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MNDNR

Sand Plain – Big Woods

Deer Goal Setting – Block G5

Landowner and Hunter Survey Results

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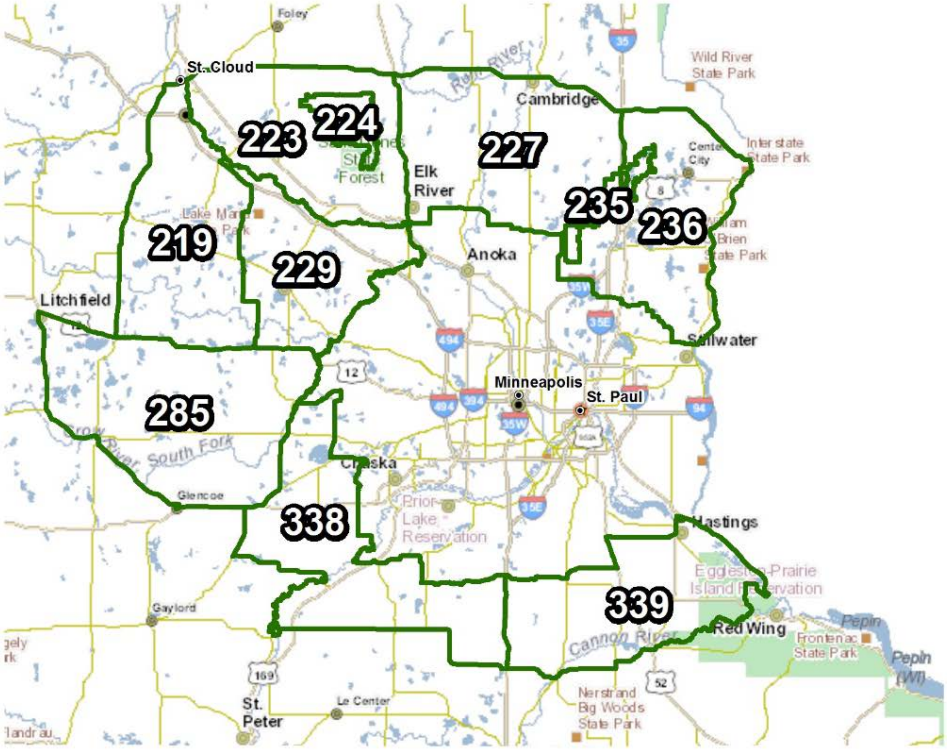
Public Surveys for Deer Goal Setting

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

		Desired Population Trend		
Type of land hunted		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 2. Hunter perceptions of deer population trends over the last 5 years, by deer permit area.

	Lower		The Same		Higher	
Deer Area	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 3. Hunter beliefs about current deer population densities, by deer area.

	Too Low		About Right		Too High	
Deer Area	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 4. Deer population trend preferences for hunters, by deer permit area.

