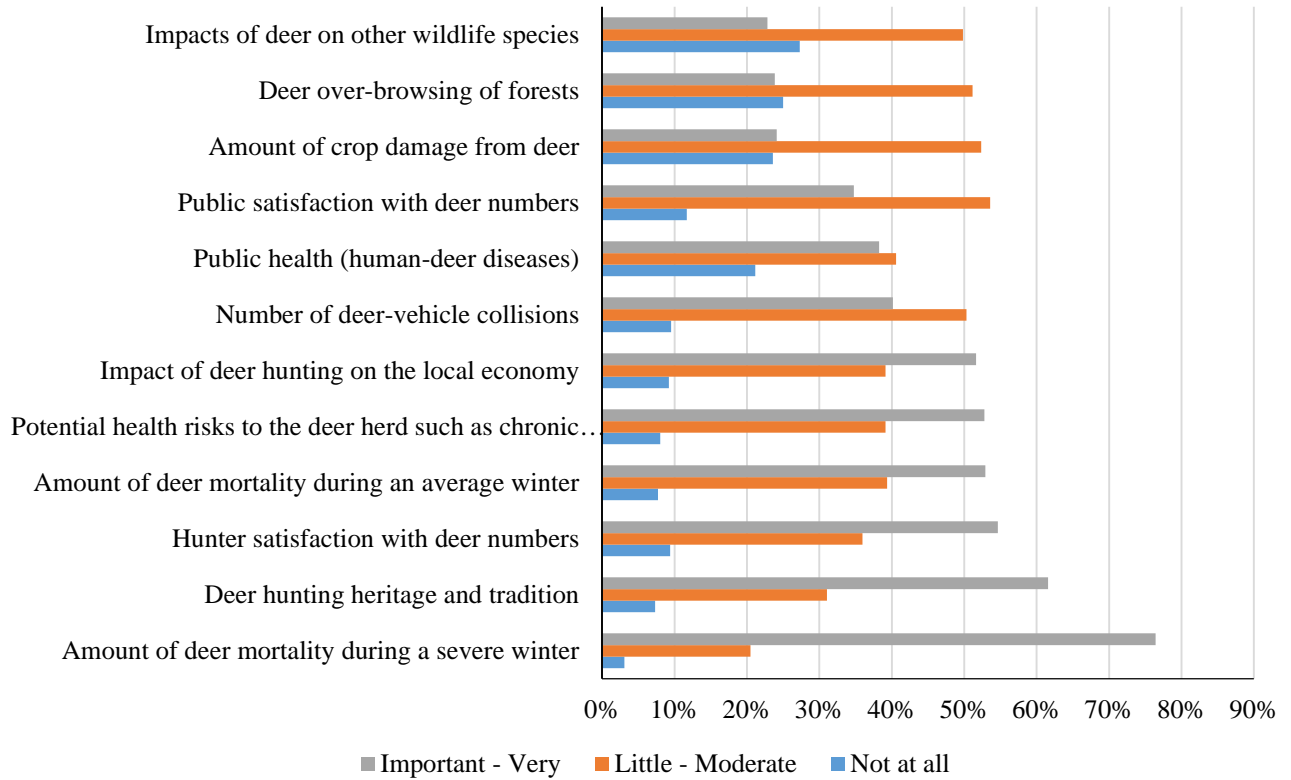
Consideration when setting deer population goals

Respondents were also asked to rate the importance of 12 items when setting deer population goals. The scale ranges from ‘not at all important’ to ‘very important’ and covered a range of items that would lead to both higher and lower deer populations. There were some similarities and some differences between the hunter and landowner surveys. Deer mortality during a severe winter, deer hunting tradition, and hunter satisfaction were the 3 most important considerations for landowner. Impacts of deer on other species, deer over-browsing, and crop damage had the lowest relative importance (Table 14; Figure 9).

Table 29. Importance of items landowners indicated should be considered when setting deer population goals.

Item	Not at all	A little	Moderately	Important	Very
Amount of deer mortality during an average winter	7%	11%	28%	40%	13%
Amount of deer mortality during a severe winter	3%	7%	14%	33%	43%
Deer over-browsing of forests	25%	26%	25%	16%	8%
Public satisfaction with deer numbers	12%	19%	35%	25%	9%
Hunter satisfaction with deer numbers	9%	13%	24%	34%	21%
Number of deer-vehicle collisions	10%	23%	27%	24%	16%
Amount of crop damage from deer	23%	27%	25%	16%	8%
Impacts of deer on other wildlife species	28%	25%	25%	18%	6%
Potential health risks to the deer herd	8%	18%	21%	28%	25%
Public health (human-deer diseases)	21%	23%	18%	21%	18%
Impacts of deer specifically on moose	7%	12%	19%	30%	32%
Impact of deer hunting on local economy	9%	14%	25%	30%	21%

Figure 19. Graphical importance of items that should be considered when setting deer population goals as defined by landowners. Items were consolidated into 3 groups and ranked from low to high by highest importance.



Appendix A. North Central Plains Moraines (Block G2) hunter survey

2014 Survey of Minnesota Deer Hunters: Population Management

The Minnesota Department of Natural Resources will be evaluating deer population goals in northern Minnesota this year. An important component of this project is to collect information from deer hunters regarding their opinions towards deer populations. You have been selected at random to participate in this survey. Please take a few moments to answer the questions below. Your responses will help guide deer population goals in the area you hunt. This survey should take less than 10 minutes to complete.

15. Please check the boxes below to report if you hunted deer in Minnesota during the 2011, 2012 or 2013 Minnesota deer season. (*Please check all that apply*).

- 2011 | 2012 | 2013
 I did not hunt deer any of these years → Please skip to Question 13

16. Minnesota allows people to hunt deer during all 3 seasons. For the most recent year you hunted, which seasons did you participate? Please mark 'Yes' if you hunted a season and also estimate the number of days you hunted.

Season	Yes	No	If Yes, Number of Days
Archery	<input type="checkbox"/>	<input type="checkbox"/>	_____
Firearm	<input type="checkbox"/>	<input type="checkbox"/>	_____
Muzzleloader	<input type="checkbox"/>	<input type="checkbox"/>	_____

17. Which **ONE** deer permit area did you hunt most often during the most recent deer season you hunted?

- 169 | 172 | 184 | 197 | 210 | 298 | I hunted a permit area not listed

18. If you did not hunt one of the permit areas listed above, please tell us which one you hunted most often:

_____ Area Number

19. Including 2013, how many years have you hunted deer in the permit area you hunt most often?

_____ Years

20. Including 2013, how many years have you been hunting deer in Minnesota? _____ Years

21. How much of your deer hunting did you do on each of the following types of land during your most recent deer hunting season? (*Please circle one item from each row.*)

	None	Some	Most	All
Private land that I own	1	2	3	4
Private land that I lease for hunting	1	2	3	4
Private land that I do not own or lease	1	2	3	4
Public land	1	2	3	4

22. Please indicate if there are any deer harvest restrictions on the property you hunt most often.

- Antlerless harvest is restricted, but hunters can take any legal buck
- Buck harvest restricted to large antlered bucks, but hunters can take any antlerless deer
- Buck harvest restricted to large antlered bucks, and antlerless harvest is also restricted
- No restrictions on the type of deer that can be harvested
- Other (please explain): _____

23. Please indicate whether you agree or disagree with the following statements regarding your most recent deer hunt. (Please circle one number for each statement below).

	Strongly Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Strongly Agree
I was satisfied with the number of legal bucks	1	2	3	4	5
I was satisfied with the quality of bucks	1	2	3	4	5
I heard about or saw legal bucks while hunting	1	2	3	4	5
I was satisfied with the number of antlerless deer	1	2	3	4	5
I was satisfied with the number of deer I saw while hunting	1	2	3	4	5

24. Will you shoot an antlerless deer if given the opportunity?

- Yes No

25. Over the past 5 years, what trend have you seen in the deer population in the permit area you hunt most often?

- Much fewer deer now than 5 years ago
- Slightly fewer deer now than 5 years ago
- About the same number of deer as 5 years ago
- Slightly more deer now than 5 years ago
- Many more deer now than 5 years ago

26. In thinking about the deer permit area you hunt, please indicate your overall satisfaction with current deer numbers.

- Very Dissatisfied
- Slightly Dissatisfied
- Neither Dissatisfied nor Satisfied
- Slightly Satisfied
- Very Satisfied

27. How much importance should we assign to each of the following considerations when setting deer population goals? (*Please circle one number for each statement below*).

	Not at all Important	A little Important	Moderately Important	Important	Very Important
Amount of deer mortality during an average winter	1	2	3	4	5
Amount of deer mortality during a severe winter	1	2	3	4	5
Potential health risks to the deer herd	1	2	3	4	5
Public health (human-deer diseases)	1	2	3	4	5
Amount of crop damage from deer	1	2	3	4	5
Number of deer-vehicle collisions	1	2	3	4	5
Deer over-browsing of forests	1	2	3	4	5
Impacts of deer on other wildlife species	1	2	3	4	5
Deer hunting heritage and tradition	1	2	3	4	5
Hunter satisfaction with deer numbers	1	2	3	4	5
Public satisfaction with deer numbers	1	2	3	4	5
Impact of deer hunting on the local economy	1	2	3	4	5

28. Please identify up to 3 other factors that you believe are important and should be considered when setting deer population goals.

- A. _____
- B. _____
- C. _____

18. In thinking about the deer permit area you hunt, would you say the deer population is,

- Much too Low Too Low About Right Too High Much too High

19. In thinking about the property you hunt 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 | Decrease | Decrease | No Change | Increase | Increase | Increase |
| Population | Population | Population | | Population | Population | Population |
| 50% | 25% | 10% | | 10% | 25% | 50% |
| (Significant) | (Moderate) | (Slight) | | (Slight) | (Moderate) | (Significant) |

20. 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? (*Check one*)

- Strongly Oppose
- Slightly Oppose
- Neither Oppose nor Support
- Slightly Support
- Strongly Support

21. Please let us know how you feel about the Minnesota Department of Natural Resources. (*Please circle one response for each of the following statements.*)

	Strongly Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Strongly Agree
The MnDNR does a good job of managing deer in Minnesota.	1	2	3	4	5
When deciding about deer management in Minnesota, the MnDNR will be open and honest in the things they do and say.	1	2	3	4	5
The MnDNR can be trusted to make decisions about deer management that are good for the resource.	1	2	3	4	5
The MnDNR will make decisions about deer management in a way that is fair.	1	2	3	4	5
The MnDNR has deer managers and biologists who are well-trained for their jobs.	1	2	3	4	5
The MnDNR listens to the concerns of deer hunters.	1	2	3	4	5

22. What is your gender?

- Male
- Female

23. What year were you born? _____ (*Please use the 4 digit year.*)

If you would be willing to respond to additional questions about deer management and hunting in Minnesota and are willing to provide your email address, please write it below. We will only use your email address for research related to deer management and will not share it with anyone.

E-mail address: _____

2014 Survey of Northern Minnesota Landowners: Deer Management

The Minnesota Department of Natural Resources will be evaluating deer population goals in northern Minnesota this year. An important component of this project is to collect information from landowners regarding their opinions towards deer populations and land management. You have been selected at random to participate in this survey. Please take a few moments to answer the questions below. This survey should take less than ten minutes to complete. Your responses will help guide deer population goals in the area you own land.

1. How many total acres did you own and/or lease at the end of 2013?
 _____ 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. Please also estimate the percentage of that land type you have enrolled in a State or Federal Conservation Program.

Land Type	Acres Owned	Acres Leased	% Enrolled in Conservation Program
Private Residence (house, lawns, associated buildings)			%
Woodlands (natural forest or tree plantings)			%
Brushland (including abandoned, overgrown fields)			%
Hayfields, Pasture, or Grassland			%
Wetlands			%
Row Crops			%
Small Grains			%
Orchards or Vineyards			%
Vegetables or other Truck Crops			%
Prairie (Native or Restored)			%
Wildlife Food Plots			%
Other (please list: _____)			%

3. Did you experience deer damage to land that you own or leased in 2013?

Crops	<input type="checkbox"/> Yes	<input type="checkbox"/> No	➤	IF ALL ARE <u>NO</u> PLEASE SKIP TO QUESTION 6
Woodlands	<input type="checkbox"/> Yes	<input type="checkbox"/> No		
Landscaping	<input type="checkbox"/> Yes	<input type="checkbox"/> No		

4. How would you describe the total amount of deer damage you experienced in 2013? (*Check one*)

<input type="checkbox"/> Negligible	<input type="checkbox"/> Minor	<input type="checkbox"/> Moderate	<input type="checkbox"/> Severe	<input type="checkbox"/> Very Severe
-------------------------------------	--------------------------------	-----------------------------------	---------------------------------	--------------------------------------

5. How would you compare the amount of deer damage you experienced in 2013 to what you experienced 5 years ago? (*Check one*)
 - Much less damage than 5 years ago
 - Slightly less damage than 5 years ago
 - About the same damage as 5 years ago
 - Slightly more damage than 5 years ago
 - Much more damage than 5 years ago
 - I was not farming/managing lands 5 years ago

6. Over the past 5 years, what trend have you seen in the deer population in the area of your property? (Check one)
- Much fewer deer now than 5 years ago
 - Slightly fewer deer now than 5 years ago
 - About the same number of deer now as 5 years ago
 - Slightly more deer now than 5 years ago
 - Many more deer now than 5 years ago

7. In thinking about your property and the surrounding area, please indicate your overall satisfaction with current deer numbers. (Check one)
- Very Dissatisfied
 - Slightly Dissatisfied
 - Neither Dissatisfied nor Satisfied
 - Slightly Satisfied
 - Very Satisfied

8. How much importance should we assign to each of the following considerations when setting deer population goals? (Please circle one number for each statement below)

	Not at all Important	A little Important	Moderately Important	Important	Very Important
Amount of deer mortality during an average winter	1	2	3	4	5
Amount of deer mortality during a severe winter	1	2	3	4	5
Potential health risks to the deer herd such as chronic wasting disease	1	2	3	4	5
Public health (human-deer diseases)	1	2	3	4	5
Amount of crop damage from deer	1	2	3	4	5
Number of deer-vehicle collisions	1	2	3	4	5
Deer over-browsing of forests	1	2	3	4	5
Impacts of deer on other wildlife species	1	2	3	4	5
Deer hunting heritage and tradition	1	2	3	4	5
Hunter satisfaction with deer numbers	1	2	3	4	5
Public satisfaction with deer numbers	1	2	3	4	5
Impact of deer hunting on the local economy	1	2	3	4	5

10. Please identify up to 3 other factors that you believe are important and should be considered when setting deer population goals.

- A. _____
- B. _____
- C. _____

23. In thinking about your property and the surrounding area, would you say the deer population is, (Check one)

- Much too Low Too Low About Right Too High Much too High

24. 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 Population 50% (Significant)	Decrease Population 25% (Moderate)	Decrease Population 10% (Slight)	No Change	Increase Population 10% (Slight)	Increase Population 25% (Moderate)	Increase Population 50% (Significant)

25. Did you allow hunting on your property during the 2013 deer season? *(Check only one)*

- Yes
- No → PLEASE SKIP TO QUESTION 16

26. Do you lease any of your property for deer hunting?

- Yes
- No

27. 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 2013.

- | | | |
|---|--|--|
| <input type="checkbox"/> Myself or family members _____ people

<input type="checkbox"/> Friends or neighbors _____ people

<input type="checkbox"/> Other (please list: _____) _____ people | | <input type="checkbox"/> Strangers who ask permission _____ people

<input type="checkbox"/> People who lease my property _____ people |
|---|--|--|

28. Please indicate if you impose any deer harvest restrictions on your property. *(Please check one only)*

- Antlerless harvest is restricted, but hunters can take any legal buck
- Buck harvest restricted to large antlered bucks, but hunters can take any antlerless deer
- Buck harvest restricted to large antlered bucks, and antlerless harvest is also restricted
- No restrictions on the type of deer that can be harvested
- Other (please list: _____)

29. Please check the boxes below if you hunted deer in Minnesota during the 2011, 2012 or 2013 Minnesota deer season? *(Please check all that apply)*

- 2011 | 2012 | 2013
- I hunt deer but did not hunt any of these years → Please skip to Question 20
- I do not hunt deer at all → Please skip to Question 21

30. Which **ONE** deer permit area did you hunt most often during the most recent deer season you hunted?

- 169 | 172 | 184 | 197 | 210 | 298 | I hunted a permit area not listed

31. If you did not hunt one of the permit areas listed above, please tell us which one you hunted most often:
 _____ Area Number

32. 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 row)

	None	Some	Most	All
Private land that I own	1	2	3	4
Private land that I lease for hunting	1	2	3	4
Private land that I do not own or lease	1	2	3	4
Public land	1	2	3	4

33. Including 2013, how many years have you been hunting deer in Minnesota? _____ Years.

34. To what extent would you support or oppose a regulation that would increase the proportion of antlered bucks in the area you own property? (Check one)

- Strongly Oppose
- Slightly Oppose
- Neither Oppose nor Support
- Slightly Support
- Strongly Support

24. Please let us know how you feel about the Minnesota Department of Natural Resources. (Please circle one response for each of the following statements.)

	Strongly Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Strongly Agree
The MnDNR does a good job of managing deer in Minnesota.	1	2	3	4	5
When deciding about deer management in Minnesota, the MnDNR will be open and honest in the things they do and say.	1	2	3	4	5
The MnDNR can be trusted to make decisions about deer management that are good for the resource.	1	2	3	4	5
The MnDNR will make decisions about deer management in a way that is fair.	1	2	3	4	5
The MnDNR has deer managers and biologists who are well-trained for their jobs.	1	2	3	4	5
The MnDNR listens to the concerns of landowners.	1	2	3	4	5

26. What is your gender?

- Male
- Female

27. What year were you born? _____ (Please use the 4 digit year)

If you would be willing to respond to additional questions about deer management and hunting in Minnesota and are willing to provide your email address, please write it below. We will only use your email address for research related to deer management and will not share it with anyone.

E-mail address: _____

Pine Moraines (Block G3)
Deer Goal Setting
Landowner and Hunter Survey Results



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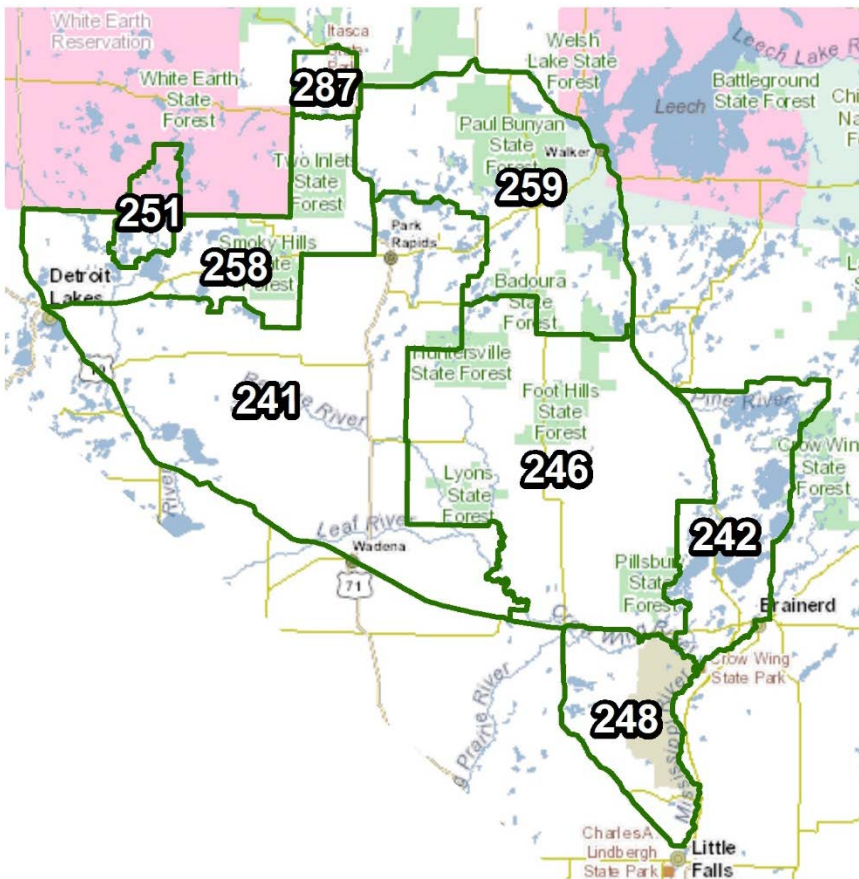
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Public Surveys for Deer Goal Setting

MN DNR periodically conducts stakeholder surveys to collect information about public desires and opinions regarding specific natural resource management issues. Survey recipients are selected randomly and provide a statistically representative sample of stakeholder opinions. Thus, these surveys differ from annual public input opportunities which may include some bias according to self-selection of interested parties. In 2014, both hunters (Appendix A) and landowners (Appendix B) in this goal setting block were surveyed; the resulting information provides a basis for the 2015 deer population goal setting process. This report covers goal block G3, Pine Moraines.



Methods

Hunters and private landowners were surveyed using a mixed mode design that included two waves of letters requesting survey completion online; the third wave was mailed using a self-administered mail back questionnaire (Appendices A and B).

We randomly selected 2,000 adult 2013 deer license holders who indicated they intended to hunt in deer areas 241, 242, 246, 248, 251, 258, 259, or 287. A total of 79 were undeliverable and we received 763 completed responses, which yielded an adjusted response rate of 39.7%.

Landowner parcels were stratified into 4 acreages, 1) 2 – 19.9, 2) 20 – 79.9, 3) 80 – 319.9, and 4) 320+. We selected a simple random sample from strata 1-3 (n = 640) and surveyed all landowners in stratum 4 (N = 383). Overall, we removed 79 landowners from the mailing due to already receiving a hunter survey and there were 193 undeliverable surveys; 867 completed landowner surveys were returned, yielding a 42.7% adjusted response rate. For both surveys, our error rate at the goal block level was 3.5%.

Hunter Survey

Demographics

Nearly all respondents (98%) indicated they hunted during the 2013 firearm deer season. Overall 21% indicated they hunted deer during the archery season and 19% hunted muzzleloader. Firearm hunters spent an average of 5.1 days afield, compared to 5.7 for muzzleloader and 15.0 for archery hunters. Overall, individuals had hunted an average of 28 years in Minnesota and 19 years in the deer area they indicated they hunted most often. Overall, 87% of respondents were male and the average age was 51.4 (range = 19 – 91).

Most hunters did at least some of their hunting on their own private land (64%), other private land (64%), or public land (65%). Another 14% indicated they did at least some hunting on lands that they leased for deer hunting. Only 4.2% of respondents hunted exclusively on land they leased. Also, we found no statistical differences among hunters, based on the lands they hunted. With respect to future populations; a majority expressed a desire for an increase in deer numbers, regardless of where they hunted (Table 1).

Population trends and perceptions about deer populations

Respondents were asked to indicate their perceptions of deer population trends over the last 5 years. Overall, 69% of respondents indicated there were fewer deer than 5 years ago, 10% indicated more, and 21% believed populations were the same. We noted differences in responses with 92% of 287 hunters (Itasca State Park) most likely to indicate deer populations had declined (Table 2). Respondents were also asked for their perceptions of total deer population size as rated by ‘too low’, ‘about right’, or ‘too high’. Slightly more than half (54%) believed the population was ‘too low’, 40% thought it was ‘about right’, and 6% indicated the population was ‘too high’. Respondents in deer area 241 were most likely to indicate that populations were about right (50%) or too high (10%) (Table 3). Respondents were also asked to indicate their desires for future deer population densities and slightly more than two-thirds (68%) wanted to see an increase in deer densities at some level (Table 4, Figure 1). Interestingly, most respondents (88%) would shoot an antlerless deer if given the opportunity.

Table 30. Condensed table of desired deer population trends of hunters, by land type hunted.

Type of land hunted		Desired Population Trend		
		Decrease	No Change	Increase
Private land that I own	None	6%	20%	73%
	Some	8%	15%	77%
	Most	12%	28%	59%
	All	11%	26%	63%
Private land that I lease for hunting	None	9%	21%	70%
	Some	4%	24%	72%
	Most	0%	29%	71%
	All	11%	22%	67%
Private land that I do not own or lease	None	8%	20%	72%
	Some	5%	21%	73%
	Most	13%	22%	65%
	All	11%	27%	62%
Public land	None	10%	23%	68%
	Some	8%	22%	69%
	Most	6%	21%	73%
	All	4%	13%	83%

Table 31. Hunter perceptions of deer population trends over the last 5 years, by deer permit area.

Deer Area	Lower		The Same		Higher	
	N	Percent	N	Percent	N	Percent
241	121	59%	50	25%	33	16%
242	51	73%	11	16%	8	11%
246	152	73%	44	21%	13	6%
248	23	59%	12	31%	4	10%
251	13	77%	2	12%	2	12%
258	34	79%	7	16%	2	5%
259	67	74%	15	17%	9	10%
287	12	92%	1	8%	0	0%
Total	473	69%	142	21%	71	10%

Table 32. Hunter beliefs about current deer population densities, by deer area.

Deer Area	Too Low		About Right		Too High	
	N	Percent	N	Percent	N	Percent
241	79	39%	102	50%	22	11%
242	32	45%	35	49%	4	6%
246	124	59%	77	37%	8	4%
248	19	49%	19	49%	1	3%
251	15	88%	2	12%	0	0%
258	26	62%	15	36%	1	2%
259	62	68%	24	26%	5	5%
287	10	77%	3	23%	0	0%
Total	367	54%	277	40%	41	6%

Table 33. Deer population trend preferences for hunters, by deer permit area.

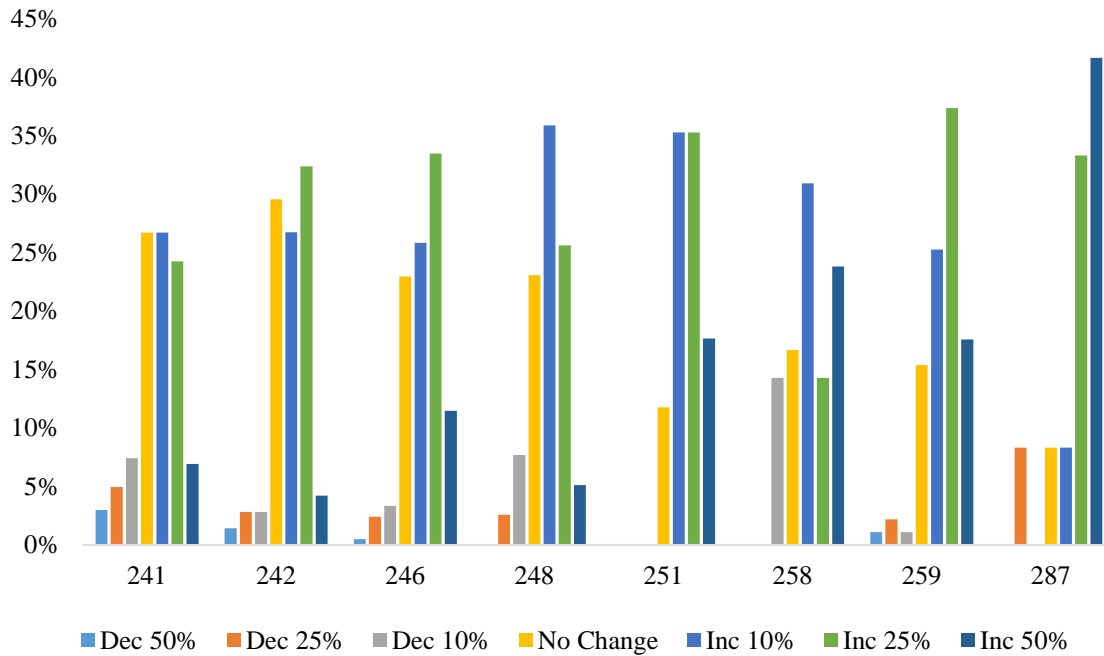
(e) By individual response

Deer Area	Dec 50%	Dec 25%	Dec 10%	No Change	Inc 10%	Inc 25%	Inc 50%
241	3%	5%	7%	27%	27%	24%	7%
242	1%	3%	3%	30%	27%	32%	4%
246	0%	2%	3%	23%	26%	33%	11%
248	0%	3%	8%	23%	36%	26%	5%
251	0%	0%	0%	12%	35%	35%	18%
258	0%	0%	14%	17%	31%	14%	24%
259	1%	2%	1%	15%	25%	37%	18%
287	0%	8%	0%	8%	8%	33%	42%
Total	1%	3%	5%	23%	27%	30%	11%

(f) Summarized by decrease, same, increase

Deer Area	Decrease	Same	Increase
241	15%	27%	58%
242	7%	30%	63%
246	6%	23%	71%
248	10%	23%	67%
251	0%	12%	88%
258	14%	17%	69%
259	4%	15%	80%
287	8%	8%	83%
Total	9%	23%	68%

Figure 20. Graphical representation of hunters' desired deer population trends.



Satisfaction

Hunters were asked to indicate their overall satisfaction with deer numbers, whether they heard about or saw legal bucks, their satisfaction with the number of legal bucks, quality of bucks, total number of deer and total number of antlerless deer. Less than half (31%) were satisfied with current deer numbers; a majority (55%) indicated dissatisfaction (Table 5). Similarly, 39% of respondents indicated they were satisfied with the total number of deer they saw while hunting (48% were not satisfied and 18% were neutral). Nearly half (47%) were satisfied with the total number of antlerless deer they observed. Fewer hunters (34%) were satisfied with the number of legal bucks observed; 48% of hunters indicated dissatisfaction with the number of legal bucks observed although a majority (59%) indicated they saw heard about or saw legal bucks while hunting. More hunters (49%) were dissatisfied than satisfied (34%) with the quality of bucks observed (Table 6). Finally, a higher percentage of people who did at least some of their hunting on their own property expressed satisfaction with total deer numbers, as compared to public land hunters, those who lease, and people who hunt private land they don't own (Figure 2).

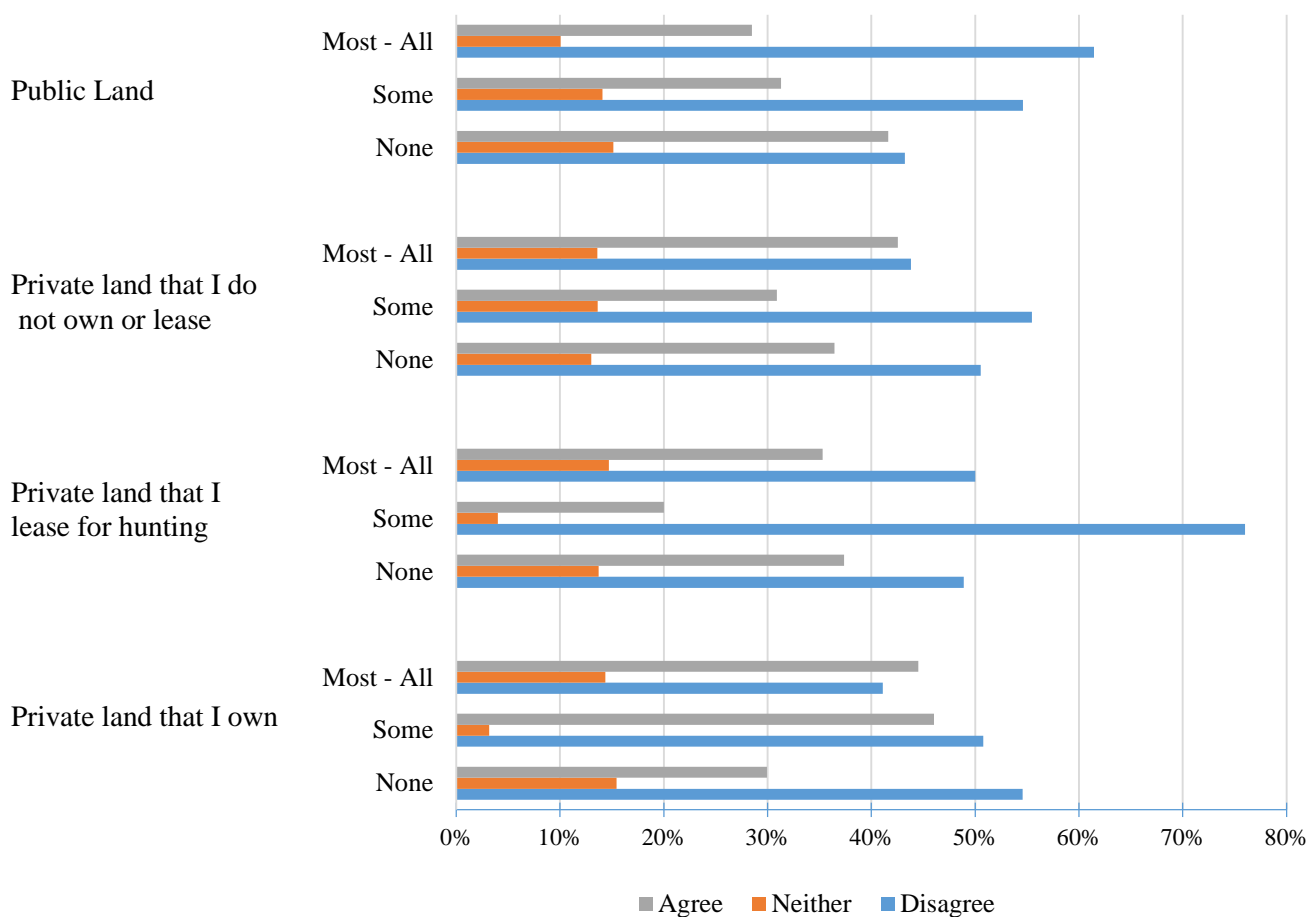
Table 34. Overall hunter satisfaction with total deer numbers, by deer area.

	Dissatisfied		Neither		Satisfied	
	N	Percent	N	Percent	N	Percent
241	91	45%	29	14%	83	41%
242	32	45%	14	20%	25	35%
246	122	58%	33	16%	54	26%
248	18	46%	5	13%	16	41%
251	14	82%	0	0%	3	18%
258	29	67%	7	16%	7	16%
259	58	64%	13	14%	20	22%
287	11	85%	0	0%	2	15%
Total	375	55%	101	15%	210	31%

Table 35. Hunter satisfaction with number and quality of bucks, antlerless deer, and total deer numbers, by area.

		Deer Area								Total
		241	242	246	248	251	258	259	287	
I was satisfied with the number of legal bucks	Disagree	44%	41%	51%	34%	59%	53%	54%	75%	48%
	Neither	14%	26%	18%	24%	24%	16%	20%	0%	18%
	Agree	41%	33%	31%	42%	18%	30%	26%	25%	34%
I was satisfied with the quality of bucks	Disagree	46%	51%	52%	42%	59%	47%	51%	54%	49%
	Neither	16%	16%	22%	24%	12%	14%	23%	8%	19%
	Agree	38%	33%	26%	34%	29%	40%	26%	38%	32%
I heard about or saw legal bucks while hunting	Disagree	21%	29%	31%	13%	35%	30%	33%	50%	28%
	Neither	14%	13%	13%	16%	6%	12%	18%	8%	14%
	Agree	65%	58%	56%	71%	59%	58%	49%	42%	59%
I was satisfied with the total number of antlerless deer	Disagree	32%	36%	41%	35%	41%	36%	54%	69%	39%
	Neither	12%	10%	15%	11%	24%	24%	14%	0%	14%
	Agree	57%	54%	44%	54%	35%	40%	32%	31%	47%
I was satisfied with the total number of deer I saw while hunting	Disagree	37%	44%	52%	43%	65%	45%	67%	69%	48%
	Neither	14%	8%	15%	8%	18%	24%	7%	8%	13%
	Agree	49%	48%	33%	49%	18%	31%	26%	23%	39%

Figure 21. Hunter satisfaction with total number of deer seen, based on land type hunted.



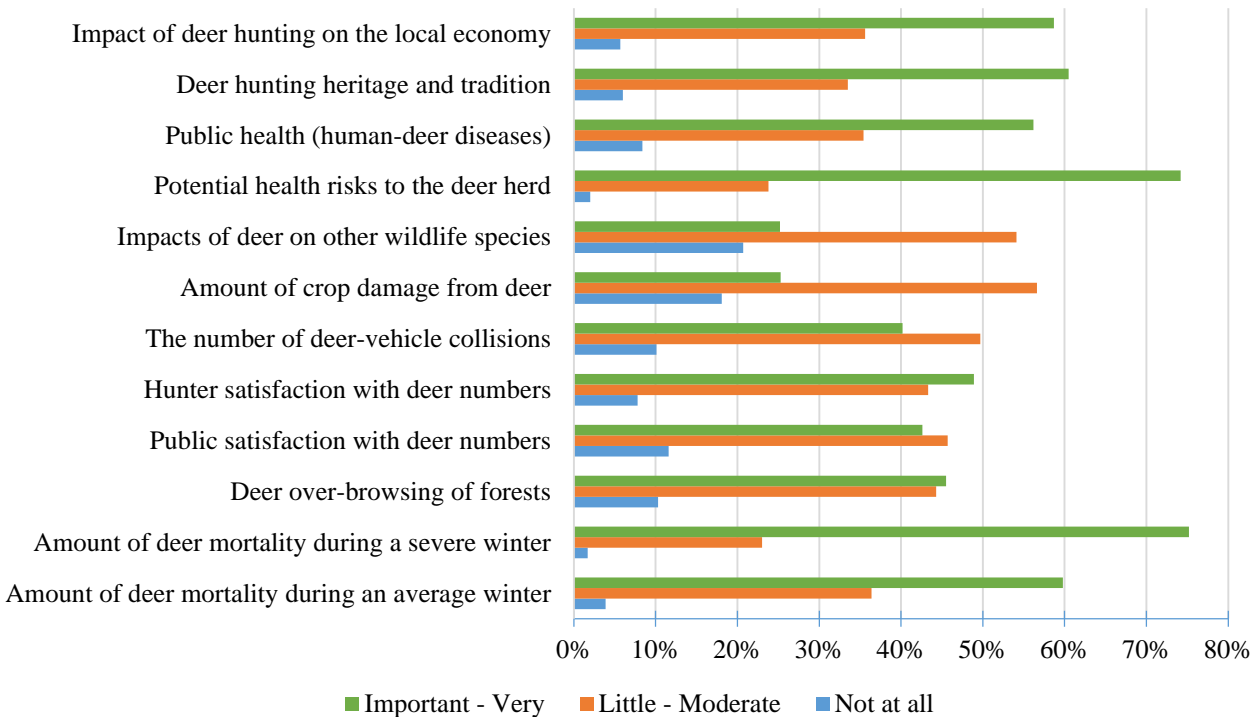
Consideration when setting deer population goals

Respondents were also asked to rate the importance of 12 items when setting deer population goals. They were expressed as items that respondents could consider as relatively important when setting deer population goals. The scale ranges from ‘not at all important’ to ‘very important’ and covered a range of items that would lead to management for either higher or lower deer populations. Overall, respondents were mixed in that they viewed winter mortality and disease risks as important, yet the amount of crop damage from deer and impacts on other species had lower relative importance. Conversely, hunter satisfaction, hunting tradition, and economic considerations had high relative importance (Table 7, Figure 3).

Table 36. Items that hunters believed should be important when considering setting deer population goals.

Item	Relative Importance				
	Not at all	A little	Moderately	Important	Very
Amount of deer mortality during an average winter	4%	11%	26%	44%	16%
Amount of deer mortality during a severe winter	2%	8%	15%	37%	38%
Deer over-browsing of forests	10%	18%	26%	31%	14%
Public satisfaction with deer numbers	12%	20%	26%	27%	16%
Hunter satisfaction with deer numbers	8%	16%	27%	29%	19%
The number of deer-vehicle collisions	10%	19%	31%	27%	13%
Amount of crop damage from deer	18%	28%	29%	18%	7%
Impacts of deer on other wildlife species	21%	27%	27%	20%	6%
Potential health risks to the deer herd	2%	7%	17%	41%	33%
Public health (human-deer diseases)	8%	13%	22%	31%	25%
Deer hunting heritage and tradition	6%	12%	21%	28%	32%
Impact of deer hunting on the local economy	6%	11%	24%	32%	26%

Figure 22. Graphical importance of items that should be considered when setting deer population goals as defined by hunters. Items were consolidated into 3 groups.



Landowner Survey

Demographics

We received 199, 258, 253, and 157 responses from the 4 strata, respectively. Because the number of undeliverable surveys was high ($n = 193$), we could not calculate survey response by stratum. In total, 65% of respondents indicated they hunted deer in Minnesota during the 2013 deer season; similar percentages were reported for 2011 (68%) and 2012 (67%). There were no statistical differences between the online or mail survey responses for the percentage of landowners who hunted deer. Since those percentages did not vary, tables that describe hunter attitudes are based off whether or not they hunted in 2013 only. By stratum, a lower proportion of respondents who owned 2 – 20 acres indicated they hunted (44%), as compared to other landowners (20-79.9: 68%; 80-319.9: 74%; 320+: 73%). Overall, individuals had hunted an average of 38 years. In total, 72% of respondents were male and the average age was 61.5 (range = 18 – 94).

Hunting patterns

A majority of landowners did all of their hunting on their own private land (63%); conversely, a minority hunted public land (43%), land they didn't own (40%), or leased land (8.4%). Regardless of where they hunted, a majority of hunting landowners expressed a desire for an increase in deer numbers (Table 8).

Most landowners (77%) indicated they allowed hunting on their property. As expected, individuals with smaller parcels allowed hunting at lower rates (41%) than landowners with at least 20 acres (82% – 92%). In essence, the majority of parcels at least 20 acres in size are hunted in this goal setting block. Overall, only 2.8% of landowners indicated they leased their property for hunting with the highest percentage (7%; $n = 18$) of leasing occurring on parcels at least 320 acres in size. With respect to who is allowed to hunt, 66% indicated family members, 41% indicated friends or neighbors, and 4.7% allowed strangers who asked permission.

Reported damage from deer

The percentage of landowners who had acreage in crops (e.g., row crops, small grains, orchards, vegetables) varied greatly by stratum, as did the percentage who owned woodlots and residential acreage (Figure 4). With the exception of landscaping damage, we also observed similar patterns for landowners who reported damage from deer (Figure 5). A majority of landowners indicated they had deer-related damage, with individuals owning at least 20 acres indicating higher levels (Table 9). We also observed no statistical differences among deer permit areas for landowners who reported they had crops, woods, or residential acreage (Figure 6).

Table 37. Condensed table of desired deer population trends for landowners that hunted by land type hunted.

Type of land hunted		Desired Population Trend		
		Decrease	No Change	Increase
Private land that I own	None	17%	51%	32%
	Some	12%	23%	66%
	Most	14%	28%	58%
	All	18%	33%	50%
Private land that I lease for hunting	None	15%	36%	49%
	Some	29%	36%	36%
	Most	17%	17%	67%
	All	20%	20%	60%
Private land that I do not own or lease	None	17%	36%	47%
	Some	18%	34%	47%
	Most	17%	25%	58%
	All	5%	64%	32%
Public land	None	18%	38%	43%
	Some	11%	26%	64%
	Most	12%	24%	64%
	All	14%	33%	52%

Figure 23. Percent of landowners who owned crops, woods, and residential acreage.

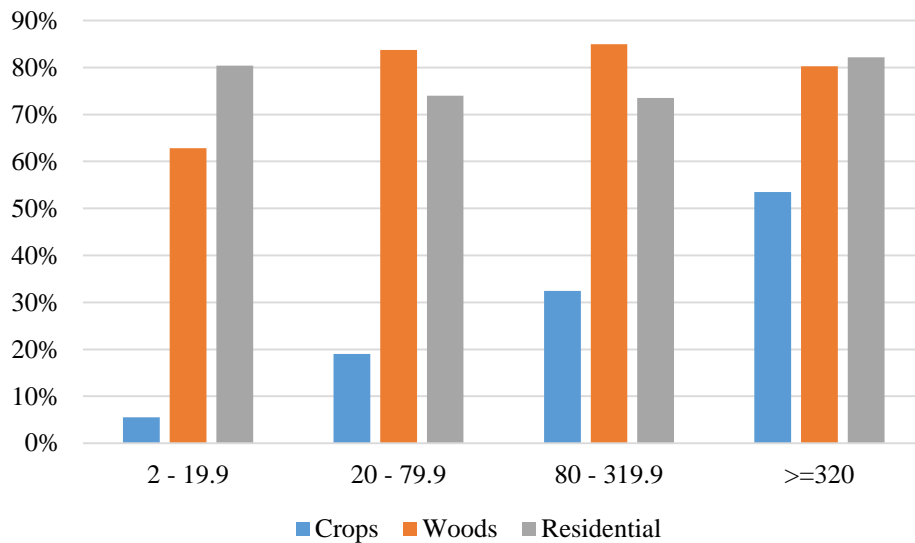


Figure 24. Percent of landowners who indicated they had damage from deer. Damage to crops reported by landowners with less than 20 acres has been omitted due to small sample size (n = 9).

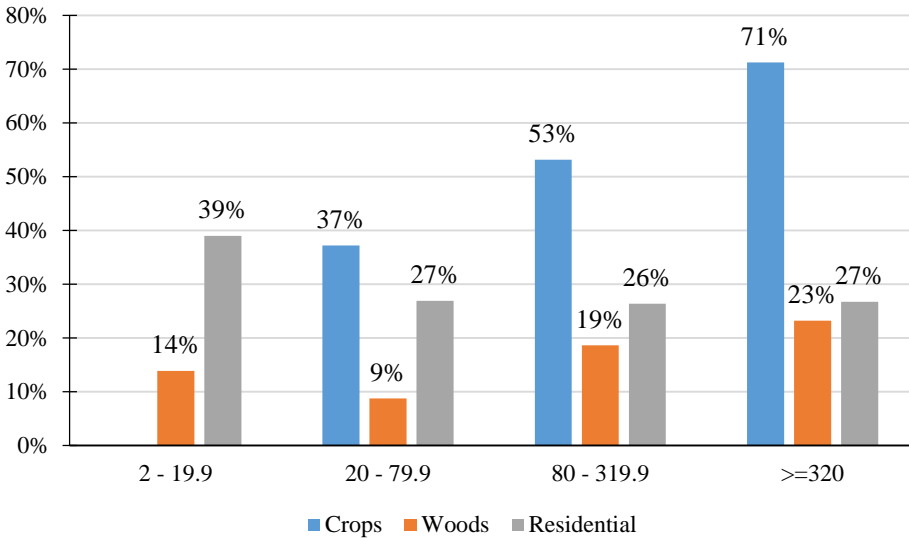


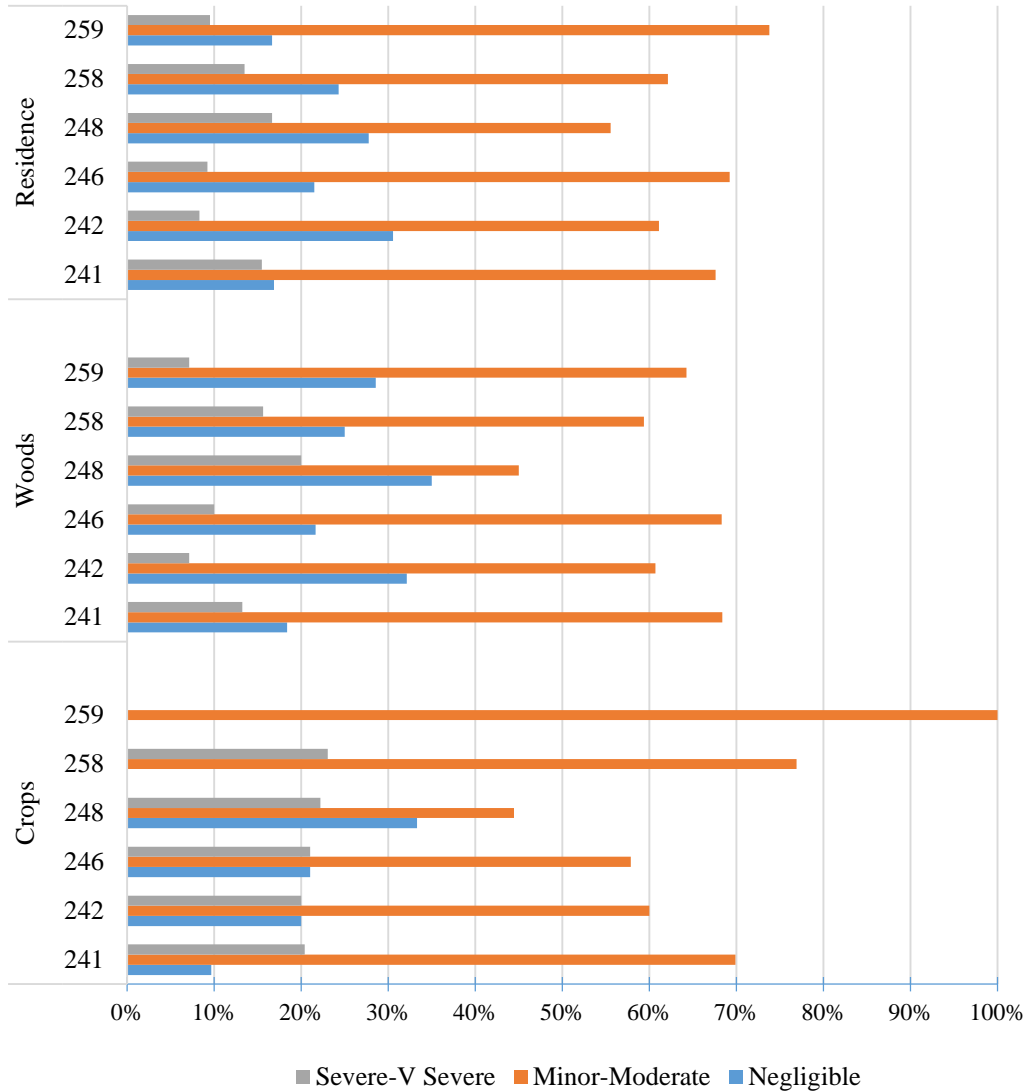
Table 38. Self-described damage caused by deer for crops, woods, and residential land types.

Land Type	Damage	Strata				Total
		2 - 19.9 ³	20 - 79.9	80 - 319.9	>=320	
Crops	Negligible	13%	12%	9%	14%	12%
	Minor	50%	35%	35%	33%	35%
	Moderate	25%	38%	35%	31%	33%
	Severe	13%	15%	20%	13%	15%
	Very Severe	0%	0%	2%	9%	5%
Woods	Negligible	26%	31%	20%	17%	23%
	Minor	42%	26%	40%	33%	35%
	Moderate	24%	32%	29%	33%	30%
	Severe	5%	11%	10%	11%	9%
	Very Severe	3%	0%	1%	6%	3%
Residential	Negligible	27%	24%	15%	17%	21%
	Minor	38%	29%	44%	33%	36%
	Moderate	27%	35%	27%	32%	30%
	Severe	5%	11%	13%	12%	10%

³ Very few landowners reported crop damage on ownerships <20 acres (n=9); caution should be applied when interpreting the reported values for those small acreages.

Very Severe 3% 0% 1% 6% 3%

Figure 25. Reported damage to crops, woods, and residential acreage, by deer permit area.



Population trends and perceptions about deer populations

Respondents were asked to indicate their perceptions of deer population trends over the last 5 years. Overall, 45% (36% non-hunters, 49% hunters) of respondents indicated there were fewer deer than 5 years ago, 23% (26% non-hunters, 21% hunters) indicated more, and 32% (38% non-hunters, 23% hunters) believed populations were the same. Comparable to hunter survey, respondents who lived in deer area 241 had the highest percentage of people who thought the population was higher (Table 10). Respondents were also asked for their perceptions of total deer population size as rated by ‘too low’, ‘about right’, or ‘too high’. Non-hunting landowners were far more likely to indicate the deer population was ‘about right (63% vs. 47%)’, while hunters were far more likely to indicate populations were ‘too low’ (41% vs 20%). Roughly similar

percentages believed the population was too high (11% hunters, 18% non-hunters). Similar patterns were detected by deer area in that hunting landowners were much more likely to express different population desires than non-hunting landowners (Table 11). Respondents were also asked to indicate their desires for future deer population densities and 45% wanted to see an increase in deer densities at some level (Table 12, Figure 7). We also observed clear differences between hunting and non-hunting landowners with hunting landowners indicating stronger preferences for higher deer populations (Table 13; Figure 8).

Table 39. Perceptions of landowner deer population trends over the last 5 years, by deer area.

Deer Area	Lower		The Same		Higher	
	N	Percent	N	Percent	N	Percent
241	81	36%	70	31%	72	32%
242	24	45%	15	28%	14	26%
246	64	57%	33	29%	16	14%
248	17	46%	12	32%	8	22%
258	36	57%	19	30%	8	13%
259	31	41%	33	44%	11	15%
Total	253	45%	182	32%	129	23%

Table 40. Landowner beliefs about current deer population densities, by deer area and whether or not they hunted.

Hunt	Deer Area	N	Too low	N	About right	N	Too high
No (35%)	241	13	16%	43	52%	26	32%
	242	9	21%	28	65%	6	14%
	246	11	24%	32	70%	3	7%
	248	3	15%	12	60%	5	25%
	258	7	26%	19	70%	1	4%
	259	7	18%	28	72%	4	10%
	Sum	50	20%	162	63%	45	18%
Yes (65%)	241	66	29%	122	53%	43	19%
	242	12	44%	11	41%	4	15%
	246	64	57%	40	36%	8	7%
	248	22	56%	14	36%	3	8%
	258	43	52%	35	43%	4	5%
	259	25	35%	44	62%	2	3%
	Sum	232	41%	266	47%	64	11%
Total	241	79	25%	165	53%	69	22%
	242	21	30%	39	56%	10	14%
	246	75	48%	72	46%	11	7%
	248	25	42%	26	44%	8	14%
	258	50	46%	54	50%	5	5%
	259	32	29%	72	66%	6	6%
	Total	282	34%	428	52%	109	13%

Table 41. Preferred landowner population trends, by deer area.

(a) By individual response

Deer Area	Dec 50%	Dec 25%	Dec 10%	No Change	Inc 10%	Inc 25%	Inc 50%
241	7%	11%	7%	39%	19%	12%	4%
242	7%	4%	6%	49%	16%	14%	4%
246	1%	4%	8%	26%	23%	24%	13%
248	8%	5%	3%	34%	15%	20%	14%
258	2%	3%	7%	34%	22%	18%	14%
259	2%	5%	6%	46%	21%	16%	5%
Total	5%	7%	7%	37%	20%	16%	8%

(b) Summarized by decrease, stay the same, increase

Deer Area	Decrease	Same	Increase
241	25%	39%	35%
242	17%	49%	34%
246	13%	26%	60%
248	16%	34%	49%
258	12%	34%	54%
259	13%	46%	42%
Total	19%	37%	44%

Figure 26. Graphical representation of desired deer population trends for landowners.

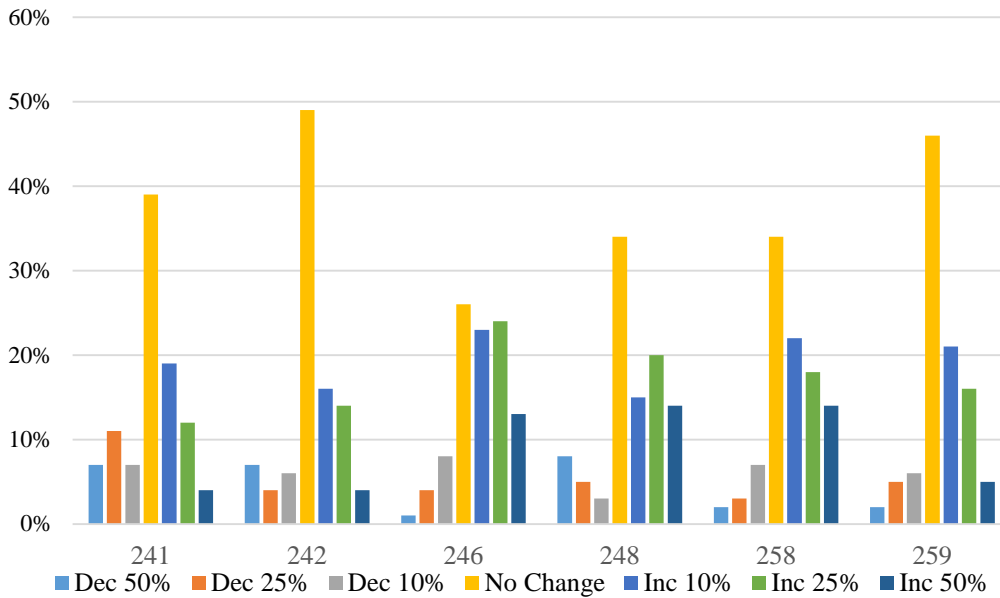
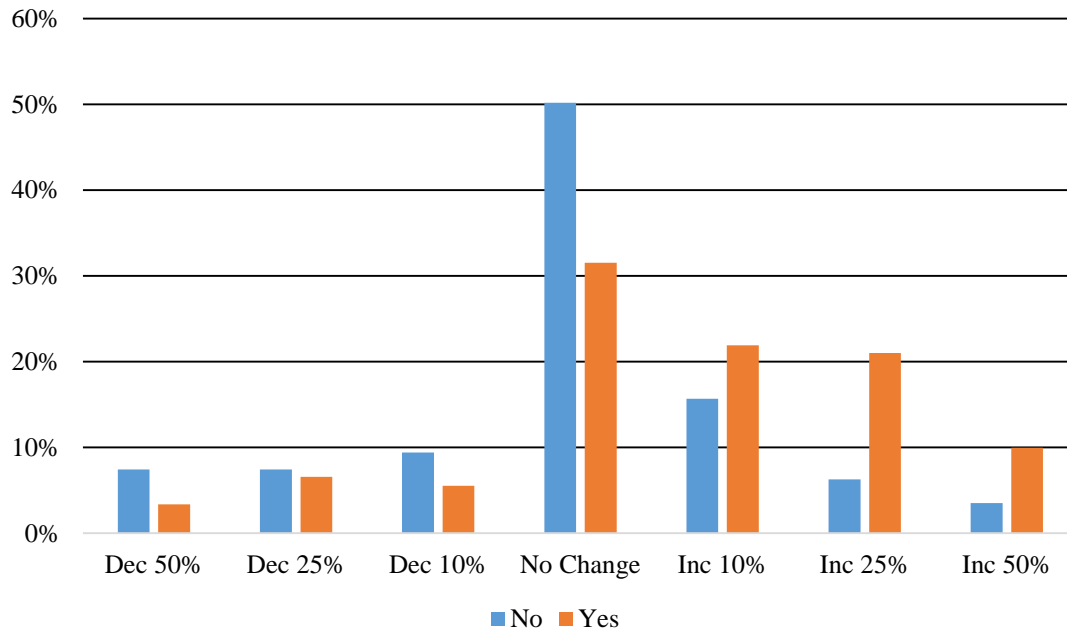


Table 42. Desired deer population trends for landowners, by deer area and whether or not they hunted.

Hunt	Deer Area	Dec 50%	Dec 25%	Dec 10%	No Change	Inc 10%	Inc 25%	Inc 50%
No	241	10%	16%	10%	46%	12%	6%	0%
	242	12%	2%	5%	58%	16%	5%	2%
	246	2%	2%	13%	43%	24%	11%	4%
	248	15%	5%	10%	55%	5%	5%	5%
	258	4%	0%	8%	58%	19%	0%	12%
	259	3%	8%	10%	51%	15%	8%	5%
	Total	7%	7%	9%	50%	16%	6%	4%
Yes	241	6%	10%	6%	37%	22%	14%	6%
	242	0%	7%	7%	33%	15%	30%	7%
	246	1%	5%	5%	19%	23%	30%	16%
	248	5%	5%	0%	23%	21%	28%	18%
	258	1%	4%	7%	27%	23%	23%	15%
	259	1%	3%	4%	43%	24%	21%	4%
	Total	3%	7%	6%	32%	22%	21%	10%

Figure 27. Graphical representation of landowner desires for future deer populations, by whether or not they hunted.



Consideration when setting deer population goals

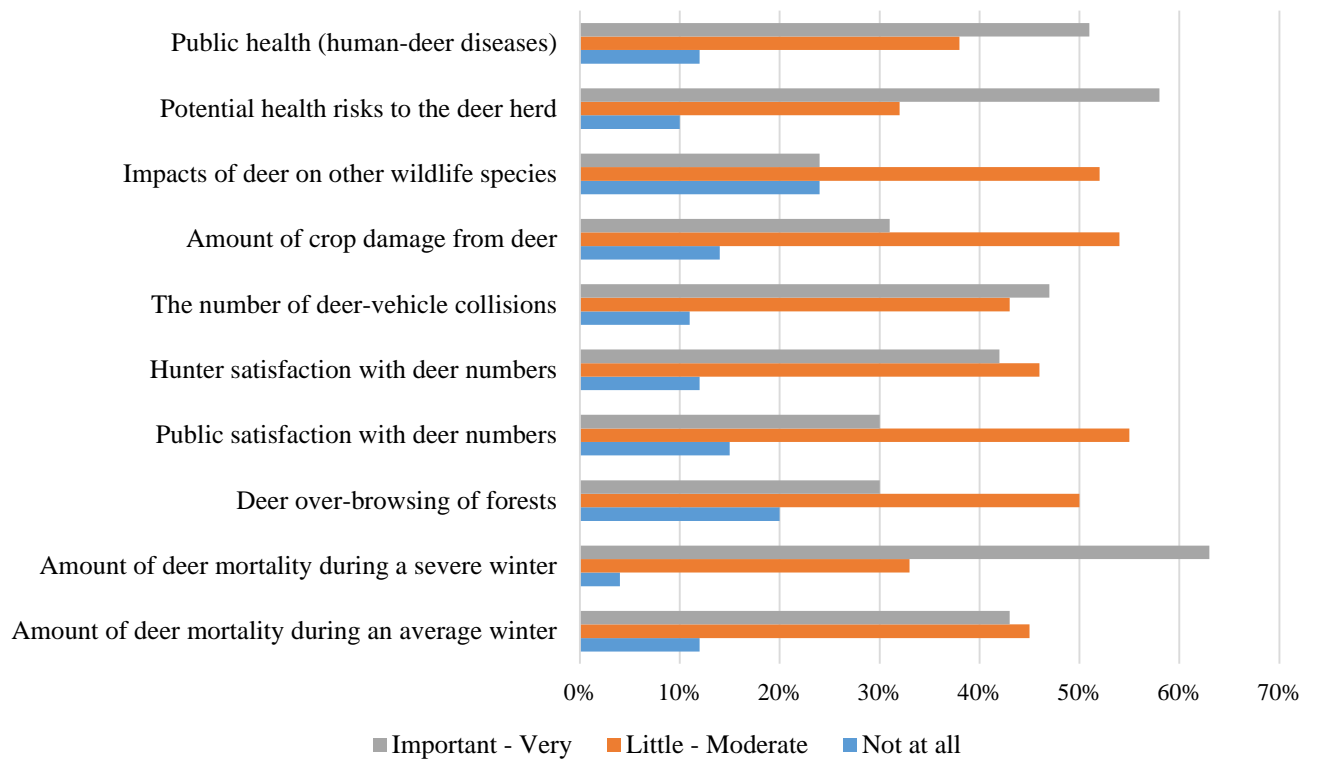
Respondents were also asked to rate the importance of 10 items when setting deer population goals⁴. The scale ranges from ‘not at all important’ to ‘very important’ and covered a range of items that would lead to both higher and lower deer populations. Similar to the hunter survey, respondents were mixed in that they viewed winter mortality and disease risks as important, yet the amount of crop damage from deer and impacts on other species had lower relative importance. Conversely, hunter satisfaction, hunting tradition, and economic considerations had high relative importance (Table 14; Figure 9).

Table 43. Importance of items landowners indicated should be considered when setting deer population goals.

Item	Relative Importance				
	Not at all	A little	Moderately	Important	Very
Amount of deer mortality during an average winter	12%	14%	30%	32%	11%
Amount of deer mortality during a severe winter	4%	10%	23%	35%	28%
Deer over-browsing of forests	20%	23%	27%	23%	7%
Public satisfaction with deer numbers	15%	23%	31%	25%	6%
Hunter satisfaction with deer numbers	12%	16%	30%	29%	13%
The number of deer-vehicle collisions	11%	15%	27%	30%	16%
Amount of crop damage from deer	14%	25%	30%	21%	10%
Impacts of deer on other wildlife species	24%	24%	28%	19%	5%
Potential health risks to the deer herd	10%	11%	21%	31%	27%
Public health (human-deer diseases)	12%	19%	19%	26%	24%

⁴ The questions about hunting heritage and impacts of deer hunting to the local economy were inadvertently omitted.

Figure 28. Graphical importance of items that landowners indicate should be considered when setting deer population goals. Items were consolidated into 3 groups.



Appendix A. Pine Moraines (Block G3) hunter survey

2014 Survey of Minnesota Deer Hunters: Population Management

The Minnesota DNR will be evaluating deer population goals in central Minnesota this year. An important component of this project is to collect information from deer hunters regarding their opinions towards deer populations. You have been selected at random to participate in this survey. Please take a few moments to answer the questions below. Your responses will help guide deer population goals in the area you hunt.

1. Please check the boxes below to report if you hunted deer in Minnesota during the 2011, 2012 or 2013 Minnesota deer season. *(Please check all that apply).*

2011 | 2012 | 2013

I did not hunt deer any of these years → Please skip to Question 13

2. Minnesota allows people to hunt deer during all 3 seasons. For the most recent year you hunted, which seasons did you participate? Please mark 'Yes' if you hunted a season and also estimate the number of days you hunted.

Season	Yes	No	If Yes, Number of Days
Archery	<input type="checkbox"/>	<input type="checkbox"/>	_____
Firearm	<input type="checkbox"/>	<input type="checkbox"/>	_____
Muzzleloader	<input type="checkbox"/>	<input type="checkbox"/>	_____

3. Which **ONE** deer permit area did you hunt most often during the most recent deer season you hunted?
 241 | 242 | 246 | 248 | 251 | 258 | 259 | 287 | None of these
4. If you did not hunt one of the permit areas listed above, please tell us which one you hunted most often:
 _____ Area Number
5. Including 2013, how many years have you hunted deer in the permit area you hunt most often?
 _____ Years
6. Including 2013, how many total years have you been hunting deer in Minnesota? _____ Years
7. How much of your deer hunting did you do on each of the following types of land during your most recent deer hunting season? *(Please circle one item from each row.)*

	None	Some	Most	All
Private land that I own	1	2	3	4
Private land that I lease for hunting	1	2	3	4
Private land that I do not own or lease	1	2	3	4
Public land	1	2	3	4

8. Please indicate if there are any deer harvest restrictions on the property you hunt most often.
- 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
 - Other (please explain): _____

9. Please indicate whether you agree or disagree with the following statements regarding your most recent deer hunt. (Please circle one number for each statement below).

	Strongly Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Strongly Agree
I was satisfied with the number of legal bucks	1	2	3	4	5
I was satisfied with the quality of bucks	1	2	3	4	5
I heard about or saw legal bucks while hunting	1	2	3	4	5
I was satisfied with the total number of antlerless deer	1	2	3	4	5
I was satisfied with the total number of deer	1	2	3	4	5

10. Will you shoot an antlerless deer if given the opportunity?

- Yes
- No

11. Over the past 5 years, what trend have you seen in the deer population in the deer area you hunt most often?

- Much fewer deer now than 5 years ago
- Slightly fewer deer now than 5 years ago
- About the same number of deer as 5 years ago
- Slightly more deer now than 5 years ago
- Many more deer now than 5 years ago

12. In thinking about the deer permit area you hunt, please indicate your overall satisfaction with current deer numbers.

- Very Dissatisfied
- Slightly Dissatisfied
- Neither Dissatisfied or Satisfied
- Slightly Satisfied
- Very Satisfied

13. How much importance should we assign to each of the following considerations when setting deer population goals? (*Please circle one number for each statement below*).

	Not at all Important	A little Important	Moderately Important	Important	Very Important
Amount of deer mortality during an average winter	1	2	3	4	5
Amount of deer mortality during a severe winter	1	2	3	4	5
Potential health risks to the deer herd	1	2	3	4	5
Public health (human-deer diseases)	1	2	3	4	5
Amount of crop damage from deer	1	2	3	4	5
The number of deer-vehicle collisions	1	2	3	4	5
Deer over-browsing of forests	1	2	3	4	5
Impacts of deer on other wildlife species	1	2	3	4	5
Deer hunting heritage and tradition	1	2	3	4	5
Hunter satisfaction with deer numbers	1	2	3	4	5
Public satisfaction with deer numbers	1	2	3	4	5
Impact of deer hunting on the local economy	1	2	3	4	5

14. Please identify up to 3 other factors that you believe are important and should be considered when setting deer population goals.

- A. _____
- B. _____
- C. _____

24. In thinking about your property and the surrounding area, would you say the deer population is,

- Much too Low Too Low About Right Too High Much too High

25. 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
Population
50%
(Significant) | Decrease
Population
25%
(Moderate) | Decrease
Population
10%
(Slight) | No Change | Increase
Population
10%
(Slight) | Increase
Population
25%
(Moderate) | Increase
Population
50%
(Significant) |

18. 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?

- Strongly Oppose
- Slightly Oppose
- Neither Oppose nor Support
- Slightly Support
- Strongly Support

19. Please let us know how you feel about the Minnesota Department of Natural Resources. *(Please circle one response for each of the following statements.)*

	Strongly Disagree	Slightly Disagree	Neither Agree or Disagree	Slightly Agree	Strongly Agree
The MnDNR does a good job of managing deer in Minnesota.	1	2	3	4	5
When deciding about deer management in Minnesota, the MnDNR will be open and honest in the things they do and say.	1	2	3	4	5
The MnDNR can be trusted to make decisions about deer management that are good for the resource.	1	2	3	4	5
The MnDNR will make decisions about deer management in a way that is fair.	1	2	3	4	5
The MnDNR has deer managers and biologists who are well-trained for their jobs.	1	2	3	4	5
The MnDNR listens to deer hunters' concerns.	1	2	3	4	5

20. What is your gender?

- Male | Female

21. What year were you born? _____ *(Please use the 4 digit year)*

If you would be willing to respond to additional questions about deer management and hunting in Minnesota and are willing to provide your email address, please write it below. We will only use your email address for research related to deer management and will not share it with anyone.

e-mail address: _____

Appendix B. Pine Moraines (Block G3) landowner survey

2014 Survey of Minnesota Landowners: Deer Management

The Minnesota DNR will be evaluating deer population goals in central Minnesota this year. An important component of this project is to collect information from landowners regarding their opinions towards deer populations and land management. You have been selected at random to participate in this survey. Please take a few moments to answer the questions below. Your responses will help guide deer population goals in the area you own land.

9. How many total acres did you own and/or lease at the end of 2013?

_____ Acres Owned _____ Acres Leased

10. Please make a “rough” estimate as to how many acres of your property (owned and leased) are in each of the following categories. Please also estimate the percentage of that land type you have enrolled in a State or Federal Conservation Program.

Land Type	Acres Owned	Acres Leased	% Enrolled in Conservation Program
Private Residence (house, lawns, associated buildings)			%
Woodlands (natural forest or tree plantings)			%
Brushland (including abandoned, overgrown fields)			%
Hayfields, Pasture, or Grassland			%
Wetlands			%
Row Crops			%
Small Grains			%
Orchards or Vineyards			%
Vegetables or other Truck Crops			%
Prairie (Native or Restored)			%
Wildlife Food Plots			%
Other (Please list: _____)			%

11. Did you experience deer damage to land that you own or leased in 2013?

Crops	<input type="checkbox"/> Yes	<input type="checkbox"/> No	→ IF ALL ARE <u>NO</u> PLEASE SKIP TO QUESTION 6
Woodlands	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Landscaping	<input type="checkbox"/> Yes	<input type="checkbox"/> No	

12. How would you describe the total amount of deer damage you experienced in 2013? (*Check one*).

Negligible Minor Moderate Severe Very Severe

13. How would you compare the amount of deer damage you experienced in 2013 to what you experienced 5 years ago? (*Check one*).

- Much less damage than 5 years ago
- Slightly less damage than 5 years ago
- About the same damage as 5 years ago
- Slightly more damage than 5 years ago
- Much more damage than 5 years ago
- I was not farming/managing lands 5 years ago

14. Over the past 5 years, what trend have you seen in the deer population in the area of your property? (*Check one*).

- Much fewer deer now than 5 years ago
- Slightly fewer deer now than 5 years ago
- About the same number of deer now as 5 years ago
- Slightly more deer now than 5 years ago
- Many more deer now than 5 years ago

15. In thinking about your property and the surrounding area, please indicate your overall satisfaction with current deer numbers. (*Please check one below*).

- Very Dissatisfied Slightly Dissatisfied Neutral Slightly Satisfied Very Satisfied

16. How much importance should we assign to each of the following considerations when setting deer population goals? (*Please circle one number for each statement below*).

	Not at all Important	A little Important	Moderately Important	Important	Very Important
Amount of deer mortality during an average winter	1	2	3	4	5
Amount of deer mortality during a severe winter	1	2	3	4	5
Potential health risks to the deer herd such as chronic wasting disease	1	2	3	4	5
Public health (such human-deer disease from ticks)	1	2	3	4	5
Amount of crop damage from deer	1	2	3	4	5
The number of deer-vehicle collisions	1	2	3	4	5
Deer over-browsing of forests	1	2	3	4	5
Impacts of deer on other wildlife species	1	2	3	4	5
Hunter satisfaction with deer numbers	1	2	3	4	5
Public satisfaction with deer numbers	1	2	3	4	5

9. Please identify up to 3 other factors that you believe are important and should be considered when setting deer population goals.

- A. _____
- B. _____
- C. _____

10. In thinking about your property and the surrounding area, would you say the deer population is, (*Check one*)

- Much too Low Too Low About Right Too High Much too High

11. 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 Population 50% (Significant)	Decrease Population 25% (Moderate)	Decrease Population 10% (Slight)	No Change	Increase Population 10% (Slight)	Increase Population 25% (Moderate)	Increase Population 50% (Significant)

12. Did you allow hunting on your property during the 2013 deer season? (*Check only one*)

- Yes
 No → PLEASE SKIP TO QUESTION 17

13. Do you lease any of your property for deer hunting?

- Yes
 No

14. Who did you allow to hunt deer on your property? (*Check mark all that apply*). Please also estimate the number of people who hunted your property in 2013.

- Myself or family members _____ people Strangers who ask permission _____ people
 Friends or neighbors _____ people People who lease my property _____ people
 Other (please list: _____) _____ people

15. Please indicate if you impose any deer harvest restrictions on your property. (*Please check one only*).

- 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
 Other (please list: _____)

16. Please check the boxes below to report if you hunted deer in Minnesota during the 2011, 2012 or 2013 Minnesota deer season? (*Please check all that apply*).

- 2011 | 2012 | 2013
 I hunt deer but did not hunt any of these years → Please skip to Question 21
 I do not hunt deer at all → Please skip to Question 22

17. Which **ONE** deer permit area did you hunt most often during the most recent deer season you hunted.

- 241 | 242 | 246 | 248 | 251 | 258 | 259 | 287 | N/A

18. If you did not hunt one of the permit areas listed above, please tell us which one you hunted most often:

_____ Area Number

19. 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
Private land that I own	1	2	3	4
Private land that I lease for hunting	1	2	3	4
Private land that I do not own or lease	1	2	3	4
Public land	1	2	3	4

20. Including 2013, how many years have you been hunting deer in Minnesota? _____ Years.

21. To what extent would you support or oppose a regulation that would increase the proportion of antlered bucks in the area you own property? (*Check one.*)

- Strongly Oppose Slightly Oppose Neither Slightly Support Strongly Support

23. Please let us know how you feel about the Minnesota Department of Natural Resources. (*Please circle one response for each of the following statements.*)

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
The MnDNR does a good job of managing deer in Minnesota.	1	2	3	4	5
When deciding about deer management in Minnesota, the MnDNR will be open and honest in the things they do and say.	1	2	3	4	5
The MnDNR can be trusted to make decisions about deer management that are good for the resource.	1	2	3	4	5
The MnDNR will make decisions about deer management in a way that is fair.	1	2	3	4	5
The MnDNR has deer managers and biologists who are well-trained for their jobs.	1	2	3	4	5
The MnDNR listens to the concerns of landowners.	1	2	3	4	5

28. What is your gender?

- Male Female

29. What year were you born? _____ (please use 4 digits)

If you would be willing to respond to additional questions about deer management and hunting in Minnesota and are willing to provide your email address, please write it below. We will only use your email address for research related to deer management and will not share it with anyone.

e-mail address: _____

East Central Uplands (Block G4)
Deer Goal Setting
Landowner and Hunter Survey Results



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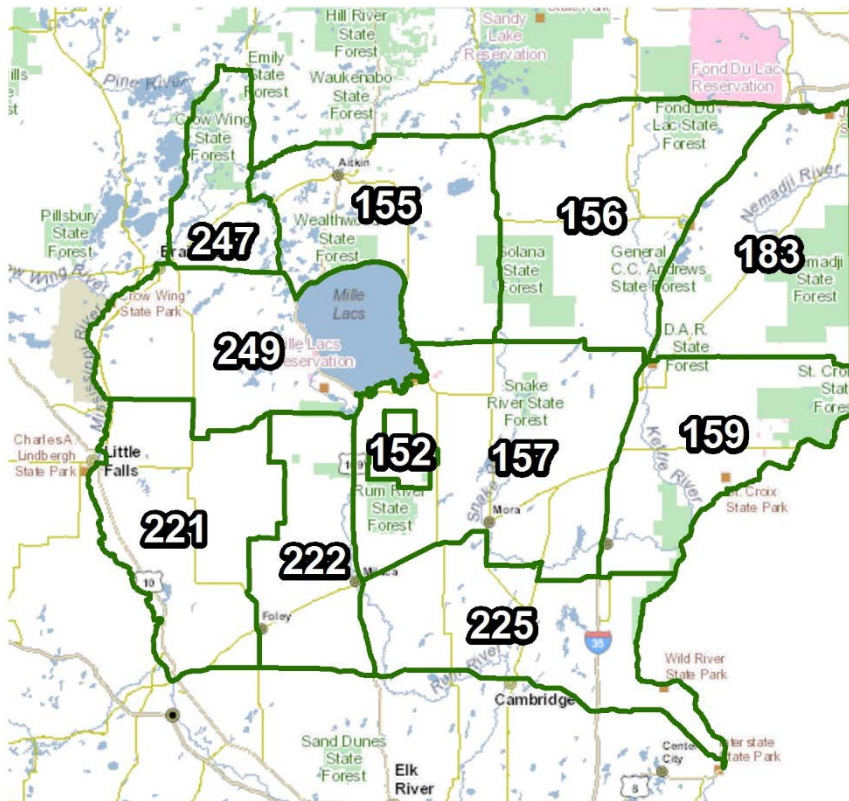
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Public Surveys for Deer Goal Setting

MN DNR periodically conducts stakeholder surveys to collect information about public desires and opinions regarding specific natural resource management issues. Survey recipients are selected randomly and provide a statistically representative sample of stakeholder opinions. Thus, these surveys differ from annual public input opportunities which may include some bias according to self-selection of interested parties. In 2014, both hunters (Appendix A) and landowners (Appendix B) in this goal setting block were surveyed; the resulting information provides a basis for the 2015 deer population goal setting process. This report covers goal block 4, East Central Uplands.



Methods

Hunters and private landowners were surveyed using a mixed mode design that included two waves of letters requesting survey completion online; the third wave was mailed using a self-administered mail back questionnaire (Appendices A and B).

For the hunter survey, we randomly selected 2,600 adult 2013 deer license holders who indicated they intended to hunt in deer areas 152, 155, 156, 157, 159, 183, 221, 222, 225, 247, or 249. A total of 123 were undeliverable and we received 773 completed responses, which yielded an adjusted response rate of 31%. Deer area 152 (Mille Lacs WMA) is comprised entirely of public land so there was no landowner survey. Landowner parcels were stratified into 4 acreages, 1) 2 – 19.9, 2) 20 – 79.9, 3) 80 – 319.9, and 4) 320+. We selected a simple random

sample from all 4 stratum (n = 650). Overall, there were 288 undeliverable surveys; 914 completed landowner surveys were returned, yielding a 37% adjusted response rate. For both surveys, our error rate at the goal block level was approximately 3%.

Hunter Survey

Demographics

Nearly all respondents (98%) indicated they hunted during the 2013 firearm deer season. Overall 25% indicated they hunted deer during the archery season and 11% hunted muzzleloader. Firearm hunters spent an average of 5.4 days afield, compared to 6.2 for muzzleloader and 17.7 for archery hunters. Overall, individuals had hunted an average of 27 years in Minnesota and 19 years in the deer area they indicated they hunted most often. Overall, 89% of respondents were male and the average age was 48.7 (range = 16 – 87).

More than half of hunters did at least some of their hunting on their own private land (68%) or other private land (68%). Slightly more than half (55%) did at least some of their hunting on public land. Another 9.4% indicated they did at least some hunting on lands that they leased for deer hunting. Only 2.9% of respondents hunted exclusively on land they leased. With respect to future populations; a majority expressed a desire for an increase in deer numbers, regardless of where they hunted (Table 1).

Population trends and perceptions about deer populations

Respondents were asked to indicate their perceptions of deer population trends over the last 5 years. Overall, 76% of respondents indicated there were fewer deer than 5 years ago, 6% indicated more, and 18% believed populations were the same. We observed some differences; hunters in deer area 156 were most likely to indicate populations had declined (89%); conversely, hunters in deer area 225 were least likely to indicate a population decline (59%) (Table 2). Respondents were also asked for their perceptions of total deer population size as rated by 'too low', 'about right', or 'too high'. Nearly two-thirds (69%) believed the population was 'too low', 28% thought it was 'about right', and 2% indicated the population was 'too high'. We observed statistical differences among deer permit areas with similar patterns as described above (Table 3). Respondents were also asked to indicate their desires for future deer population densities and 77% wanted to see an increase in deer densities at some level (Table 4, Figure 1). A majority of respondents (82%) would shoot an antlerless deer if given the opportunity.

Table 44. Condensed table of desired deer population trends of hunters, by land type hunted.

Type of land hunted		Desired Population Trend		
		Decrease	No Change	Increase
Private land that I own	None	9%	14%	77%
	Some	8%	12%	80%
	Most	5%	20%	76%
	All	6%	18%	76%
Private land that I lease for hunting	None	7%	15%	78%
	Some	7%	40%	53%
	Most	0%	25%	75%
Private land that I do not own or lease	All	0%	17%	83%
	None	4%	15%	82%
	Some	5%	14%	81%
	Most	7%	14%	79%
Public land	All	10%	19%	71%
	None	7%	18%	75%
	Some	5%	15%	80%
	Most	6%	6%	88%
	All	6%	16%	79%

Table 45. Hunter perceptions of deer population trends over the last 5 years, by deer permit area.

Deer Area	Lower		The Same		Higher	
	N	Percent	N	Percent	N	Percent
152	5	83%	1	17%	0	0%
155	58	66%	24	27%	6	7%
156	80	89%	8	9%	2	2%
157	108	80%	18	13%	9	7%
159	70	82%	13	15%	2	2%
183	70	79%	10	11%	9	10%
221	39	77%	7	14%	5	10%
222	30	71%	11	26%	1	2%
225	38	59%	22	34%	4	6%
247	28	82%	5	15%	1	3%
249	26	61%	13	30%	4	9%
Total	552	76%	132	18%	43	6%

Table 46. Hunter beliefs about current deer population densities, by deer area.

Deer Area	Too Low		About Right		Too High	
	N	Percent	N	Percent	N	Percent
152	5	83%	1	17%	0	0%
155	59	68%	25	29%	3	3%
156	77	86%	13	14%	0	0%
157	88	65%	46	34%	1	1%
159	68	81%	14	17%	2	2%
183	75	85%	12	14%	1	1%
221	26	51%	22	43%	3	6%
222	25	60%	16	38%	1	2%
225	32	51%	28	44%	3	5%
247	24	73%	8	24%	1	3%
249	22	51%	19	44%	2	5%
Total	501	69%	204	28%	17	2%

Table 47. Deer population trend preferences for hunters, by deer permit area.

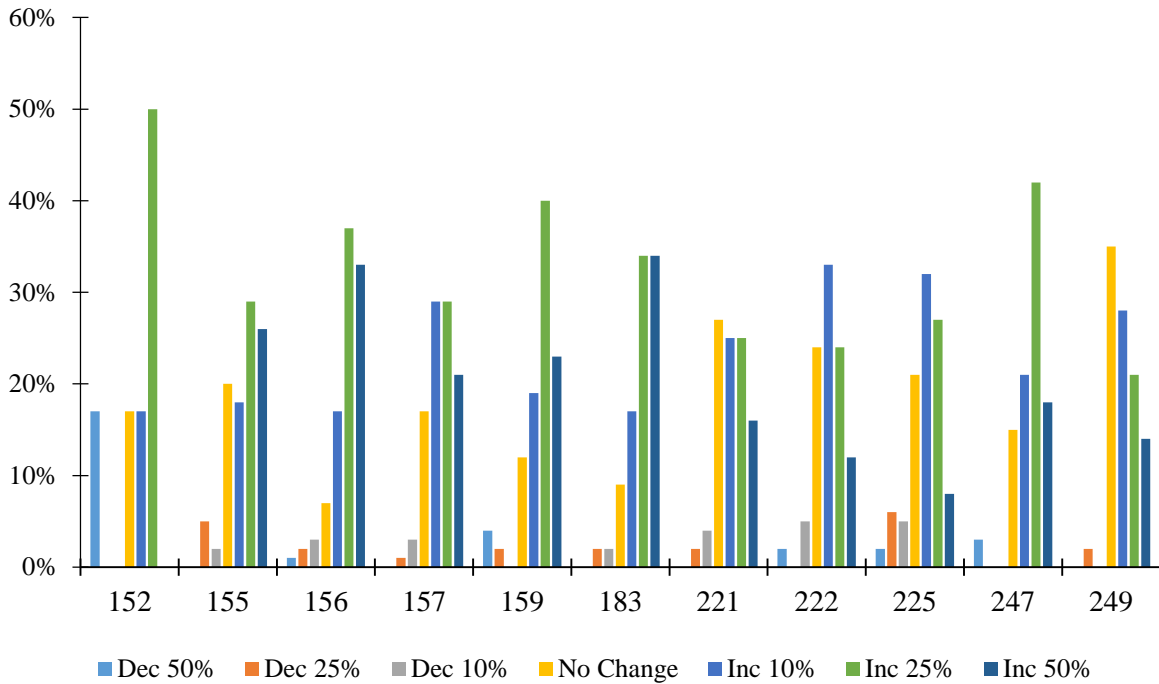
(a) By individual response

Deer Area	Dec 50%	Dec 25%	Dec 10%	No Change	Inc 10%	Inc 25%	Inc 50%
152	17%	0%	0%	17%	17%	50%	0%
155	0%	5%	2%	20%	18%	29%	26%
156	1%	2%	3%	7%	17%	37%	33%
157	0%	1%	3%	17%	29%	29%	21%
159	4%	2%	0%	12%	19%	40%	23%
183	0%	2%	2%	9%	17%	34%	34%
221	0%	2%	4%	27%	25%	25%	16%
222	2%	0%	5%	24%	33%	24%	12%
225	2%	6%	5%	21%	32%	27%	8%
247	3%	0%	0%	15%	21%	42%	18%
249	0%	2%	0%	35%	28%	21%	14%
Total	1%	2%	3%	17%	23%	32%	22%

(b) Summarized by decrease, same, increase

Deer Area	Decrease	Same	Increase
152	17%	17%	67%
155	7%	20%	73%
156	6%	7%	87%
157	4%	17%	79%
159	6%	12%	82%
183	4%	9%	85%
221	6%	27%	66%
222	7%	24%	69%
225	13%	21%	67%
247	3%	15%	81%
249	2%	35%	63%
Total	6%	17%	77%

Figure 29. Graphical representation of hunters' desired deer population trends.



Satisfaction

Hunters were asked to indicate their overall satisfaction with deer numbers, whether they heard about or saw legal bucks, their satisfaction with the number of legal bucks, quality of bucks, total number of deer and total number of antlerless deer. Only 19% were satisfied with current deer numbers; 66% indicated dissatisfaction (Table 5). In total, only 29% indicated they were satisfied with the total number of deer they saw while hunting (60% were not satisfied and 11% were neutral). Thirty nine percent were satisfied with the total number of antlerless deer they observed. Only one-quarter (26%) were satisfied with the number of legal bucks observed; more than half were dissatisfied (59%). Half (50%) indicated they saw heard about or saw legal bucks while hunting. More hunters (57%) were dissatisfied than satisfied (27%) with the quality of bucks observed (Table 6). Finally, we observed no real differences among land type hunted and satisfaction with total deer numbers; most were not satisfied with the number of deer they saw while hunting (range = 53% - 74%) (Figure 2).

Table 48. Overall hunter satisfaction with total deer numbers, by deer area.

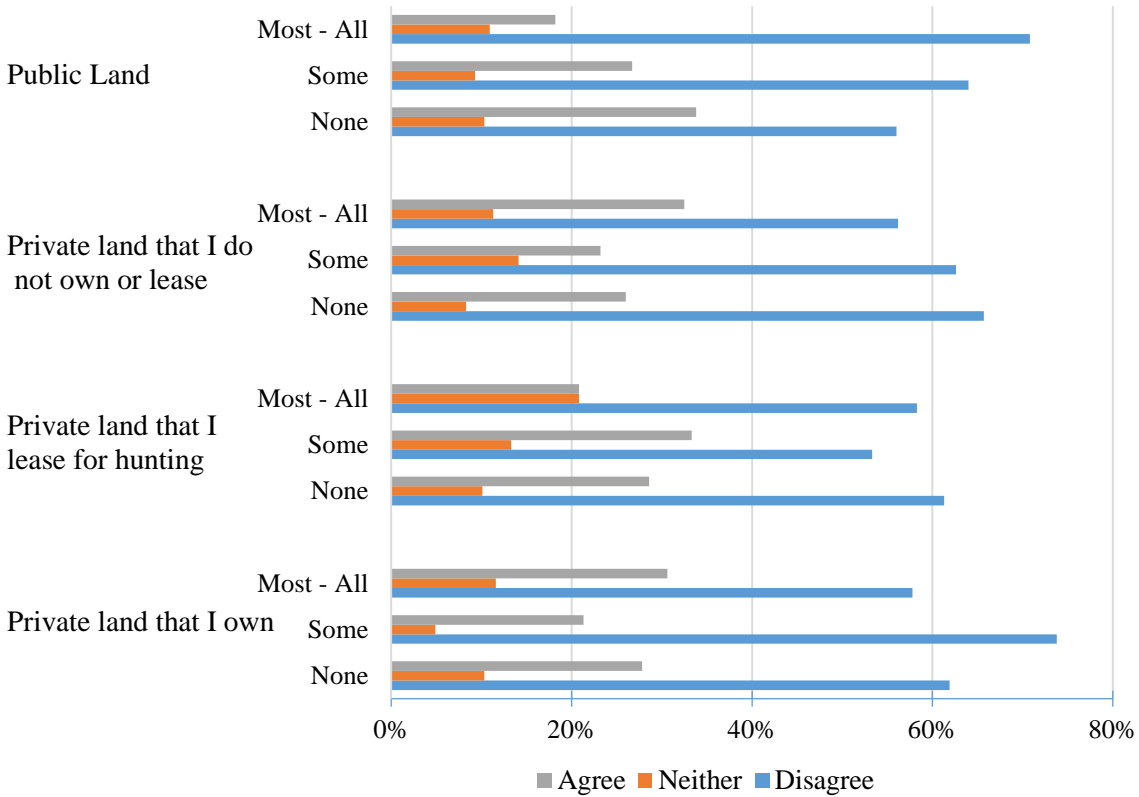
DPA	Dissatisfied		Neither		Satisfied	
	N	Percent	N	Percent	N	Percent
152	5	83%	1	17%	0	0%
155	52	59%	14	16%	22	25%
156	67	74%	15	17%	8	9%
157	84	62%	26	19%	25	19%
159	62	73%	14	17%	9	11%
183	71	80%	9	10%	9	10%
221	33	65%	7	14%	11	22%
222	23	55%	7	17%	12	29%
225	35	55%	6	9%	23	36%
247	24	71%	4	12%	6	18%
249	24	56%	9	21%	10	23%
Total	480	66%	112	15%	135	19%

Table 49. Hunter satisfaction with number and quality of bucks, antlerless deer, and total deer numbers, by area.

		Deer Area					
		152	155	156	157	159	183
I was satisfied with the number of legal bucks	Disagree	50%	56%	72%	55%	72%	70%
	Neither	0%	14%	18%	17%	14%	9%
	Agree	50%	31%	10%	28%	14%	21%
I was satisfied with the quality of bucks	Disagree	50%	42%	69%	56%	62%	64%
	Neither	0%	21%	18%	18%	15%	8%
	Agree	50%	38%	14%	26%	22%	28%
I heard about or saw legal bucks while hunting	Disagree	67%	43%	48%	36%	39%	53%
	Neither	33%	9%	13%	13%	12%	6%
	Agree	0%	48%	40%	52%	49%	41%
I was satisfied with the total number of antlerless deer	Disagree	50%	46%	64%	46%	51%	62%
	Neither	0%	17%	9%	12%	13%	12%
	Agree	50%	38%	27%	43%	37%	26%
I was satisfied with the total number of deer I saw while hunting	Disagree	67%	57%	75%	56%	65%	76%
	Neither	17%	13%	10%	15%	8%	7%
	Agree	17%	31%	15%	30%	27%	17%

		Deer Area					
		221	222	225	247	249	Total
I was satisfied with the number of legal bucks	Disagree	51%	43%	42%	68%	54%	59%
	Neither	20%	29%	14%	9%	14%	15%
	Agree	29%	29%	44%	24%	33%	26%
I was satisfied with the quality of bucks	Disagree	61%	52%	44%	74%	56%	57%
	Neither	16%	17%	17%	12%	7%	15%
	Agree	24%	31%	39%	15%	37%	27%
I heard about or saw legal bucks while hunting	Disagree	28%	21%	30%	32%	35%	39%
	Neither	10%	19%	14%	15%	12%	12%
	Agree	62%	60%	56%	53%	54%	50%
I was satisfied with the total number of antlerless deer	Disagree	43%	39%	36%	38%	40%	48%
	Neither	16%	7%	11%	24%	9%	13%
	Agree	41%	54%	53%	38%	51%	39%
I was satisfied with the total number of deer I saw while hunting	Disagree	57%	48%	48%	53%	49%	60%
	Neither	8%	14%	11%	24%	5%	11%
	Agree	35%	38%	41%	24%	47%	29%

Figure 30. Hunter satisfaction with total number of deer seen, based on land type hunted.



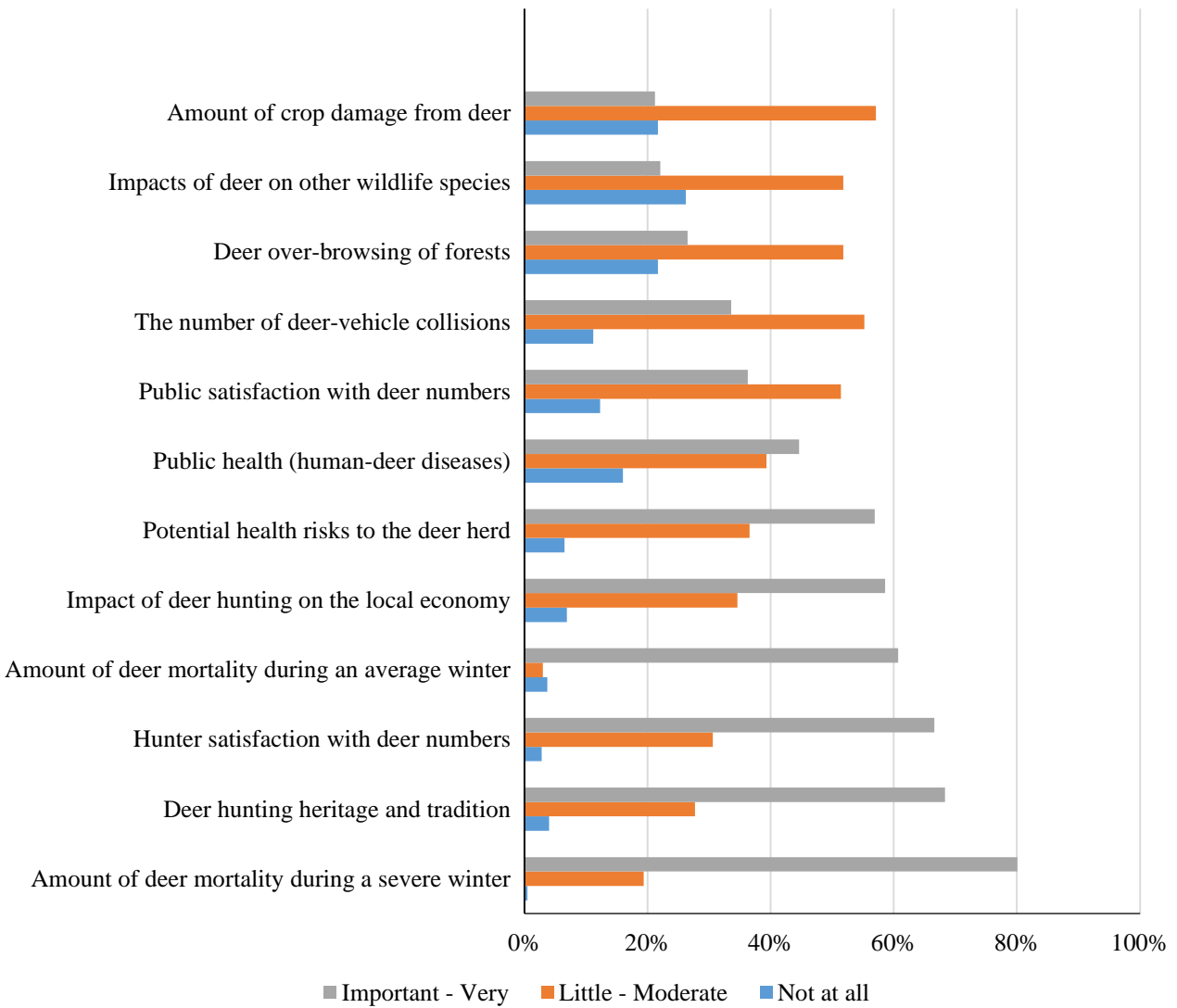
Consideration when setting deer population goals

Respondents were also asked to rate the importance of 12 items when setting deer population goals. They were expressed as items that respondents could consider as relatively important when setting deer population goals. The scale ranges from ‘not at all important’ to ‘very important’ and covered a range of items that would lead to management for either higher or lower deer populations. Overall, respondents viewed severe winter mortality, hunting tradition, and hunter satisfaction as the 3 most important items. The amount of crop damage, impacts on other species, and deer over-browsing of forests were the 3 lowest variables (Table 7; Figure 3).

Table 50. Items that hunters believed should be important when considering setting deer population goals.

Item	Relative Importance				
	Not at all	A little	Moderately	Important	Very
Amount of deer mortality during an average winter	4%	12%	24%	43%	18%
Amount of deer mortality during a severe winter	1%	5%	15%	39%	41%
Deer over-browsing of forests	22%	23%	29%	20%	7%
Public satisfaction with deer numbers	12%	25%	27%	27%	10%
Hunter satisfaction with deer numbers	3%	9%	22%	42%	24%
The number of deer-vehicle collisions	11%	26%	29%	23%	10%
Amount of crop damage from deer	22%	31%	26%	17%	4%
Impacts of deer on other wildlife species	26%	25%	27%	17%	5%
Potential health risks to the deer herd	7%	16%	21%	29%	28%
Public health (human-deer diseases)	16%	21%	18%	25%	20%
Impact of deer hunting on the local economy	7%	12%	23%	34%	25%
Deer hunting heritage and tradition	4%	9%	19%	32%	36%

Figure 31. Graphical importance of items that should be considered when setting deer population goals as defined by hunters. Items were consolidated into 3 groups and ranked by relative importance from low to high.



Landowner Survey

Demographics

We received 184, 220, 263, and 247 responses from the 4 strata, respectively. In total, 65% of respondents indicated they hunted deer in Minnesota during the 2013 deer season; similar percentages were reported for 2011 (65%) and 2012 (65%). Since those percentages of landowners that hunted did not vary, tables that describe hunter attitudes are based off whether or not they hunted in 2013 only. By stratum, a lower proportion of respondents who owned 2 – 20 acres indicated they hunted (40%), as compared to other landowners (20-79.9: 65%; 80-319.9: 69%; 320+: 72%). Overall, individuals had hunted an average of 37 years. Overall, 87% of respondents were male and the average age was 60.5 (range = 20 – 94).

Hunting patterns

A majority of landowners did most (19%) or all (70%) of their hunting on their own private land. Only 38% of all landowners did at least some hunting on public land, while 38% also hunted private land they didn't own. Regardless of where they hunted, a majority of hunting landowners expressed a desire for an increase in deer numbers (Table 8).

Slightly more than two-thirds (76%) indicated they allowed hunting on their property. As expected, individuals with smaller parcels allowed hunting at lower rates (40%) than landowners with at least 20 acres (range = 78% – 87%). Overall, only 3.1% (n = 28) of landowners indicated they leased their property for hunting. With respect to who is allowed to hunt, 88% indicated family members, 58% indicated friends or neighbors, and 10% allowed strangers who asked permission.

Reported damage from deer

The percentage of landowners who had acreage in crops (e.g., row crops, small grains, orchards, vegetables) increased with stratum (range 10% - 55%). The percentage of respondents who owned woodlands or residential properties was consistent among stratum (Figure 4). Landowners who owned at least 320 acres were most likely to indicate they had damage to their crops (62%). A smaller percentage of respondents indicated they had woodlot (9.0%) or residential (20%) damage from deer. With respect to residential damage, landowners who owned <20 acres were slightly more inclined to indicate residential damage from deer (Figure 5).

We observed no statistical differences among severity of damage based on land type (crop, woods, residential) or strata by deer permit area. Essentially, crop damage due to deer was typically categorized as 'minor' or 'moderate', regardless of parcel size (Table 9). We also observed no statistical differences among deer permit areas for landowners who reported damage to crops, woods, or residential acreage (Figure 6).

Table 51. Condensed table of desired deer population trends for landowners that hunted by land type hunted.

Type of land hunted		Desired Population Trend		
		Decrease	No Change	Increase
Private land that I own	None	20%	42%	39%
	Some	11%	22%	67%
	Most	11%	30%	59%
	All	12%	30%	58%
Private land that I lease for hunting	None	16%	34%	50%
	Some	9%	9%	82%
	Most	17%	33%	50%
	All	0%	0%	100%
Private land that I do not own or lease	None	14%	36%	51%
	Some	9%	26%	64%
	Most	3%	29%	69%
	All	27%	30%	43%
Public land	None	17%	33%	50%
	Some	2%	32%	66%
	Most	0%	7%	93%
	All	11%	37%	53%

Figure 32. Percent of landowners who owned crops, woods, and residential acreage.

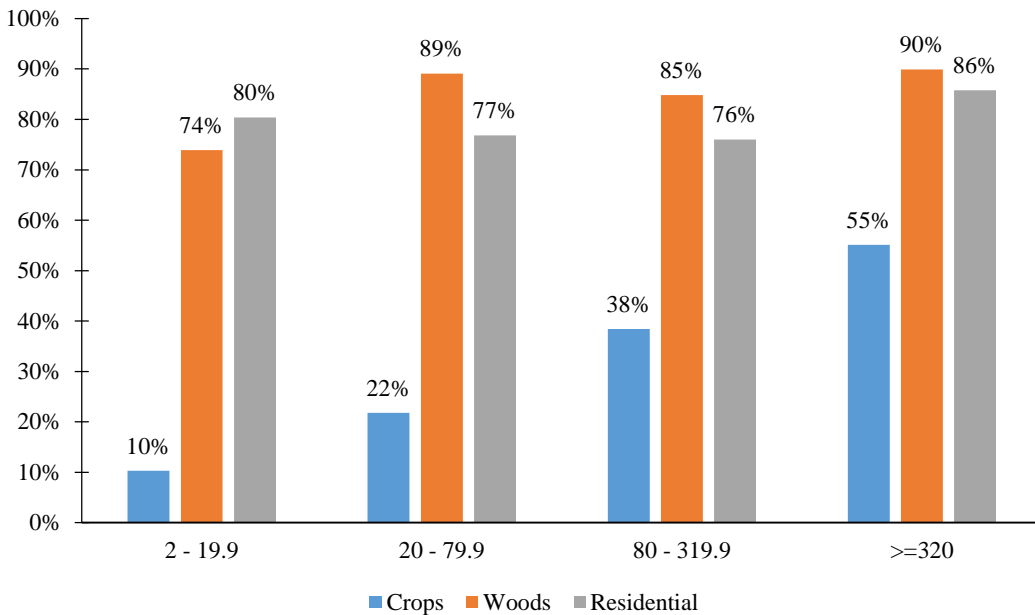


Figure 33. Percent of landowners who indicated they had damage from deer.

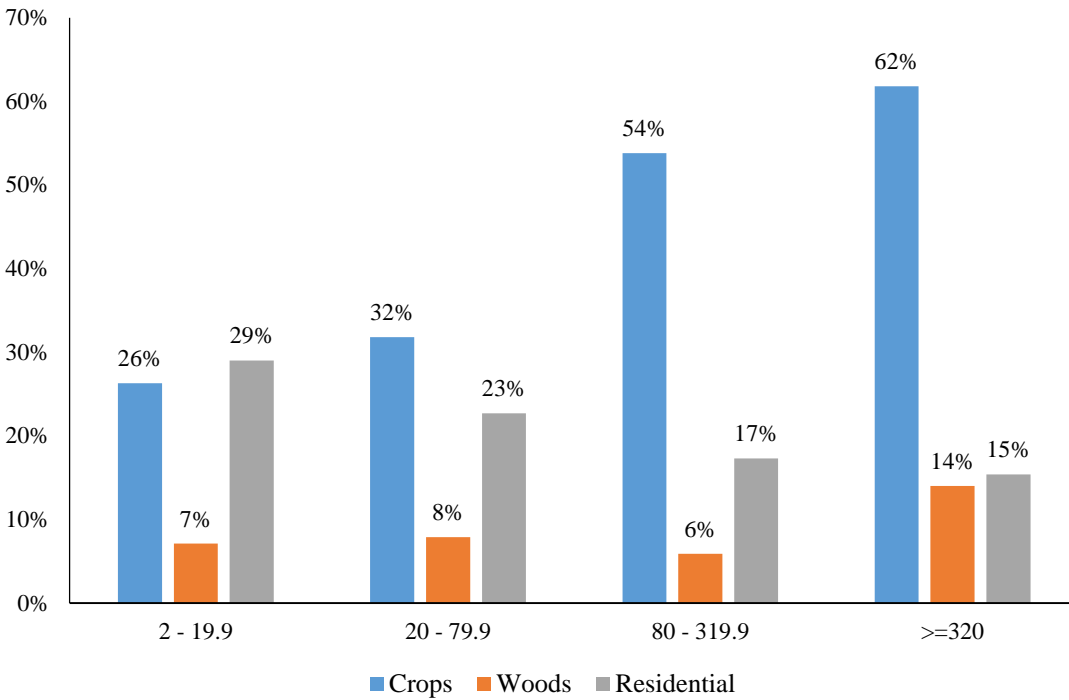
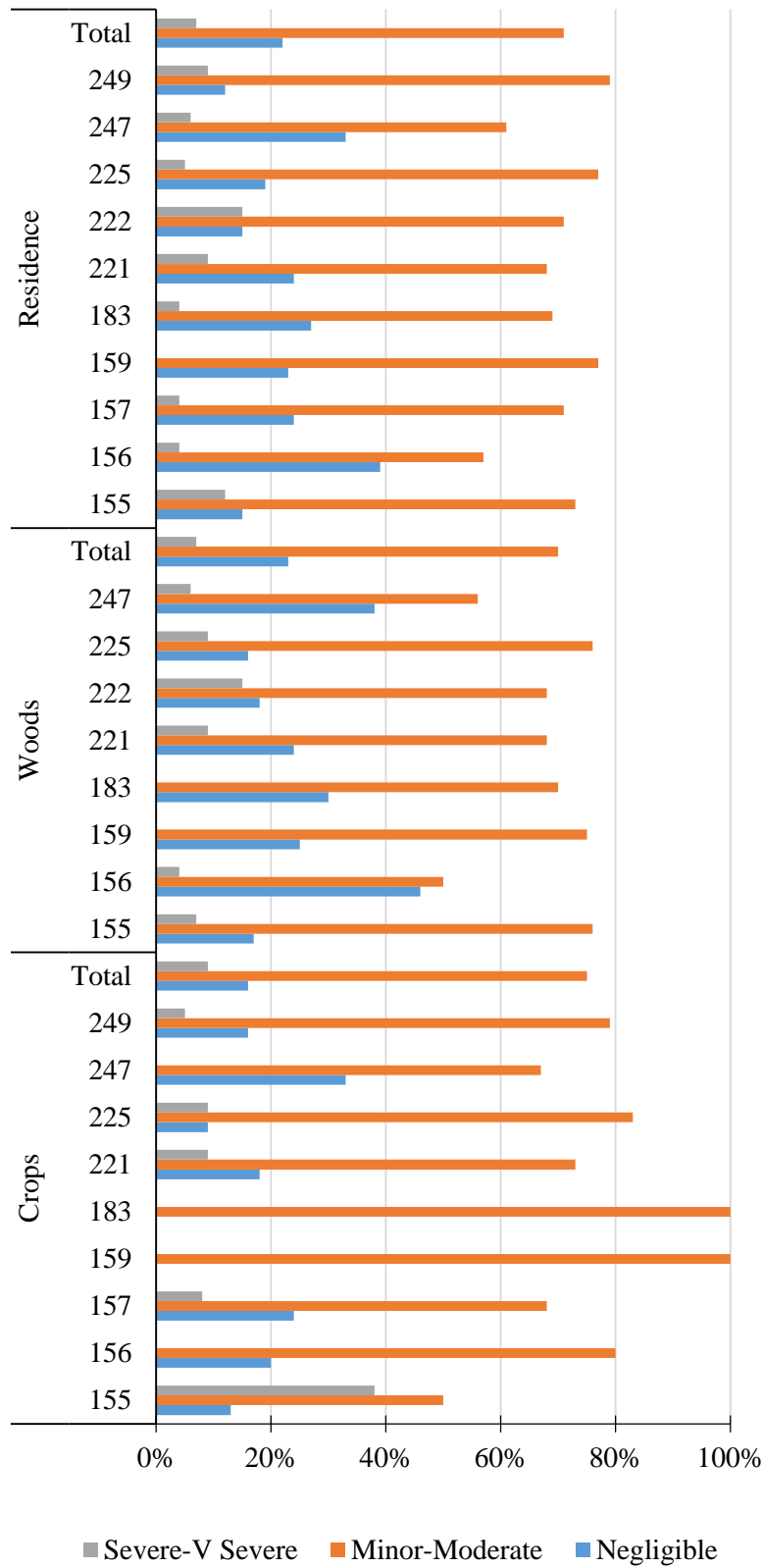


Table 52. Self-described damage caused by deer for crops, woods, and residential land types.

		Strata				Total
		2 - 19.9	20 - 79.9	80 - 319.9	>=320	
Crops	Negligible	29%	20%	14%	15%	16%
	Minor	57%	40%	43%	51%	47%
	Moderate	14%	35%	36%	22%	28%
	Severe	0%	5%	2%	8%	5%
	Very Severe	0%	0%	5%	5%	4%
Woods	Negligible	28%	27%	25%	17%	23%
	Minor	50%	37%	45%	49%	46%
	Moderate	20%	29%	24%	24%	24%
	Severe	2%	7%	2%	6%	5%
	Very Severe	0%	0%	3%	4%	2%
Residential	Negligible	27%	26%	22%	16%	22%
	Minor	51%	38%	45%	49%	46%
	Moderate	20%	28%	27%	24%	25%
	Severe	2%	9%	2%	6%	5%
	Very Severe	0%	0%	4%	5%	3%

Figure 34. Reported damage to crops, woods, and residential acreage, by deer permit area.



Population trends and perceptions about deer populations

Respondents were asked to indicate their perceptions of deer population trends over the last 5 years. Overall, 65% (57% non-hunters, 69% hunters) of respondents indicated there were fewer deer than 5 years ago, 12% (18% non-hunters, 9.3% hunters) indicated more, and 23% (26% non-hunters, 22% hunters) believed populations were the same. Landowners in deer area 159 were most likely to indicate the population was lower (94%; Table 10). Respondents were also asked for their perceptions of total deer population size as rated by ‘too low’, ‘about right’, or ‘too high’. Non-hunting landowners were more likely to indicate the deer population was ‘about right’ (52% vs. 36%), while hunters were more likely to indicate populations were ‘too low’ (58% vs 33%). Non-hunters were more likely to indicate the population was ‘too high’ (5.4% hunters, 15% non-hunters). Similar patterns were detected by deer area in that hunting landowners were more likely to express different population desires than non-hunting landowners (Table 11). Respondents were also asked to indicate their desires for future deer population densities and 58% wanted to see an increase in deer densities at some level (Table 12, Figure 7). We also observed clear differences between hunting and non-hunting landowners with hunting landowners indicating stronger preferences for higher deer populations (Table 13; Figure 8).

Table 53. Perceptions of landowner deer population trends over the last 5 years, by deer area.

Deer Area	Lower		The Same		Higher	
	N	Percent	N	Percent	N	Percent
155	77	70%	20	18%	13	12%
156	92	88%	11	11%	2	2%
157	113	76%	25	17%	11	7%
159	29	94%	2	7%	0	0%
183	53	66%	23	29%	4	5%
221	43	48%	28	32%	18	20%
222	53	58%	21	23%	17	19%
225	62	55%	38	34%	12	11%
247	14	38%	12	32%	11	30%
249	36	44%	25	31%	20	25%
Total	572	65%	205	23%	108	12%

Table 54. Landowner beliefs about current deer population densities, by deer area and whether or not they hunted.

Hunt	Deer Area	N	Too low	N	About right	N	Too high
No (35%)	155	11	31%	19	53%	6	17%
	156	14	50%	12	43%	2	7%
	157	19	42%	16	36%	10	22%
	159	8	53%	5	33%	2	13%
	183	11	37%	17	57%	2	7%
	221	7	29%	15	63%	2	8%
	222	11	32%	14	41%	9	27%
	225	9	17%	39	75%	4	8%
	247	3	21%	3	21%	8	57%
	249	8	29%	18	64%	2	7%
	Sum	101	33%	158	52%	47	15%
Yes (65%)	155	50	69%	17	23%	6	8%
	156	56	74%	17	22%	3	4%
	157	70	69%	28	28%	4	4%
	159	13	81%	3	19%	0	0%
	183	29	58%	18	36%	3	6%
	221	27	43%	31	49%	5	8%
	222	35	61%	19	33%	3	5%
	225	24	42%	29	51%	4	7%
	247	9	39%	13	57%	1	4%
	249	20	38%	31	59%	2	4%
	Sum	333	58%	206	36%	31	5%
Total	155	61	56%	36	33%	12	11%
	156	70	67%	29	28%	5	5%
	157	89	61%	44	30%	14	10%
	159	21	68%	8	26%	2	7%
	183	40	50%	35	44%	5	6%
	221	34	39%	46	53%	7	8%
	222	46	51%	33	36%	12	13%
	225	33	30%	68	62%	8	7%
	247	12	32%	16	43%	9	24%
	249	28	35%	49	61%	4	5%
	Total	434	50%	364	42%	78	9%

Table 55. Preferred landowner population trends, by deer area.

(a) by individual response

Deer Area	Dec 50%	Dec 25%	Dec 10%	No Change	Inc 10%	Inc 25%	Inc 50%
155	2%	5%	7%	15%	30%	25%	17%
156	2%	4%	0%	13%	31%	31%	20%
157	3%	4%	7%	21%	15%	28%	21%
159	3%	3%	0%	16%	13%	35%	29%
183	1%	3%	5%	30%	22%	22%	18%
221	2%	7%	7%	40%	19%	14%	11%
222	8%	4%	3%	27%	21%	23%	13%
225	3%	3%	6%	46%	25%	17%	2%
247	5%	16%	8%	35%	11%	19%	5%
249	0%	5%	4%	48%	16%	19%	9%
Total	3%	5%	5%	29%	21%	23%	14%

(b) Summarized by decrease, stay the same, increase

Deer Area	Decrease	Same	Increase
155	14%	15%	72%
156	6%	13%	82%
157	14%	21%	64%
159	6%	16%	77%
183	9%	30%	62%
221	16%	40%	44%
222	15%	27%	57%
225	12%	46%	44%
247	29%	35%	35%
249	9%	48%	44%
Total	13%	29%	58%

Figure 35. Graphical representation of desired deer population trends for landowners.

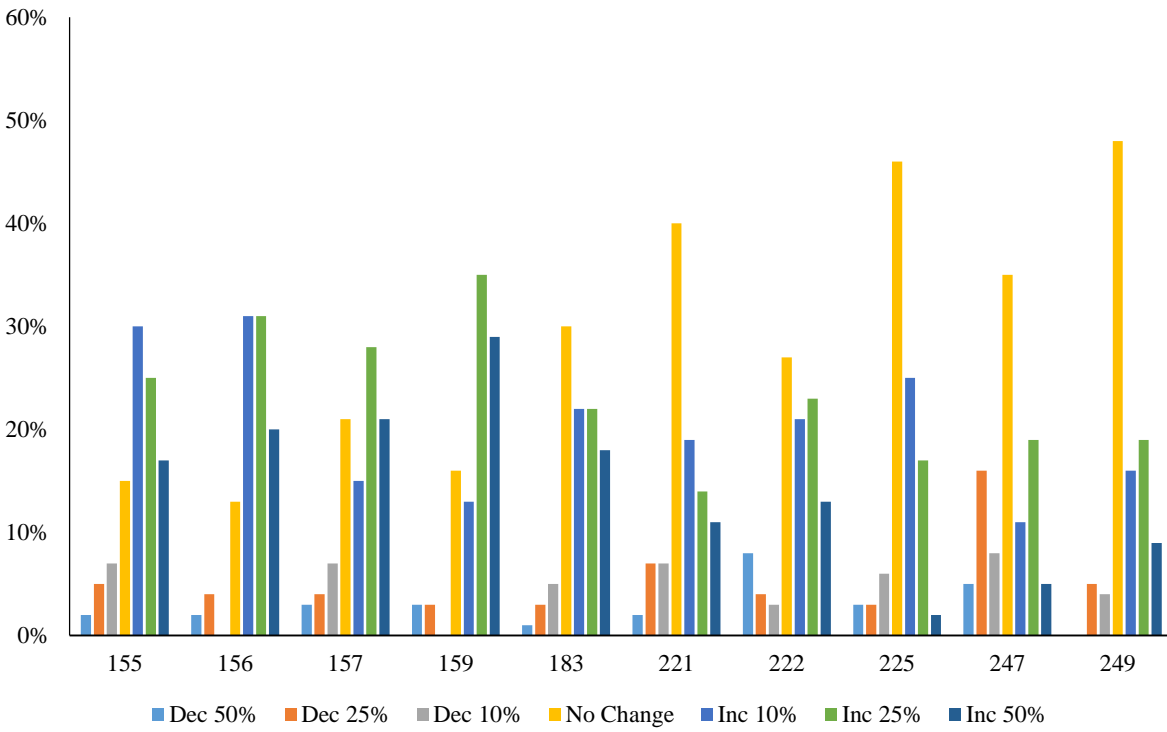
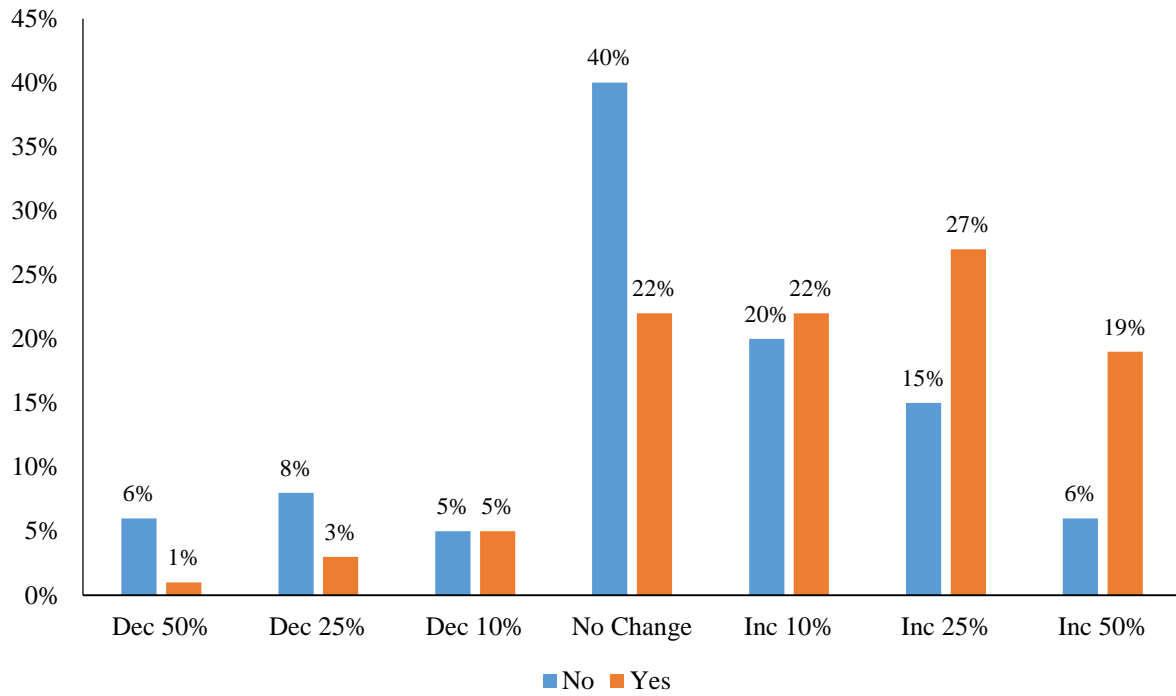


Table 56. Desired deer population trends for landowners, by deer area and whether or not they hunted.

Hunt	Deer Area	Dec 50%	Dec 25%	Dec 10%	No Change	Inc 10%	Inc 25%	Inc 50%
No (35%)	155	3%	3%	11%	31%	33%	14%	6%
	156	4%	7%	0%	18%	36%	18%	18%
	157	9%	9%	9%	37%	13%	15%	9%
	159	7%	7%	0%	20%	20%	40%	7%
	183	3%	3%	3%	48%	24%	14%	3%
	221	4%	13%	0%	54%	17%	13%	0%
	222	18%	9%	3%	35%	21%	12%	3%
	225	2%	6%	6%	57%	20%	8%	2%
	247	14%	36%	7%	14%	14%	14%	0%
	249	0%	4%	7%	57%	0%	21%	11%
	Total	6%	8%	5%	40%	20%	15%	6%
Yes (65%)	155	1%	6%	6%	7%	28%	31%	22%
	156	1%	3%	0%	11%	29%	36%	21%
	157	1%	2%	7%	14%	16%	34%	26%
	159	0%	0%	0%	13%	6%	31%	50%
	183	0%	2%	6%	20%	20%	26%	26%
	221	2%	5%	9%	34%	20%	14%	16%
	222	2%	2%	4%	21%	21%	30%	20%
	225	3%	0%	5%	36%	29%	24%	2%
	247	0%	4%	9%	48%	9%	22%	9%
	249	0%	6%	2%	43%	25%	17%	8%
	Total	1%	3%	5%	22%	22%	27%	19%

Figure 36. Graphical representation of landowner desires for future deer populations, by whether or not they hunted.



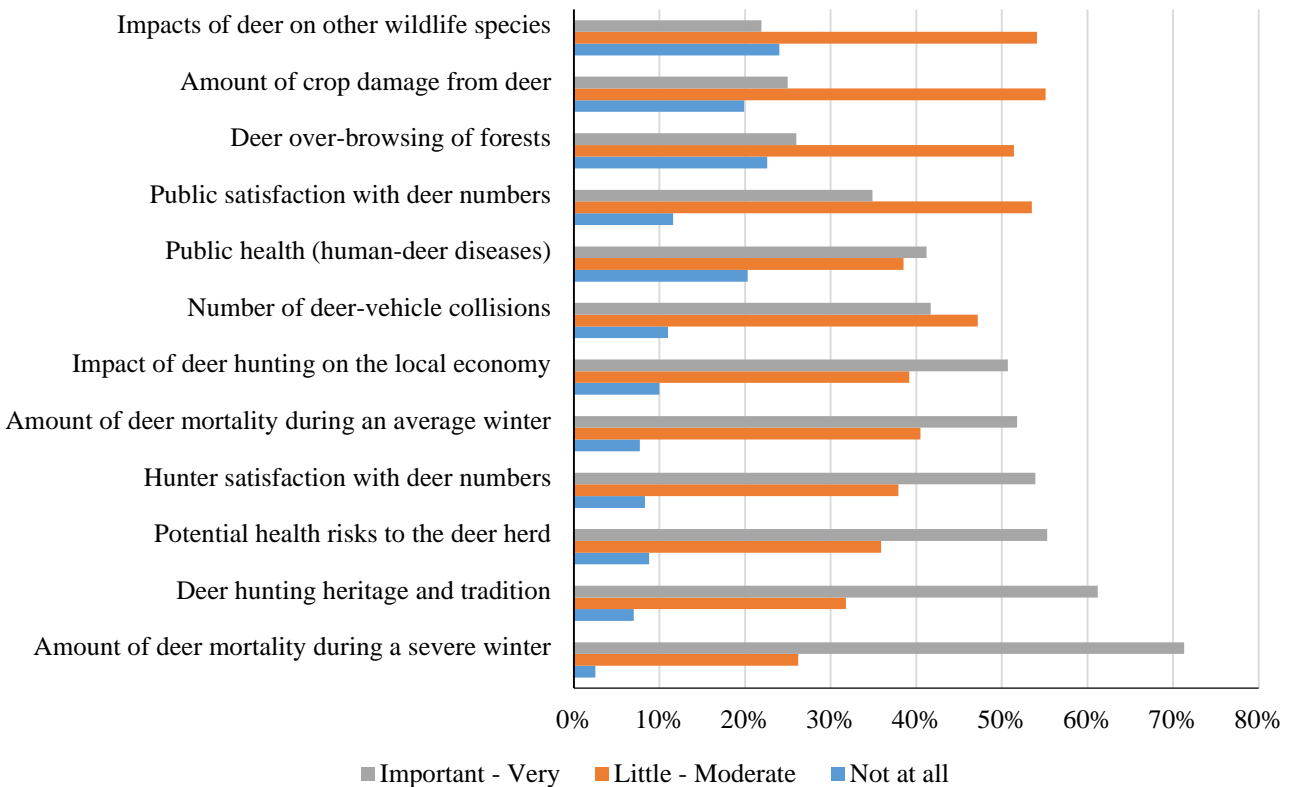
Consideration when setting deer population goals

Respondents were also asked to rate the importance of 12 items when setting deer population goals. The scale ranges from ‘not at all important’ to ‘very important’ and covered a range of items that would lead to both higher or lower deer populations. Deer mortality during a severe winter, hunting tradition, and disease risks to deer were the 3 most important considerations for landowner. Impacts of deer on other species, deer over-browsing, and public health comprised had the lowest relative importance (Table 14; Figure 9).

Table 57. Importance of items landowners indicated should be considered when setting deer population goals.

Item	Not at all	A little	Moderately	Important	Very
Amount of deer mortality during an average winter	8%	14%	27%	36%	16%
Amount of deer mortality during a severe winter	3%	10%	17%	35%	37%
Deer over-browsing of forests	23%	23%	28%	19%	7%
Public satisfaction with deer numbers	12%	20%	34%	26%	9%
Hunter satisfaction with deer numbers	8%	12%	26%	33%	21%
Number of deer-vehicle collisions	11%	21%	26%	27%	15%
Amount of crop damage from deer	20%	24%	31%	19%	6%
Impacts of deer on other wildlife species	24%	25%	29%	17%	5%
Potential health risks to the deer herd	9%	17%	19%	31%	25%
Public health (human-deer diseases)	20%	21%	18%	22%	19%
Deer hunting heritage and tradition	7%	11%	21%	31%	31%
Impact of deer hunting on the local economy	10%	14%	25%	30%	21%

Figure 37. Graphical importance of items that should be considered when setting deer population goals as defined by landowners. Items were consolidated into 3 groups and ranked from low to high by highest importance.



Appendix A. East Central Uplands (Block G4) hunter survey

2014 Survey of Minnesota Deer Hunters: Population Management

The Minnesota Department of Natural Resources will be evaluating deer population goals in east-central Minnesota this year. An important component of this project is to collect information from deer hunters regarding their opinions towards deer populations. You have been selected at random to participate in this survey. Please take a few moments to answer the questions below. Your responses will help guide deer population goals in the area you hunt. This survey should take less than 10 minutes to complete.

1. Please check the boxes below to report if you hunted deer in Minnesota during the 2011, 2012 or 2013 Minnesota deer season. *(Please check all that apply).*

2011 | 2012 | 2013

I did not hunt deer any of these years → Please skip to Question 13

2. Minnesota allows people to hunt deer during all 3 seasons. For the most recent year you hunted, which seasons did you participate? Please mark 'Yes' if you hunted a season and also estimate the number of days you hunted.

Season	Yes	No	If Yes, Number of Days
Archery	<input type="checkbox"/>	<input type="checkbox"/>	_____
Firearm	<input type="checkbox"/>	<input type="checkbox"/>	_____
Muzzleloader	<input type="checkbox"/>	<input type="checkbox"/>	_____

3. Which **ONE** deer permit area did you hunt most often during the most recent deer season you hunted?

219 | 223 | 224 | 227 | 229 | 235 | 236 | 285 | I hunted a permit area not listed

4. If you did not hunt one of the permit areas listed above, please tell us which one you hunted most often:

_____ Area Number

5. Including 2013, how many years have you hunted deer in the permit area you hunt most often?

_____ Years

6. Including 2013, how many years have you been hunting deer in Minnesota? _____ Years

7. How much of your deer hunting did you do on each of the following types of land during your most recent deer hunting season? *(Please circle one item from each row.)*

	None	Some	Most	All
Private land that I own	1	2	3	4
Private land that I lease for hunting	1	2	3	4
Private land that I do not own or lease	1	2	3	4
Public land	1	2	3	4

8. Please indicate if there are any deer harvest restrictions on the property you hunt most often.
- Antlerless harvest is restricted, but hunters can take any legal buck
 - Buck harvest restricted to large antlered bucks, but hunters can take any antlerless deer
 - Buck harvest restricted to large antlered bucks, and antlerless harvest is also restricted
 - No restrictions on the type of deer that can be harvested
 - Other (please explain): _____

9. Please indicate whether you agree or disagree with the following statements regarding your most recent deer hunt. (Please circle one number for each statement below).

	Strongly Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Strongly Agree
I was satisfied with the number of legal bucks	1	2	3	4	5
I was satisfied with the quality of bucks	1	2	3	4	5
I heard about or saw legal bucks while hunting	1	2	3	4	5
I was satisfied with the number of antlerless deer	1	2	3	4	5
I was satisfied with the number of deer I saw while hunting	1	2	3	4	5

10. Will you shoot an antlerless deer if given the opportunity?

- Yes
- No

11. Over the past 5 years, what trend have you seen in the deer population in the permit area you hunt most often?

- Much fewer deer now than 5 years ago
- Slightly fewer deer now than 5 years ago
- About the same number of deer as 5 years ago
- Slightly more deer now than 5 years ago
- Many more deer now than 5 years ago

12. In thinking about the deer permit area you hunt, please indicate your overall satisfaction with current deer numbers.

- Very Dissatisfied
- Slightly Dissatisfied
- Neither Dissatisfied nor Satisfied
- Slightly Satisfied
- Very Satisfied

13. How much importance should we assign to each of the following considerations when setting deer population goals? (*Please circle one number for each statement below*).

	Not at all Important	A little Important	Moderately Important	Important	Very Important
Amount of deer mortality during an average winter	1	2	3	4	5
Amount of deer mortality during a severe winter	1	2	3	4	5
Potential health risks to the deer herd	1	2	3	4	5
Public health (human-deer diseases)	1	2	3	4	5
Amount of crop damage from deer	1	2	3	4	5
Number of deer-vehicle collisions	1	2	3	4	5
Deer over-browsing of forests	1	2	3	4	5
Impacts of deer on other wildlife species	1	2	3	4	5
Deer hunting heritage and tradition	1	2	3	4	5
Hunter satisfaction with deer numbers	1	2	3	4	5
Public satisfaction with deer numbers	1	2	3	4	5
Impact of deer hunting on the local economy	1	2	3	4	5

14. Please identify up to 3 other factors that you believe are important and should be considered when setting deer population goals.

- A. _____
- B. _____
- C. _____

26. In thinking about the deer permit area you hunt, would you say the deer population is,

- Much too Low Too Low About Right Too High Much too High

27. In thinking about the property you hunt 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
Population
50%
(Significant) | Decrease
Population
25%
(Moderate) | Decrease
Population
10%
(Slight) | No Change | Increase
Population
10%
(Slight) | Increase
Population
25%
(Moderate) | Increase
Population
50%
(Significant) |

28. 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? (*Check one*)

- Strongly Oppose
- Slightly Oppose
- Neither Oppose nor Support
- Slightly Support
- Strongly Support

29. Please let us know how you feel about the Minnesota Department of Natural Resources. (*Please circle one response for each of the following statements.*)

	Strongly Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Strongly Agree
The MnDNR does a good job of managing deer in Minnesota.	1	2	3	4	5
When deciding about deer management in Minnesota, the MnDNR will be open and honest in the things they do and say.	1	2	3	4	5
The MnDNR can be trusted to make decisions about deer management that are good for the resource.	1	2	3	4	5
The MnDNR will make decisions about deer management in a way that is fair.	1	2	3	4	5
The MnDNR has deer managers and biologists who are well-trained for their jobs.	1	2	3	4	5
The MnDNR listens to the concerns of deer hunters.	1	2	3	4	5

30. What is your gender?

- Male
- Female

31. What year were you born? _____ (*Please use the 4 digit year*).

If you would be willing to respond to additional questions about deer management and hunting in Minnesota and are willing to provide your email address, please write it below. We will only use your email address for research related to deer management and will not share it with anyone.

E-mail address: _____

2014 Survey of Minnesota Landowners: Deer Management

The Minnesota Department of Natural Resources will be evaluating deer population goals in east-central Minnesota this year. An important component of this project is to collect information from landowners regarding their opinions towards deer populations and land management. You have been selected at random to participate in this survey. Please take a few moments to answer the questions below. This survey should take less than ten minutes to complete. Your responses will help guide deer population goals in the area you own land.


1. How many total acres did you own and/or lease at the end of 2013?

_____ 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. Please also estimate the percentage of that land type you have enrolled in a State or Federal Conservation Program.

Land Type	Acres Owned	Acres Leased	% Enrolled in Conservation Program
Private Residence (house, lawns, associated buildings)			%
Woodlands (natural forest or tree plantings)			%
Brushland (including abandoned, overgrown fields)			%
Hayfields, Pasture, or Grassland			%
Wetlands			%
Row Crops			%
Small Grains			%
Orchards or Vineyards			%
Vegetables or other Truck Crops			%
Prairie (Native or Restored)			%
Wildlife Food Plots			%
Other (please list: _____)			%

3. Did you experience deer damage to land that you own or leased in 2013?

Crops	<input type="checkbox"/> Yes	<input type="checkbox"/> No		IF ALL ARE <u>NO</u> PLEASE SKIP TO QUESTION 6
Woodlands	<input type="checkbox"/> Yes	<input type="checkbox"/> No		
Landscaping	<input type="checkbox"/> Yes	<input type="checkbox"/> No		

4. How would you describe the total amount of deer damage you experienced in 2013? (*Check one*)

Negligible Minor Moderate Severe Very Severe

5. How would you compare the amount of deer damage you experienced in 2013 to what you experienced 5 years ago? (*Check one*)

- Much less damage than 5 years ago
- Slightly less damage than 5 years ago
- About the same damage as 5 years ago
- Slightly more damage than 5 years ago
- Much more damage than 5 years ago
- I was not farming/managing lands 5 years ago

6. Over the past 5 years, what trend have you seen in the deer population in the area of your property? (Check one)

- Much fewer deer now than 5 years ago
- Slightly fewer deer now than 5 years ago
- About the same number of deer now as 5 years ago
- Slightly more deer now than 5 years ago
- Many more deer now than 5 years ago

7. In thinking about your property and the surrounding area, please indicate your overall satisfaction with current deer numbers. (Check one)

- Very Dissatisfied
- Slightly Dissatisfied
- Neither Dissatisfied nor Satisfied
- Slightly Satisfied
- Very Satisfied

8. How much importance should we assign to each of the following considerations when setting deer population goals? (Please circle one number for each statement below)

	Not at all Important	A little Important	Moderately Important	Important	Very Important
Amount of deer mortality during an average winter	1	2	3	4	5
Amount of deer mortality during a severe winter	1	2	3	4	5
Potential health risks to the deer herd such as chronic wasting disease	1	2	3	4	5
Public health (human-deer diseases)	1	2	3	4	5
Amount of crop damage from deer	1	2	3	4	5
Number of deer-vehicle collisions	1	2	3	4	5
Deer over-browsing of forests	1	2	3	4	5
Impacts of deer on other wildlife species	1	2	3	4	5
Deer hunting heritage and tradition	1	2	3	4	5
Hunter satisfaction with deer numbers	1	2	3	4	5
Public satisfaction with deer numbers	1	2	3	4	5
Impact of deer hunting on the local economy	1	2	3	4	5

11. Please identify up to 3 other factors that you believe are important and should be considered when setting deer population goals.

- A. _____
- B. _____
- C. _____

35. In thinking about your property and the surrounding area, would you say the deer population is, (Check one)

- Much too Low
- Too Low
- About Right
- Too High
- Much too High

36. 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 Population 50% (Significant)	Decrease Population 25% (Moderate)	Decrease Population 10% (Slight)	No Change	Increase Population 10% (Slight)	Increase Population 25% (Moderate)	Increase Population 50% (Significant)

37. Did you allow hunting on your property during the 2013 deer season? *(Check only one)*

- Yes
- No → PLEASE SKIP TO QUESTION 16

38. Do you lease any of your property for deer hunting?

- Yes
- No

39. 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 2013.

- | | | |
|---|--|--|
| <input type="checkbox"/> Myself or family members _____ people
<input type="checkbox"/> Friends or neighbors _____ people
<input type="checkbox"/> Other (please list: _____) _____ people | | <input type="checkbox"/> Strangers who ask permission _____ people
<input type="checkbox"/> People who lease my property _____ people |
|---|--|--|

40. Please indicate if you impose any deer harvest restrictions on your property. *(Please check one only)*

- Antlerless harvest is restricted, but hunters can take any legal buck
- Buck harvest restricted to large antlered bucks, but hunters can take any antlerless deer
- Buck harvest restricted to large antlered bucks, and antlerless harvest is also restricted
- No restrictions on the type of deer that can be harvested
- Other (please list: _____)

41. Please check the boxes below if you hunted deer in Minnesota during the 2011, 2012 or 2013 Minnesota deer season? *(Please check all that apply)*

- 2011 | 2012 | 2013
- I hunt deer but did not hunt any of these years → Please skip to Question 20
- I do not hunt deer at all → Please skip to Question 21

42. Which **ONE** deer permit area did you hunt most often during the most recent deer season you hunted?

- 219 | 223 | 224 | 227 | 229 | 235 | 236 | 285 | I hunted a permit area not listed

43. If you did not hunt one of the permit areas listed above, please tell us which one you hunted most often:

_____ Area Number

44. 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 row)

	None	Some	Most	All
Private land that I own	1	2	3	4
Private land that I lease for hunting	1	2	3	4
Private land that I do not own or lease	1	2	3	4
Public land	1	2	3	4

45. Including 2013, how many years have you been hunting deer in Minnesota? _____ Years.

46. To what extent would you support or oppose a regulation that would increase the proportion of antlered bucks in the area you own property? (Check one)

- Strongly Oppose
- Slightly Oppose
- Neither Oppose nor Support
- Slightly Support
- Strongly Support

25. Please let us know how you feel about the Minnesota Department of Natural Resources. (Please circle one response for each of the following statements.)

	Strongly Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Strongly Agree
The MnDNR does a good job of managing deer in Minnesota.	1	2	3	4	5
When deciding about deer management in Minnesota, the MnDNR will be open and honest in the things they do and say.	1	2	3	4	5
The MnDNR can be trusted to make decisions about deer management that are good for the resource.	1	2	3	4	5
The MnDNR will make decisions about deer management in a way that is fair.	1	2	3	4	5
The MnDNR has deer managers and biologists who are well-trained for their jobs.	1	2	3	4	5
The MnDNR listens to the concerns of landowners.	1	2	3	4	5

30. What is your gender?

- Male
- Female

31. What year were you born? _____ (Please use the 4 digit year)

If you would be willing to respond to additional questions about deer management and hunting in Minnesota and are willing to provide your email address, please write it below. We will only use your email address for research related to deer management and will not share it with anyone.

E-mail address: _____

Sand Plain – Big Woods (Block G5)
Deer Goal Setting
Landowner and Hunter Survey Results



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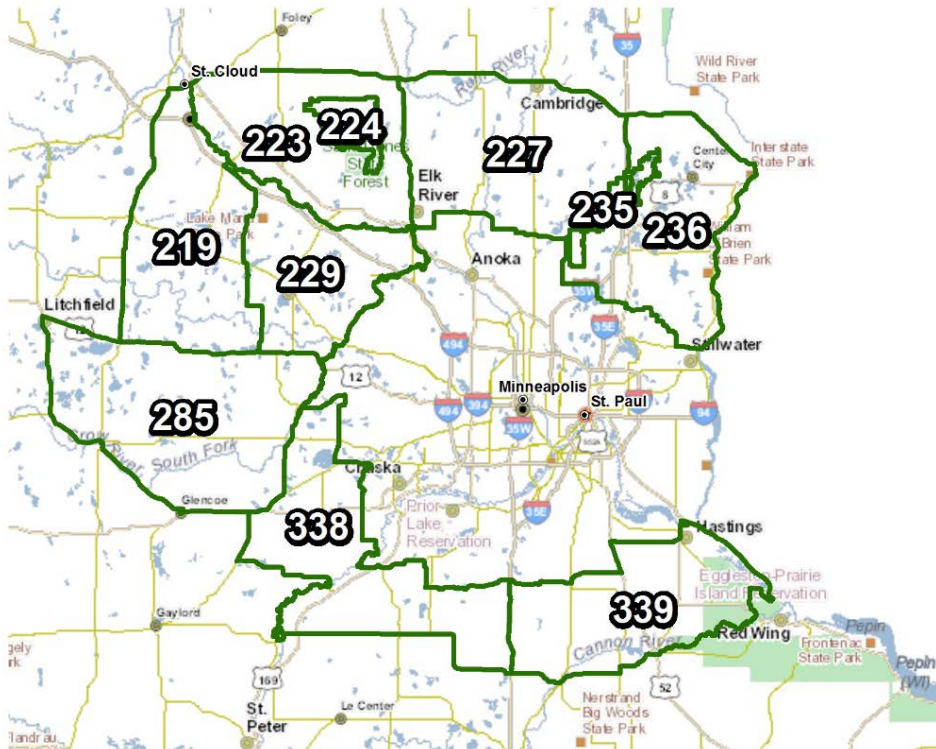
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Public Surveys for Deer Goal Setting

MN DNR periodically conducts stakeholder surveys to collect information about public desires and opinions regarding specific natural resource management issues. Survey recipients are selected randomly and provide a statistically representative sample of stakeholder opinions. Thus, these surveys differ from annual public input opportunities which may include some bias according to self-selection of interested parties. In 2014, both hunters (Appendix A) and landowners (Appendix B) in this goal setting block were surveyed; the resulting information provides a basis for the 2015 deer population goal setting process. This report covers goal block 5, Sand Plain – Big Woods.



Methods

Hunters and private landowners were surveyed using a mixed mode design that included two waves of letters requesting survey completion online; the third wave was mailed using a self-administered mail back questionnaire (Appendices A and B).

For the hunter survey, we randomly selected 2,600 adult 2013 deer license holders who indicated they intended to hunt in deer areas 219, 223, 224, 227, 229, 235, 236, or 285. Deer areas 338 and 339 were included in the 2012-13 hunter and landowner surveys for southeastern Minnesota; as a result the permit areas were not surveyed again in 2014. A total of 110 surveys were undeliverable and we received 737 completed responses, which yielded an adjusted response rate

of 30%. Landowner parcels were stratified into 4 acreages, 1) 2 – 19.9, 2) 20 – 79.9, 3) 80 – 319.9, and 4) 320+. We selected a simple random sample from strata 1 and 2 (n = 759), strata 3 (n = 758), and surveyed all landowners in strata 4 (N = 324). Overall, there were 288 undeliverable surveys; 871 completed landowner surveys were returned, yielding a 36% adjusted response rate. Deer areas 224 (Sherburne NWR) and 235 (Carlos Avery WMA) are comprised entirely of public land so were no landowner surveys. For both surveys, our error rate at the goal block level was approximately 3%.

Hunter Survey

Demographics

Nearly all respondents (94%) indicated they hunted during the 2013 firearm deer season. Overall 26% indicated they hunted deer during the archery season and 21% hunted muzzleloader. Firearm hunters spent an average of 5.4 days afield, compared to 6.2 for muzzleloader and 17.7 for archery hunters. Overall, individuals had hunted an average of 24 years in Minnesota and 16 years in the deer area they indicated they hunted most often. Overall, 89% of respondents were male and the average age was 47.9 (range = 15 – 80).

More than half of hunters did at least some of their hunting on their own private land (61%) or other private land (79%). Slightly less than half (43%) did at least some of their hunting on public land. Another 8.5% indicated they did at least some hunting on lands that they leased for deer hunting. Only 3.4% of respondents hunted exclusively on land they leased. With respect to future populations; a majority expressed a desire for an increase in deer numbers, regardless of where they hunted (Table 1).

Population trends and perceptions about deer populations

Respondents were asked to indicate their perceptions of deer population trends over the last 5 years. Overall, 64% of respondents indicated there were fewer deer than 5 years ago, 12% indicated more, and 24% believed populations were the same. We observed some differences; hunters in deer area 224 (Sherburne NWR) were most likely to indicate populations had declined (80%). Slightly more than half of 219 (55%), 223 (57%), 227 (58%), and 235 (58%) hunters felt populations had declined (Table 2). Respondents were also asked for their perceptions of total deer population size as rated by ‘too low’, ‘about right’, or ‘too high’. Slightly more than half (54%) believed the population was ‘too low’, 42% thought it was ‘about right’, and 5% indicated the population was ‘too high’. We observed statistical differences among deer permit areas with similar patterns as described above (Table 3). Respondents were also asked to indicate their desires for future deer population densities and two-thirds (67%) wanted to see an increase in deer densities at some level (Table 4, Figure 1). A majority of respondents (85%) would shoot an antlerless deer if given the opportunity.

Table 58. Condensed table of desired deer population trends of hunters, by land type hunted.

Type of land hunted		Desired Population Trend		
		Decrease	No Change	Increase
Private land that I own	None	7%	21%	72%
	Some	13%	15%	72%
	Most	11%	26%	63%
	All	11%	31%	58%
Private land that I lease for hunting	None	9%	23%	68%
	Some	9%	18%	73%
	Most	0%	0%	100%
	All	23%	31%	46%
Private land that I do not own or lease	None	13%	28%	59%
	Some	9%	20%	71%
	Most	11%	19%	71%
	All	7%	26%	67%
Public land	None	10%	27%	64%
	Some	9%	21%	70%
	Most	10%	15%	74%
	All	5%	8%	87%

Table 59. Hunter perceptions of deer population trends over the last 5 years, by deer permit area.

Deer Area	Lower		The Same		Higher	
	N	Percent	N	Percent	N	Percent
219	55	55%	23	23%	22	22%
223	70	57%	31	25%	21	17%
224	24	80%	3	10%	3	10%
227	87	58%	43	29%	19	13%
229	30	63%	13	27%	5	10%
235	11	58%	7	37%	1	5%
236	84	74%	22	20%	7	6%
285	54	75%	15	21%	3	4%
Total	415	64%	157	24%	81	12%

Table 60. Hunter beliefs about current deer population densities, by deer area.

Deer Area	Too Low		About Right		Too High	
	N	Percent	N	Percent	N	Percent
219	47	47%	47	47%	6	6%
223	55	46%	61	51%	4	3%
224	22	76%	7	24%	0	0%
227	67	45%	69	46%	14	9%
229	25	52%	22	46%	1	2%
235	12	63%	7	37%	0	0%
236	67	59%	41	36%	6	5%
285	55	76%	17	24%	0	0%
Total	350	54%	271	42%	31	5%

Table 61. Deer population trend preferences for hunters, by deer permit area.

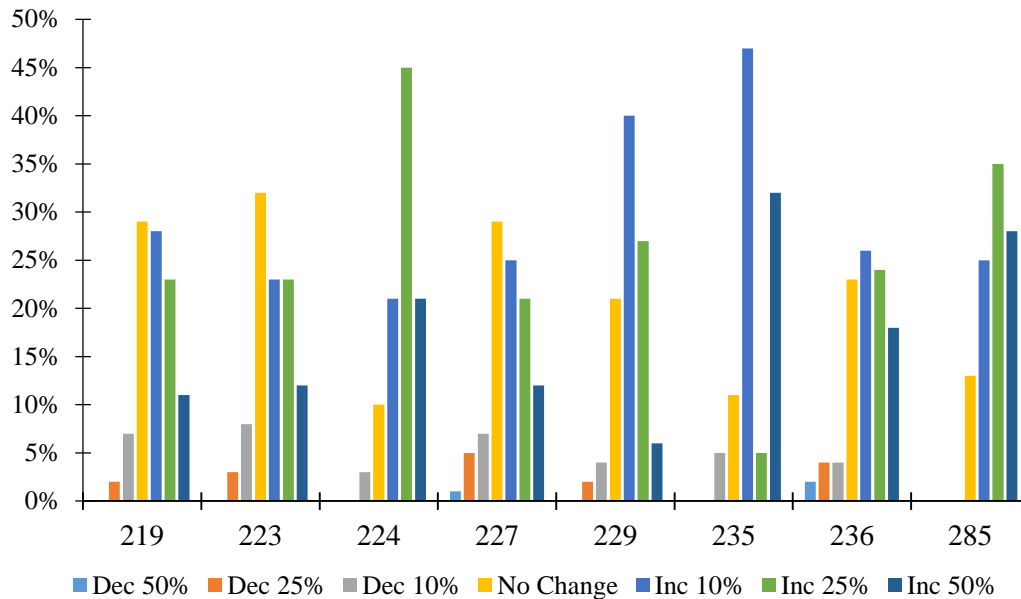
(a) By individual response

Deer Area	Dec 50%	Dec 25%	Dec 10%	No Change	Inc 10%	Inc 25%	Inc 50%
219	0%	2%	7%	29%	28%	23%	11%
223	0%	3%	8%	32%	23%	23%	12%
224	0%	0%	3%	10%	21%	45%	21%
227	1%	5%	7%	29%	25%	21%	12%
229	0%	2%	4%	21%	40%	27%	6%
235	0%	0%	5%	11%	47%	5%	32%
236	2%	4%	4%	23%	26%	24%	18%
285	0%	0%	0%	13%	25%	35%	28%
Total	1%	3%	5%	25%	27%	25%	15%

(b) Summarized by decrease, same, increase

Deer Area	Decrease	Same	Increase
219	9%	29%	62%
223	11%	32%	58%
224	3%	10%	87%
227	13%	29%	58%
229	6%	21%	73%
235	5%	11%	84%
236	10%	23%	68%
285	0%	13%	88%
Total	9%	25%	67%

Figure 38. Graphical representation of hunters' desired deer population trends.



Satisfaction

Hunters were asked to indicate their overall satisfaction with deer numbers, whether they heard about or saw legal bucks, their satisfaction with the number of legal bucks, quality of bucks, total number of deer and total number of antlerless deer. Nearly one-third (32%) were satisfied with current deer numbers; a slight majority (52%) indicated dissatisfaction (Table 5). In total, less than half of respondents (39%) indicated they were satisfied with the total number of deer they saw while hunting (50% were not satisfied and 12% were neutral). Half were satisfied with the total number of antlerless deer they observed. About one-third (34%) were satisfied with the number of legal bucks observed; about half were dissatisfied (48%). More than half (57%) indicated they heard about or saw legal bucks while hunting. More hunters (51%) were dissatisfied than satisfied (34%) with the quality of bucks observed (Table 6). Finally, we observed no real differences among land type hunted and satisfaction with total deer numbers; around half to two-thirds were not satisfied with the number of deer they saw while hunting (range = 44% - 67%) (Figure 2).

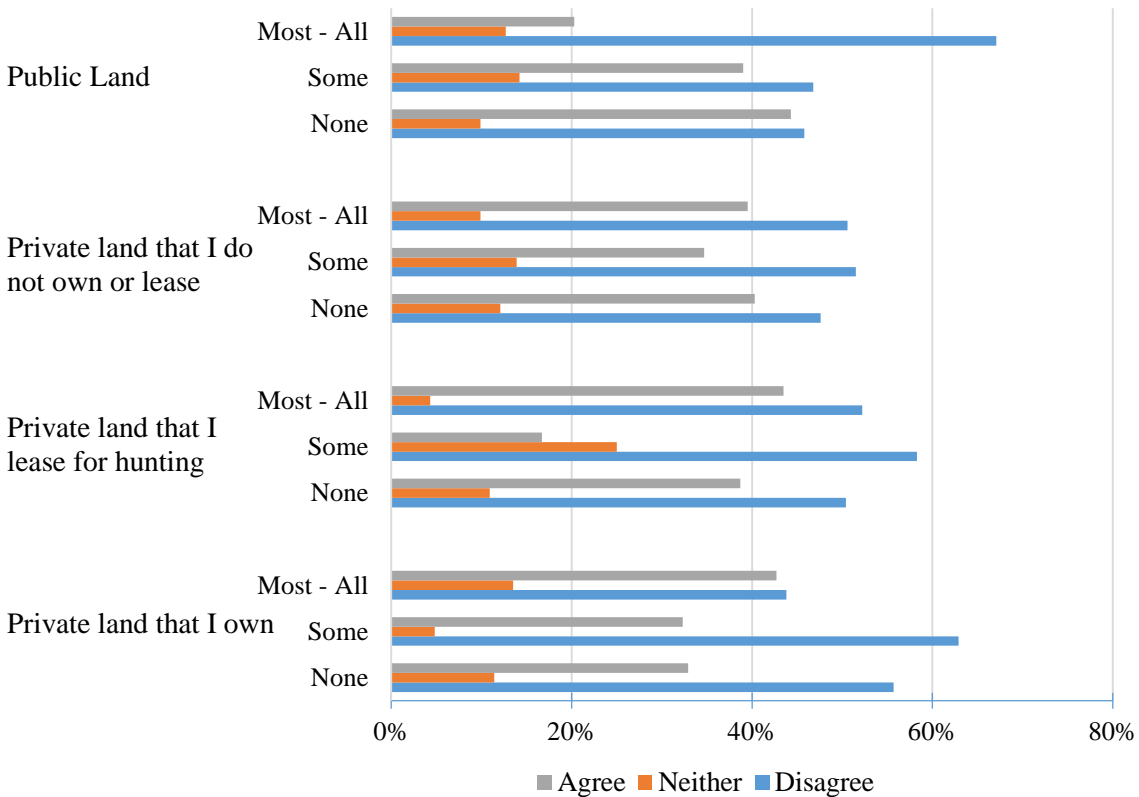
Table 62. Overall hunter satisfaction with total deer numbers, by deer area.

DPA	Dissatisfied		Neither		Satisfied	
	N	Percent	N	Percent	N	Percent
219	41	41%	15	15%	44	44%
223	56	46%	24	20%	42	34%
224	22	73%	5	17%	3	10%
227	74	49%	20	13%	56	37%
229	22	46%	10	21%	16	33%
235	12	63%	4	21%	3	16%
236	63	55%	19	17%	33	29%
285	48	67%	13	18%	11	15%
Total	338	52%	110	17%	208	32%

Table 63. Hunter satisfaction with number and quality of bucks, antlerless deer, and total deer numbers, by area.

		Deer Area								
		219	223	224	227	229	235	236	285	Total
I was satisfied with the number of legal bucks	Disagree	45%	41%	46%	44%	33%	68%	54%	67%	48%
	Neither	13%	19%	18%	17%	27%	11%	18%	15%	17%
	Agree	42%	40%	36%	39%	40%	21%	29%	18%	35%
I was satisfied with the quality of bucks	Disagree	53%	46%	50%	45%	38%	58%	57%	69%	51%
	Neither	11%	13%	7%	18%	31%	11%	16%	13%	15%
	Agree	36%	41%	43%	37%	31%	32%	27%	18%	34%
I heard about or saw legal bucks while hunting	Disagree	28%	29%	25%	28%	23%	42%	35%	38%	30%
	Neither	6%	15%	7%	11%	23%	16%	8%	21%	13%
	Agree	66%	57%	68%	60%	54%	42%	58%	42%	57%
I was satisfied with the total number of antlerless deer	Disagree	25%	28%	50%	32%	29%	50%	48%	54%	37%
	Neither	13%	17%	7%	11%	23%	17%	11%	13%	13%
	Agree	62%	55%	43%	57%	48%	33%	42%	33%	50%
I was satisfied with the total number of deer I saw while hunting	Disagree	43%	48%	53%	42%	40%	63%	57%	68%	50%
	Neither	6%	15%	13%	9%	23%	16%	10%	13%	12%
	Agree	51%	38%	33%	49%	38%	21%	32%	19%	39%

Figure 39. Hunter satisfaction with total number of deer seen, based on land type hunted.



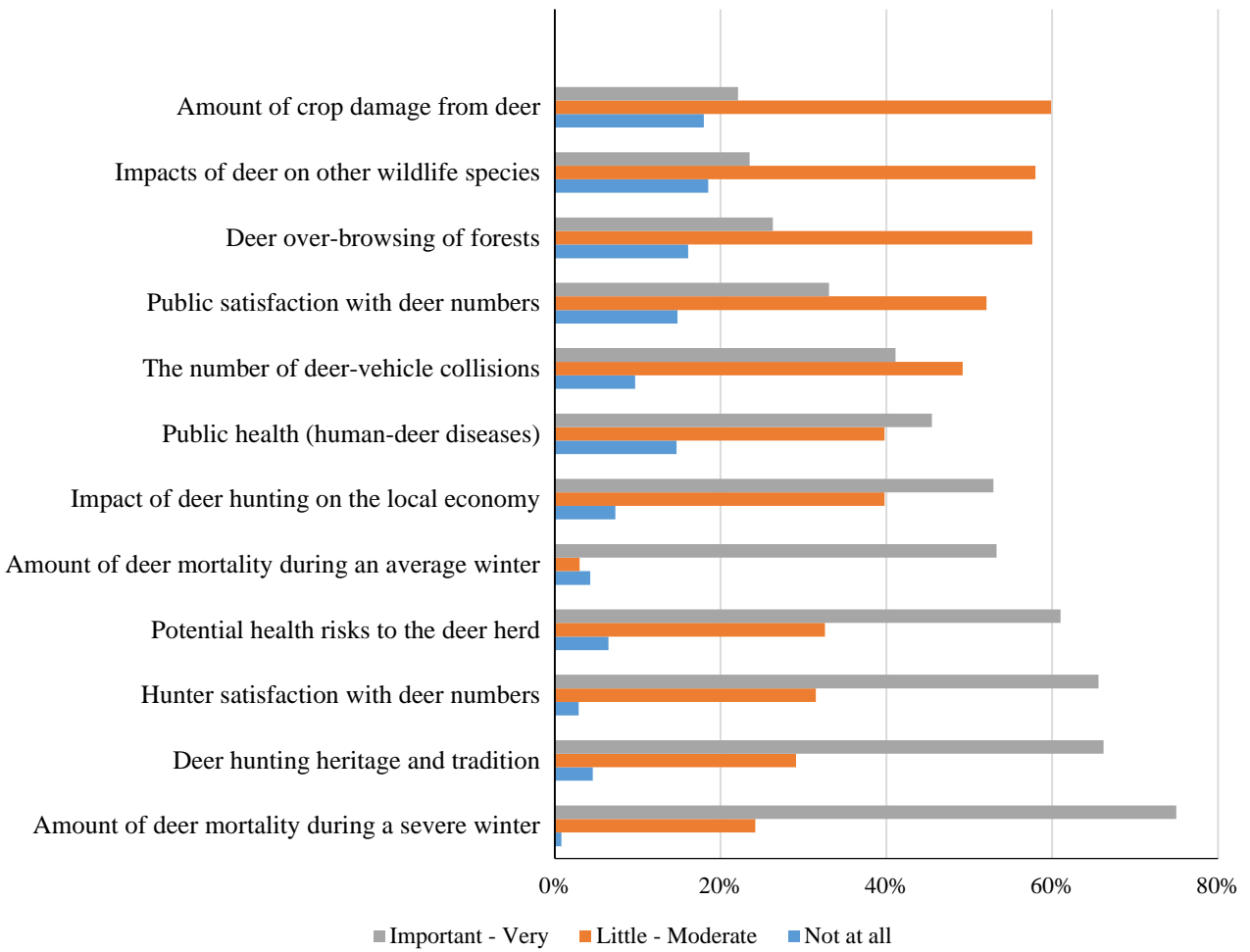
Consideration when setting deer population goals

Respondents were also asked to rate the importance of 12 items when setting deer population goals. They were expressed as items that respondents could consider as relatively important when setting deer population goals. The scale ranges from ‘not at all important’ to ‘very important’ and covered a range of items that would lead to management for either higher or lower deer populations. Overall, respondents viewed severe winter mortality, hunting tradition, and hunter satisfaction as the 3 most important items. The amount of crop damage, impacts on other species, and deer over-browsing of forests were the 3 lowest variables (Table 7, Figure 3).

Table 64. Items that hunters believed should be important when considering setting deer population goals.

Item	Not at all	A little	Moderately	Important	Very
Amount of deer mortality during an average winter	4%	14%	29%	38%	15%
Amount of deer mortality during a severe winter	1%	8%	16%	39%	36%
Deer over-browsing of forests	16%	26%	32%	20%	7%
Public satisfaction with deer numbers	15%	22%	30%	24%	9%
Hunter satisfaction with deer numbers	3%	9%	23%	41%	25%
The number of deer-vehicle collisions	10%	20%	29%	27%	14%
Amount of crop damage from deer	18%	32%	28%	18%	5%
Impacts of deer on other wildlife species	19%	27%	31%	18%	5%
Potential health risks to the deer herd	7%	14%	19%	32%	29%
Public health (human-deer diseases)	15%	21%	19%	25%	20%
Impact of deer hunting on the local economy	7%	13%	27%	31%	22%
Deer hunting heritage and tradition	5%	9%	20%	30%	36%

Figure 40. Graphical importance of items that should be considered when setting deer population goals as defined by hunters. Items were consolidated into 3 groups and ranked by relative importance from low to high.



Landowner Survey

Demographics

We received 223, 266, 280, and 101 responses from the 4 strata, respectively. In total, 43% of respondents indicated they hunted deer in Minnesota during the 2013 deer season; similar percentages were reported for 2011 (44%) and 2012 (44%). Since those percentages of landowners that hunted did not vary, tables that describe hunter attitudes are based off whether or not they hunted in 2013 only. By stratum, a lower proportion of respondents who owned 2 – 20 acres indicated they hunted (37%), as compared to other landowners (20-79.9: 49%; 80-319.9: 44%; 320+: 43%). Overall, individuals had hunted an average of 32 years. Overall, 83% of respondents were male and the average age was 61.2 (range = 20 – 95).

Hunting patterns

A majority of landowners did most (15%) or all (59%) of their hunting on their own private land. Only one-third of all landowners did at least some hunting on public land (34%), while 50% hunted private land they didn't own. Regardless of where they hunted, a majority of hunting landowners expressed a desire for an increase in deer numbers (Table 8).

Slightly more than two-thirds (68%) indicated they allowed hunting on their property. As expected, individuals with smaller parcels allowed hunting at lower rates (34%) than landowners with at least 20 acres (range = 74% – 90%). Overall, only 4% (n = 23) of landowners indicated they leased their property for hunting. With respect to who is allowed to hunt, 48% indicated family members, 41% indicated friends or neighbors, and 8.6% allowed strangers who asked permission.

Reported damage from deer

The percentage of landowners who had acreage in crops (e.g., row crops, small grains, orchards, vegetables) increased with stratum (range 17% - 81%). The percentage of respondents who owned woodlands or residential properties was consistent among stratum (Figure 4).

Landowners who owned at least 320 acres were most likely to indicate they had damage to their crops (68%). A smaller percentage of respondents indicated they had woodlot (7.6%) or residential (20%) damage from deer. With respect to residential damage, landowners who owned <20 acres were slightly more inclined to indicate damage from deer (Figure 5).

We observed no statistical differences among severity of damage based on land type (crop, woods, residential) or strata by deer permit area. Essentially, damage due to deer was typically categorized as 'negligible' or 'minor', regardless of parcel size (Table 9). We also observed no statistical differences among deer permit areas for landowners who reported damage to crops, woods, or residential acreage (Figure 6).

Table 65. Condensed table of desired deer population trends for landowners that hunted by land type hunted.

Type of land hunted		Desired Population Trend		
		Decrease	No Change	Increase
Private land that I own	None	20%	42%	39%
	Some	11%	22%	67%
	Most	11%	30%	59%
	All	12%	30%	58%
Private land that I lease for hunting	None	16%	34%	50%
	Some	9%	9%	82%
	Most	17%	33%	50%
	All	0%	0%	100%
Private land that I do not own or lease	None	14%	36%	51%
	Some	9%	26%	64%
	Most	3%	29%	69%
	All	27%	30%	43%
Public land	None	17%	33%	50%
	Some	2%	32%	66%
	Most	0%	7%	93%
	All	11%	37%	53%

Figure 41. Percent of landowners who owned crops, woods, and residential acreage.

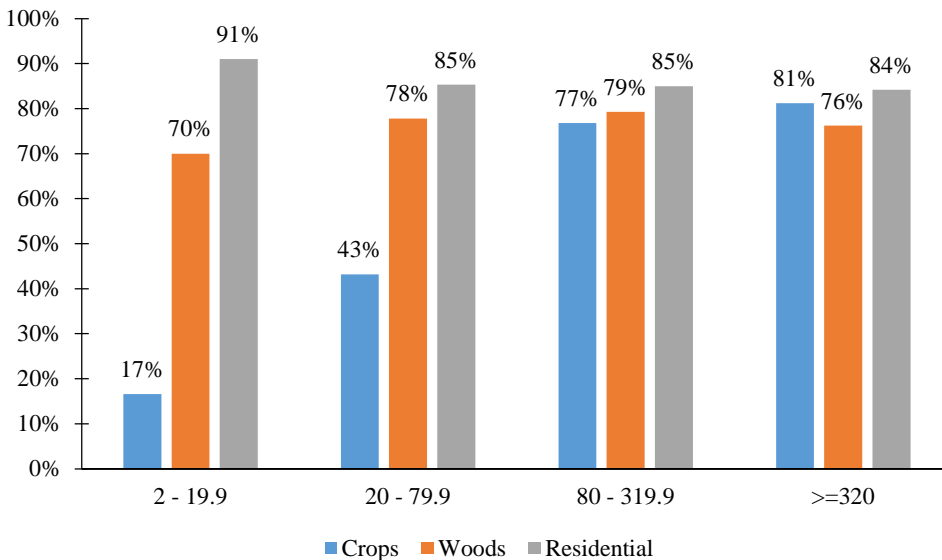


Figure 42. Percent of landowners who indicated they had damage from deer.

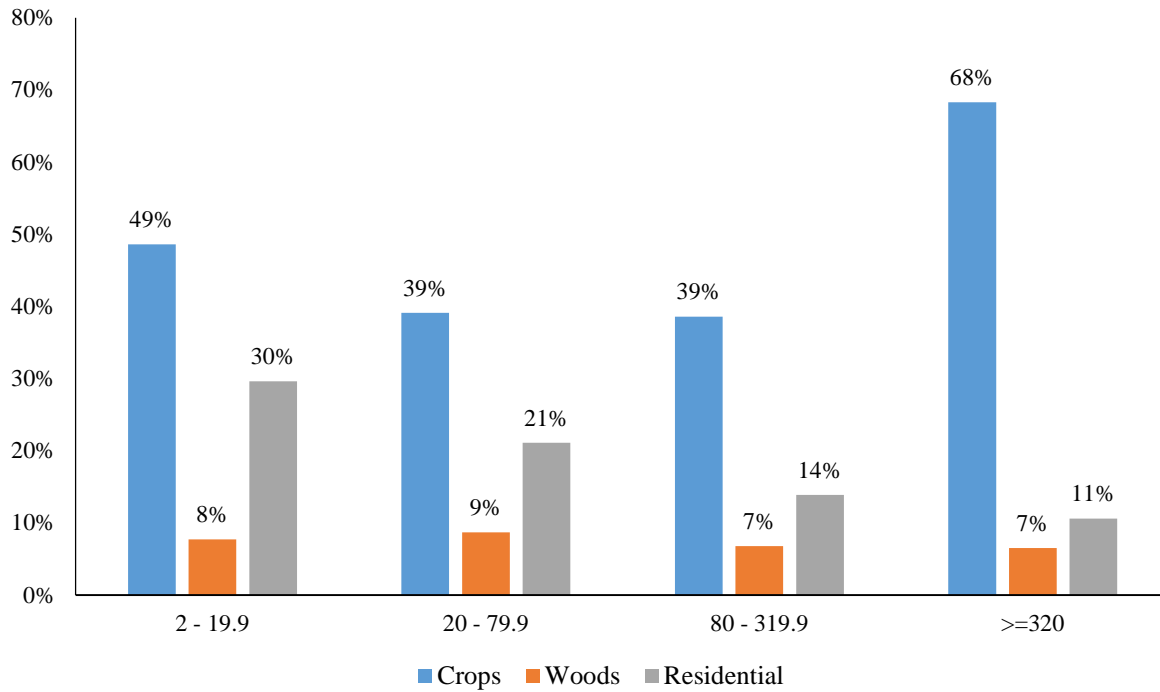
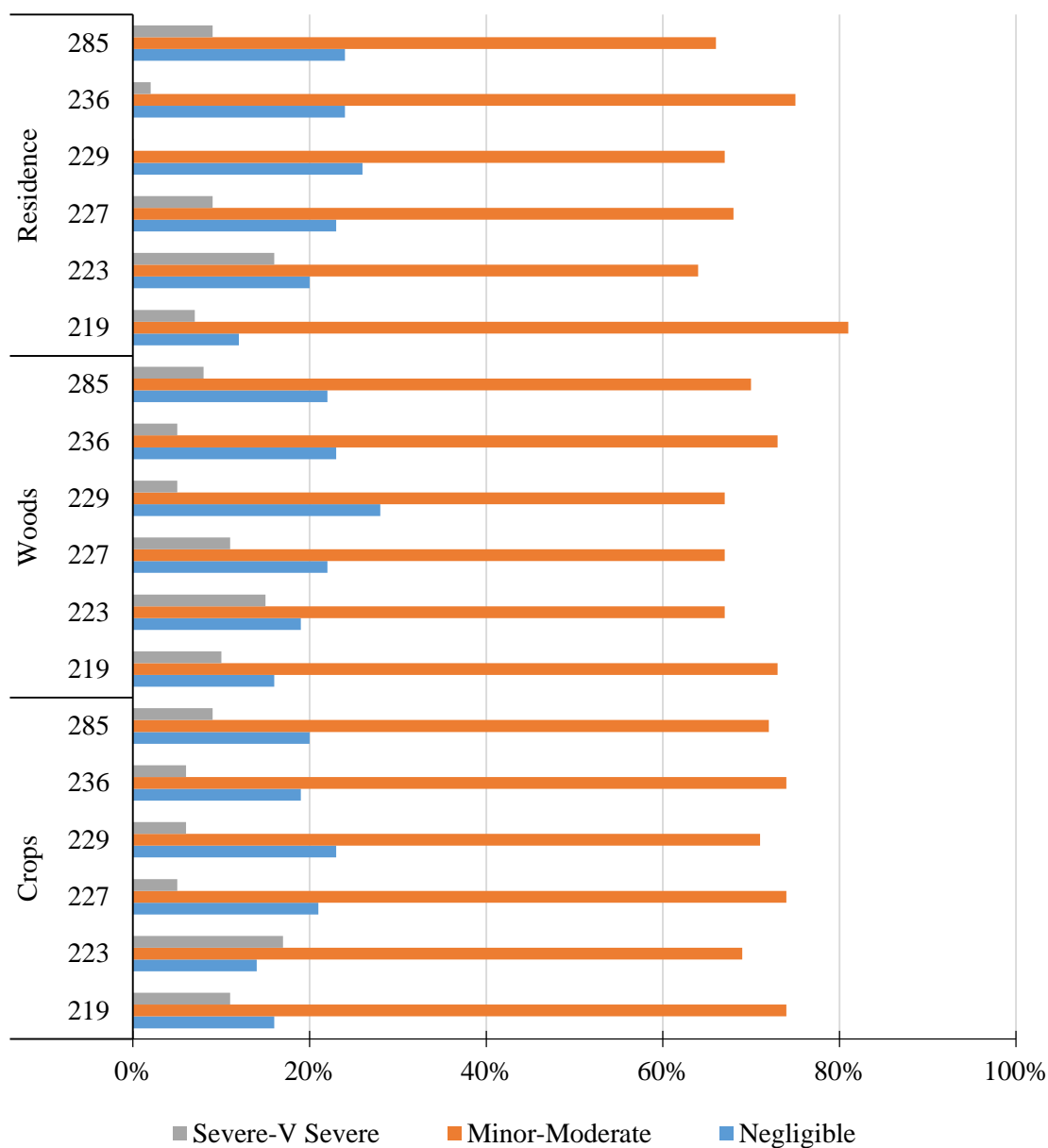


Table 66. Self-described damage caused by deer for crops, woods, and residential land types.

		Strata				Total
		2 - 19.9	20 - 79.9	80 - 319.9	>=320	
Crops	Negligible	24%	20%	21%	13%	19%
	Minor	62%	43%	52%	54%	51%
	Moderate	10%	28%	19%	22%	21%
	Severe	5%	8%	5%	10%	7%
	Very Severe	0%	0%	3%	2%	2%
Woods	Negligible	29%	25%	19%	12%	21%
	Minor	41%	48%	51%	55%	49%
	Moderate	19%	20%	22%	21%	20%
	Severe	7%	5%	5%	10%	6%
	Very Severe	4%	2%	3%	2%	3%
Residential	Negligible	25%	23%	22%	13%	21%
	Minor	47%	48%	49%	52%	49%
	Moderate	18%	23%	22%	23%	21%
	Severe	7%	5%	6%	10%	7%
	Very Severe	3%	1%	2%	2%	2%

Figure 43. Reported damage to crops, woods, and residential acreage, by deer permit area.



Population trends and perceptions about deer populations

Respondents were asked to indicate their perceptions of deer population trends over the last 5 years. Overall, 47% (41% non-hunters, 55% hunters) of respondents indicated there were fewer deer than 5 years ago, 20% (22% non-hunters, 18% hunters) indicated more, and 33% (37% non-hunters, 27% hunters) believed populations were the same. We found no statistical differences among deer areas in attitudes towards population trends (Table 10). Respondents were also asked for their perceptions of total deer population size as rated by ‘too low’, ‘about right’, or ‘too high’. Non-hunting landowners were more likely to indicate the deer population was ‘about

right' (62% vs. 42%), while hunters were more likely to indicate populations were 'too low' (50% vs 22%). Non-hunters were more likely to indicate the population was 'too high' (8.3% hunters, 17% non-hunters). Similar patterns were detected by deer area in that hunting landowners were more likely to express different population desires than non-hunting landowners (Table 11). Respondents were also asked to indicate their desires for future deer population densities and 43% wanted to see an increase in deer densities at some level (Table 12, Figure 7). We also observed clear differences between hunting and non-hunting landowners with hunting landowners indicating stronger preferences for higher deer populations (Table 13; Figure 8).

Table 67. Perceptions of landowner deer population trends over the last 5 years, by deer area.

Deer Area	Lower		The Same		Higher	
	N	Percent	N	Percent	N	Percent
219	66	49%	43	32%	27	20%
223	55	40%	50	36%	33	24%
227	71	43%	60	36%	34	21%
229	45	47%	31	33%	19	20%
236	61	61%	25	25%	14	14%
285	96	48%	63	31%	43	21%
Total	394	47%	272	33%	170	20%

Table 68. Landowner beliefs about current deer population densities, by deer area and whether or not they hunted.

Hunt	Deer Area	N	Too low	N	About right	N	Too high
No (57%)	219	15	23%	34	52%	16	25%
	223	7	13%	43	77%	6	11%
	227	21	23%	61	66%	11	12%
	229	11	21%	31	60%	10	19%
	236	8	13%	42	66%	14	22%
	285	34	29%	66	56%	17	15%
	Sum	96	22%	277	62%	74	17%
Yes (43%)	219	31	47%	29	44%	6	9%
	223	33	42%	42	53%	4	5%
	227	30	45%	28	42%	9	13%
	229	21	50%	20	48%	1	2%
	236	21	64%	9	27%	3	9%
	285	48	57%	29	35%	7	8%
	Sum	184	50%	157	42%	30	8%
Total	219	46	35%	63	48%	22	17%
	223	40	30%	85	63%	10	7%
	227	51	32%	89	56%	20	13%
	229	32	34%	51	54%	11	12%
	236	29	30%	51	53%	17	18%
	285	82	41%	95	47%	24	12%
	Total	280	34%	434	53%	104	13%

Table 69. Preferred landowner population trends, by deer area.

(a) by individual response

Deer Area	Dec 50%	Dec 25%	Dec 10%	No Change	Inc 10%	Inc 25%	Inc 50%
219	4%	9%	6%	34%	24%	18%	6%
223	2%	5%	6%	47%	20%	14%	7%
227	2%	4%	11%	40%	23%	12%	8%
229	4%	7%	4%	39%	20%	19%	5%
236	5%	7%	7%	41%	19%	14%	6%
285	2%	8%	7%	39%	18%	20%	9%
Total	3%	7%	7%	40%	20%	16%	7%

(b) Summarized by decrease, stay the same, increase

Deer Area	Decrease	Same	Increase
219	19%	34%	48%
223	13%	47%	41%
227	17%	40%	43%
229	15%	39%	44%
236	19%	41%	39%
285	17%	39%	47%
Total	17%	40%	43%

Figure 44. Graphical representation of desired deer population trends for landowners.

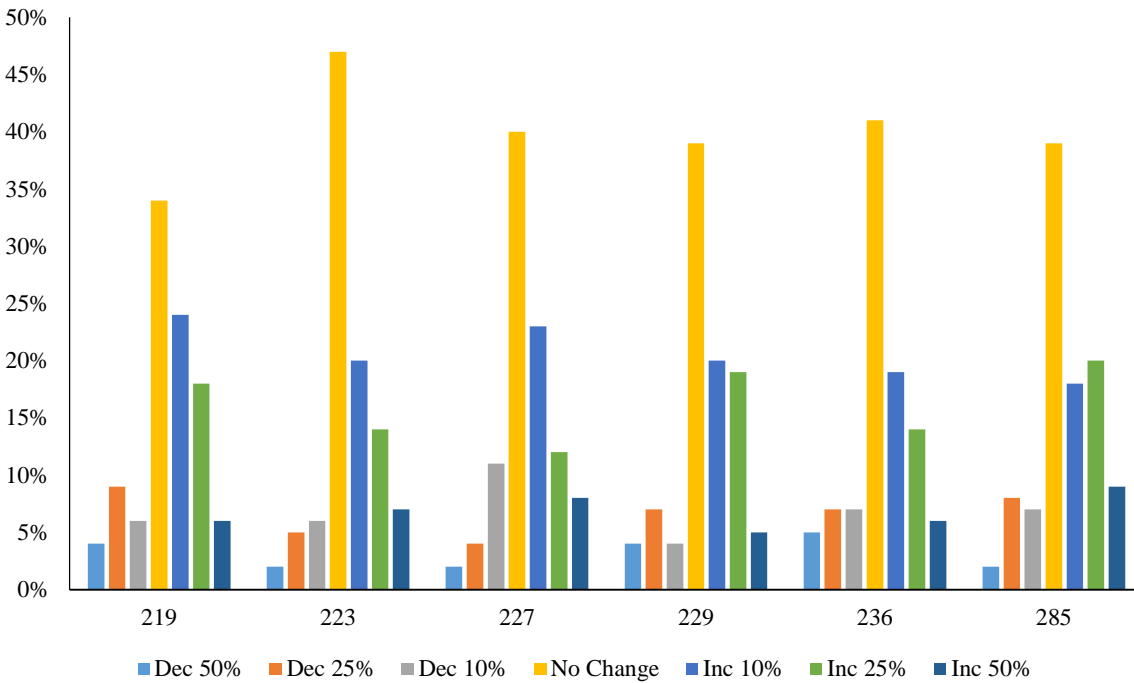
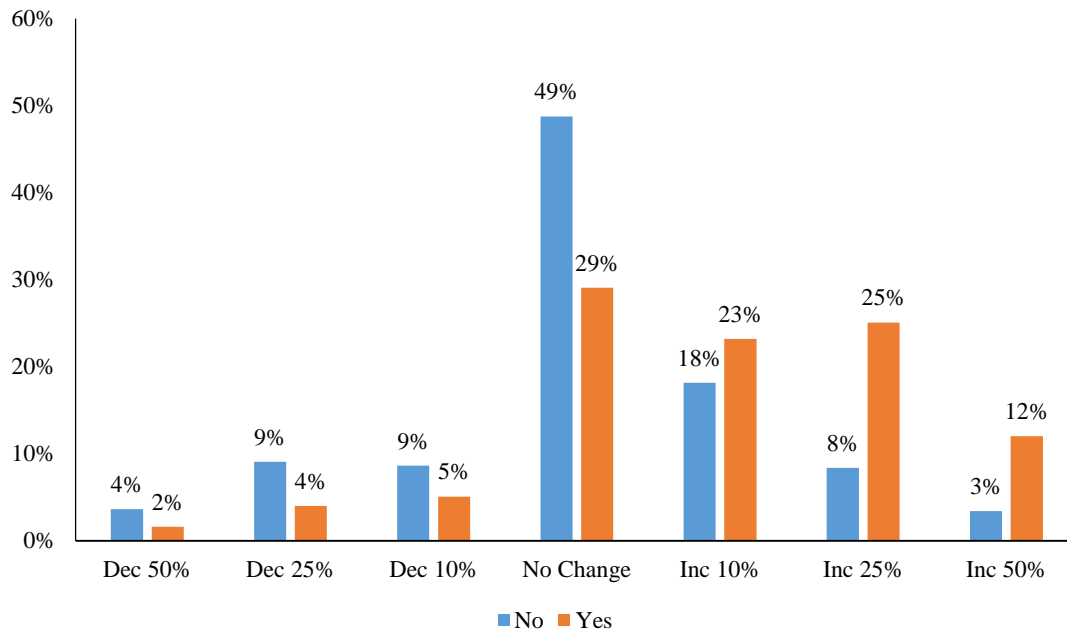


Table 70. Desired deer population trends for landowners, by deer area and whether or not they hunted.

Hunt	Deer Area	Dec 50%	Dec 25%	Dec 10%	No Change	Inc 10%	Inc 25%	Inc 50%
No (57%)	219	6%	17%	6%	36%	25%	6%	3%
	223	2%	7%	7%	62%	15%	5%	2%
	227	1%	4%	12%	49%	19%	10%	4%
	229	8%	12%	6%	50%	15%	8%	2%
	236	5%	8%	11%	51%	16%	5%	5%
	285	3%	9%	8%	47%	18%	12%	3%
	Total		4%	9%	9%	49%	18%	8%
Yes (43%)	219	1%	1%	6%	31%	22%	28%	9%
	223	1%	4%	5%	36%	24%	19%	10%
	227	3%	4%	9%	28%	29%	14%	13%
	229	0%	2%	2%	26%	26%	33%	10%
	236	6%	6%	0%	24%	24%	32%	9%
	285	0%	6%	5%	26%	17%	30%	17%
	Total		2%	4%	5%	29%	23%	25%

Figure 45. Graphical representation of landowner desires for future deer populations, by whether or not they hunted.



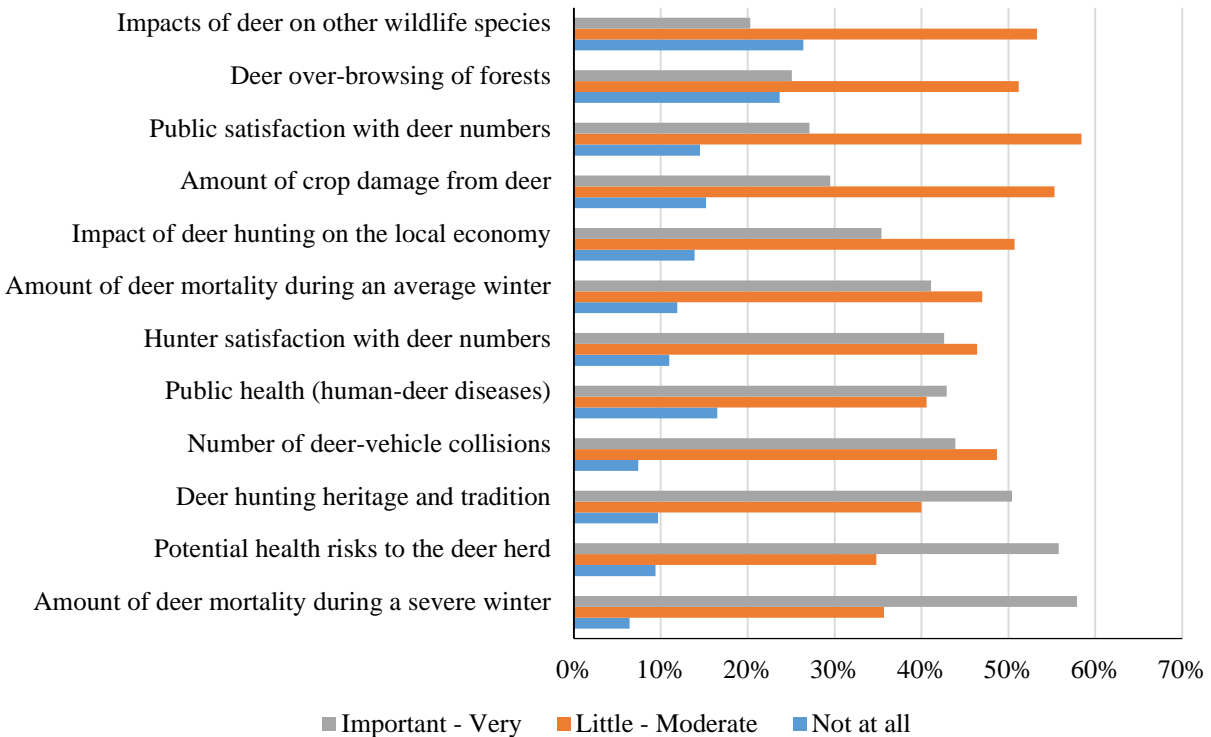
Consideration when setting deer population goals

Respondents were also asked to rate the importance of 12 items when setting deer population goals. The scale ranges from ‘not at all important’ to ‘very important’ and covered a range of items that would lead to both higher and lower deer populations. Deer mortality during a severe winter, disease risks to deer, and hunting tradition were the 3 most important considerations for landowner. Impacts of deer on other species, deer over-browsing, and public health comprised had the lowest relative importance (Table 14; Figure 9).

Table 71. Importance of items landowners indicated should be considered when setting deer population goals.

Item	Relative Importance				
	Not at all	little	Moderately	Important	Very
Amount of deer mortality during an average winter	12%	17%	31%	31%	10%
Amount of deer mortality during a severe winter	6%	15%	21%	32%	26%
Deer over-browsing of forests	24%	26%	25%	20%	5%
Public satisfaction with deer numbers	15%	25%	34%	21%	6%
Hunter satisfaction with deer numbers	11%	17%	29%	27%	16%
Number of deer-vehicle collisions	7%	20%	28%	26%	18%
Amount of crop damage from deer	15%	28%	28%	21%	8%
Impacts of deer on other wildlife species	26%	25%	28%	16%	4%
Potential health risks to the deer herd	9%	15%	20%	33%	23%
Public health (human-deer diseases)	17%	20%	21%	24%	19%
Deer hunting heritage and tradition	10%	14%	26%	27%	23%
Impact of deer hunting on the local economy	14%	22%	29%	23%	12%

Figure 46. Graphical importance of items that should be considered when setting deer population goals as defined by landowners. Items were consolidated into 3 groups and ranked from low to high by highest importance.



Appendix A. Sand Plain – Big Woods (Block G5) hunter survey

2014 Survey of Minnesota Deer Hunters: Population Management

The Minnesota Department of Natural Resources will be evaluating deer population goals in east-central Minnesota this year. An important component of this project is to collect information from deer hunters regarding their opinions towards deer populations. You have been selected at random to participate in this survey. Please take a few moments to answer the questions below. Your responses will help guide deer population goals in the area you hunt. This survey should take less than 10 minutes to complete.

15. Please check the boxes below to report if you hunted deer in Minnesota during the 2011, 2012 or 2013 Minnesota deer season. *(Please check all that apply).*

- 2011 | 2012 | 2013
 I did not hunt deer any of these years → Please skip to Question 13

16. Minnesota allows people to hunt deer during all 3 seasons. For the most recent year you hunted, which seasons did you participate? Please mark 'Yes' if you hunted a season and also estimate the number of days you hunted.

Season	Yes	No	If Yes, Number of Days
Archery	<input type="checkbox"/>	<input type="checkbox"/>	_____
Firearm	<input type="checkbox"/>	<input type="checkbox"/>	_____
Muzzleloader	<input type="checkbox"/>	<input type="checkbox"/>	_____

17. Which **ONE** deer permit area did you hunt most often during the most recent deer season you hunted?

- 219 | 223 | 224 | 227 | 229 | 235 | 236 | 285 | I hunted a permit area not listed

18. If you did not hunt one of the permit areas listed above, please tell us which one you hunted most often:
 _____ Area Number

19. Including 2013, how many years have you hunted deer in the permit area you hunt most often?
 _____ Years

20. Including 2013, how many years have you been hunting deer in Minnesota? _____ Years

21. How much of your deer hunting did you do on each of the following types of land during your most recent deer hunting season? *(Please circle one item from each row.)*

	None	Some	Most	All
Private land that I own	1	2	3	4
Private land that I lease for hunting	1	2	3	4
Private land that I do not own or lease	1	2	3	4
Public land	1	2	3	4

22. Please indicate if there are any deer harvest restrictions on the property you hunt most often.

- Antlerless harvest is restricted, but hunters can take any legal buck
- Buck harvest restricted to large antlered bucks, but hunters can take any antlerless deer
- Buck harvest restricted to large antlered bucks, and antlerless harvest is also restricted
- No restrictions on the type of deer that can be harvested
- Other (please explain): _____

23. Please indicate whether you agree or disagree with the following statements regarding your most recent deer hunt. (Please circle one number for each statement below).

	Strongly Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Strongly Agree
I was satisfied with the number of legal bucks	1	2	3	4	5
I was satisfied with the quality of bucks	1	2	3	4	5
I heard about or saw legal bucks while hunting	1	2	3	4	5
I was satisfied with the number of antlerless deer	1	2	3	4	5
I was satisfied with the number of deer I saw while hunting	1	2	3	4	5

24. Will you shoot an antlerless deer if given the opportunity?

- Yes
- No

25. Over the past 5 years, what trend have you seen in the deer population in the permit area you hunt most often?

- Much fewer deer now than 5 years ago
- Slightly fewer deer now than 5 years ago
- About the same number of deer as 5 years ago
- Slightly more deer now than 5 years ago
- Many more deer now than 5 years ago

26. In thinking about the deer permit area you hunt, please indicate your overall satisfaction with current deer numbers.

- Very Dissatisfied
- Slightly Dissatisfied
- Neither Dissatisfied nor Satisfied
- Slightly Satisfied
- Very Satisfied

27. How much importance should we assign to each of the following considerations when setting deer population goals? (*Please circle one number for each statement below*).

	Not at all Important	A little Important	Moderately Important	Important	Very Important
Amount of deer mortality during an average winter	1	2	3	4	5
Amount of deer mortality during a severe winter	1	2	3	4	5
Potential health risks to the deer herd	1	2	3	4	5
Public health (human-deer diseases)	1	2	3	4	5
Amount of crop damage from deer	1	2	3	4	5
Number of deer-vehicle collisions	1	2	3	4	5
Deer over-browsing of forests	1	2	3	4	5
Impacts of deer on other wildlife species	1	2	3	4	5
Deer hunting heritage and tradition	1	2	3	4	5
Hunter satisfaction with deer numbers	1	2	3	4	5
Public satisfaction with deer numbers	1	2	3	4	5
Impact of deer hunting on the local economy	1	2	3	4	5

28. Please identify up to 3 other factors that you believe are important and should be considered when setting deer population goals.

- A. _____
- B. _____
- C. _____

32. In thinking about the deer permit area you hunt, would you say the deer population is,

- Much too Low Too Low About Right Too High Much too High

33. In thinking about the property you hunt 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 | Decrease | Decrease | No Change | Increase | Increase | Increase |
| Population | Population | Population | | Population | Population | Population |
| 50% | 25% | 10% | | 10% | 25% | 50% |
| (Significant) | (Moderate) | (Slight) | | (Slight) | (Moderate) | (Significant) |

34. 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? (*Check one*)

- Strongly Oppose
- Slightly Oppose
- Neither Oppose nor Support
- Slightly Support
- Strongly Support

35. Please let us know how you feel about the Minnesota Department of Natural Resources. (*Please circle one response for each of the following statements.*)

	Strongly Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Strongly Agree
The MnDNR does a good job of managing deer in Minnesota.	1	2	3	4	5
When deciding about deer management in Minnesota, the MnDNR will be open and honest in the things they do and say.	1	2	3	4	5
The MnDNR can be trusted to make decisions about deer management that are good for the resource.	1	2	3	4	5
The MnDNR will make decisions about deer management in a way that is fair.	1	2	3	4	5
The MnDNR has deer managers and biologists who are well-trained for their jobs.	1	2	3	4	5
The MnDNR listens to the concerns of deer hunters.	1	2	3	4	5

36. What is your gender?

- Male
- Female

37. What year were you born? _____ (*Please use the 4 digit year*).

If you would be willing to respond to additional questions about deer management and hunting in Minnesota and are willing to provide your email address, please write it below. We will only use your email address for research related to deer management and will not share it with anyone.

E-mail address: _____

2014 Survey of Minnesota Landowners: Deer Management

The Minnesota Department of Natural Resources will be evaluating deer population goals in east-central Minnesota this year. An important component of this project is to collect information from landowners regarding their opinions towards deer populations and land management. You have been selected at random to participate in this survey. Please take a few moments to answer the questions below. This survey should take less than ten minutes to complete. Your responses will help guide deer population goals in the area you own land.

9. How many total acres did you own and/or lease at the end of 2013?

_____ Acres Owned _____ Acres Leased

10. Please make a “rough” estimate as to how many acres of your property (owned and leased) are in each of the following categories. Please also estimate the percentage of that land type you have enrolled in a State or Federal Conservation Program.

Land Type	Acres Owned	Acres Leased	% Enrolled in Conservation Program
Private Residence (house, lawns, associated buildings)			%
Woodlands (natural forest or tree plantings)			%
Brushland (including abandoned, overgrown fields)			%
Hayfields, Pasture, or Grassland			%
Wetlands			%
Row Crops			%
Small Grains			%
Orchards or Vineyards			%
Vegetables or other Truck Crops			%
Prairie (Native or Restored)			%
Wildlife Food Plots			%
Other (please list: _____)			%

11. Did you experience deer damage to land that you own or leased in 2013?

Crops	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<p>IF ALL ARE <u>NO</u> PLEASE SKIP TO QUESTION 6</p>
Woodlands	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Landscaping	<input type="checkbox"/> Yes	<input type="checkbox"/> No	

12. How would you describe the total amount of deer damage you experienced in 2013? (*Check one*)

Negligible Minor Moderate Severe Very Severe

13. How would you compare the amount of deer damage you experienced in 2013 to what you experienced 5 years ago? (*Check one*)

- Much less damage than 5 years ago
- Slightly less damage than 5 years ago
- About the same damage as 5 years ago
- Slightly more damage than 5 years ago
- Much more damage than 5 years ago
- I was not farming/managing lands 5 years ago

14. Over the past 5 years, what trend have you seen in the deer population in the area of your property? (Check one)

- Much fewer deer now than 5 years ago
- Slightly fewer deer now than 5 years ago
- About the same number of deer now as 5 years ago
- Slightly more deer now than 5 years ago
- Many more deer now than 5 years ago

15. In thinking about your property and the surrounding area, please indicate your overall satisfaction with current deer numbers. (Check one)

- Very Dissatisfied
- Slightly Dissatisfied
- Neither Dissatisfied nor Satisfied
- Slightly Satisfied
- Very Satisfied

16. How much importance should we assign to each of the following considerations when setting deer population goals? (Please circle one number for each statement below)

	Not at all Important	A little Important	Moderately Important	Important	Very Important
Amount of deer mortality during an average winter	1	2	3	4	5
Amount of deer mortality during a severe winter	1	2	3	4	5
Potential health risks to the deer herd such as chronic wasting disease	1	2	3	4	5
Public health (human-deer diseases)	1	2	3	4	5
Amount of crop damage from deer	1	2	3	4	5
Number of deer-vehicle collisions	1	2	3	4	5
Deer over-browsing of forests	1	2	3	4	5
Impacts of deer on other wildlife species	1	2	3	4	5
Deer hunting heritage and tradition	1	2	3	4	5
Hunter satisfaction with deer numbers	1	2	3	4	5
Public satisfaction with deer numbers	1	2	3	4	5
Impact of deer hunting on the local economy	1	2	3	4	5

12. Please identify up to 3 other factors that you believe are important and should be considered when setting deer population goals.

- A. _____
- B. _____
- C. _____

47. In thinking about your property and the surrounding area, would you say the deer population is, (Check one)

- Much too Low
- Too Low
- About Right
- Too High
- Much too High

48. 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 Population 50% (Significant)	Decrease Population 25% (Moderate)	Decrease Population 10% (Slight)	No Change	Increase Population 10% (Slight)	Increase Population 25% (Moderate)	Increase Population 50% (Significant)

49. Did you allow hunting on your property during the 2013 deer season? *(Check only one)*

- Yes
- No → PLEASE SKIP TO QUESTION 16

50. Do you lease any of your property for deer hunting?

- Yes
- No

51. 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 2013.

- | | | |
|---|--|--|
| <input type="checkbox"/> Myself or family members _____ people
<input type="checkbox"/> Friends or neighbors _____ people
<input type="checkbox"/> Other (please list: _____) _____ people | | <input type="checkbox"/> Strangers who ask permission _____ people
<input type="checkbox"/> People who lease my property _____ people |
|---|--|--|

52. Please indicate if you impose any deer harvest restrictions on your property. *(Please check one only)*

- Antlerless harvest is restricted, but hunters can take any legal buck
- Buck harvest restricted to large antlered bucks, but hunters can take any antlerless deer
- Buck harvest restricted to large antlered bucks, and antlerless harvest is also restricted
- No restrictions on the type of deer that can be harvested
- Other (please list: _____)

53. Please check the boxes below if you hunted deer in Minnesota during the 2011, 2012 or 2013 Minnesota deer season? *(Please check all that apply)*

- 2011 | 2012 | 2013
- I hunt deer but did not hunt any of these years → Please skip to Question 20
- I do not hunt deer at all → Please skip to Question 21

54. Which **ONE** deer permit area did you hunt most often during the most recent deer season you hunted?

- 219 | 223 | 224 | 227 | 229 | 235 | 236 | 285 | I hunted a permit area not listed

55. If you did not hunt one of the permit areas listed above, please tell us which one you hunted most often:

_____ Area Number

56. 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 row)

	None	Some	Most	All
Private land that I own	1	2	3	4
Private land that I lease for hunting	1	2	3	4
Private land that I do not own or lease	1	2	3	4
Public land	1	2	3	4

57. Including 2013, how many years have you been hunting deer in Minnesota? _____ Years.

58. To what extent would you support or oppose a regulation that would increase the proportion of antlered bucks in the area you own property? (Check one)

- Strongly Oppose
- Slightly Oppose
- Neither Oppose nor Support
- Slightly Support
- Strongly Support

26. Please let us know how you feel about the Minnesota Department of Natural Resources. (Please circle one response for each of the following statements.)

	Strongly Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Strongly Agree
The MnDNR does a good job of managing deer in Minnesota.	1	2	3	4	5
When deciding about deer management in Minnesota, the MnDNR will be open and honest in the things they do and say.	1	2	3	4	5
The MnDNR can be trusted to make decisions about deer management that are good for the resource.	1	2	3	4	5
The MnDNR will make decisions about deer management in a way that is fair.	1	2	3	4	5
The MnDNR has deer managers and biologists who are well-trained for their jobs.	1	2	3	4	5
The MnDNR listens to the concerns of landowners.	1	2	3	4	5

32. What is your gender?

- Male
- Female

33. What year were you born? _____ (Please use the 4 digit year)

If you would be willing to respond to additional questions about deer management and hunting in Minnesota and are willing to provide your email address, please write it below. We will only use your email address for research related to deer management and will not share it with anyone.

E-mail address: _____