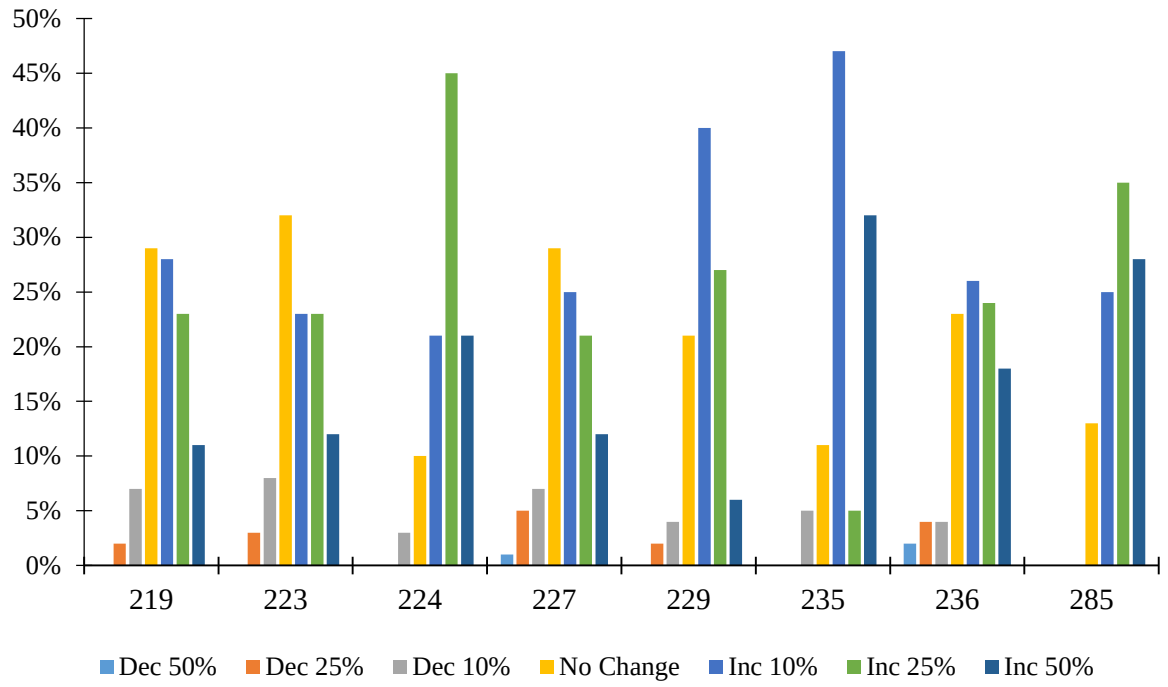
(a) By individual response

Deer Area	Dec 50%	Dec 25%	Dec 10%	No Change	Inc 10%	Inc 25%	Inc 50%
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 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. 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).

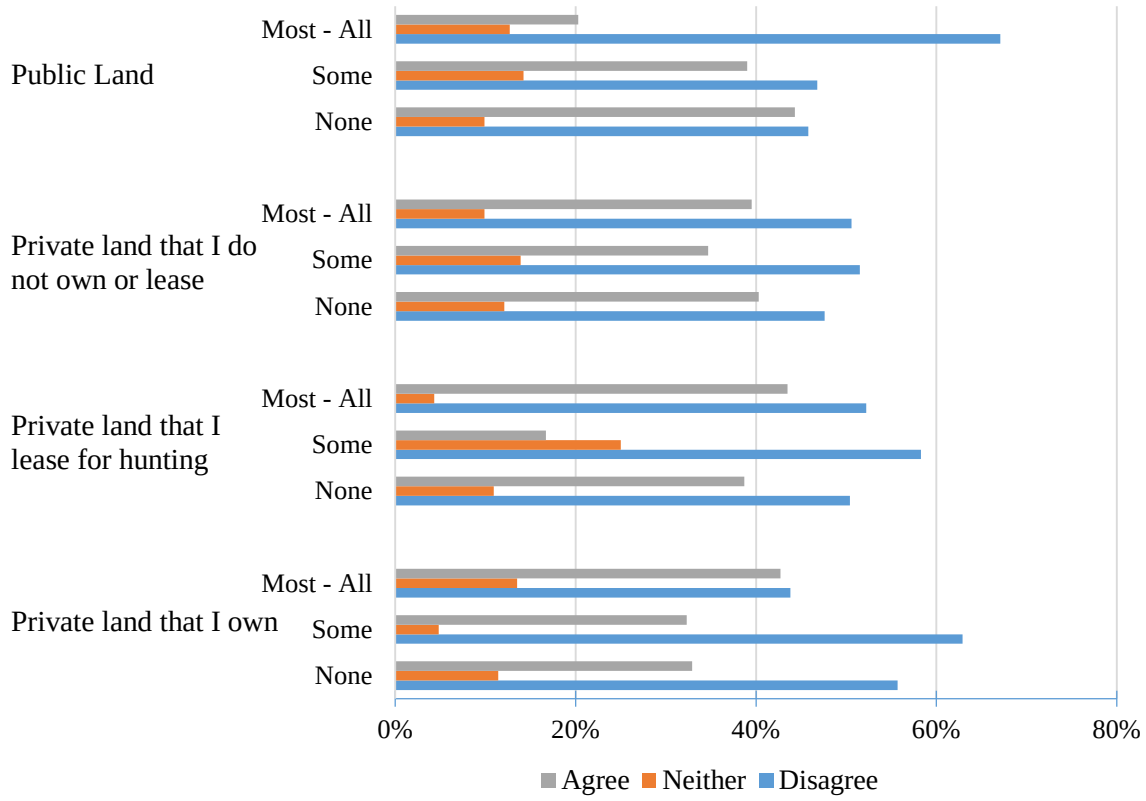
Table 5. Overall hunter satisfaction with total deer numbers, by deer area.

	Dissatisfied		Neither		Satisfied	
DPA	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 6. 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 2. Hunter satisfaction with total number of deer seen, based on land type hunted.



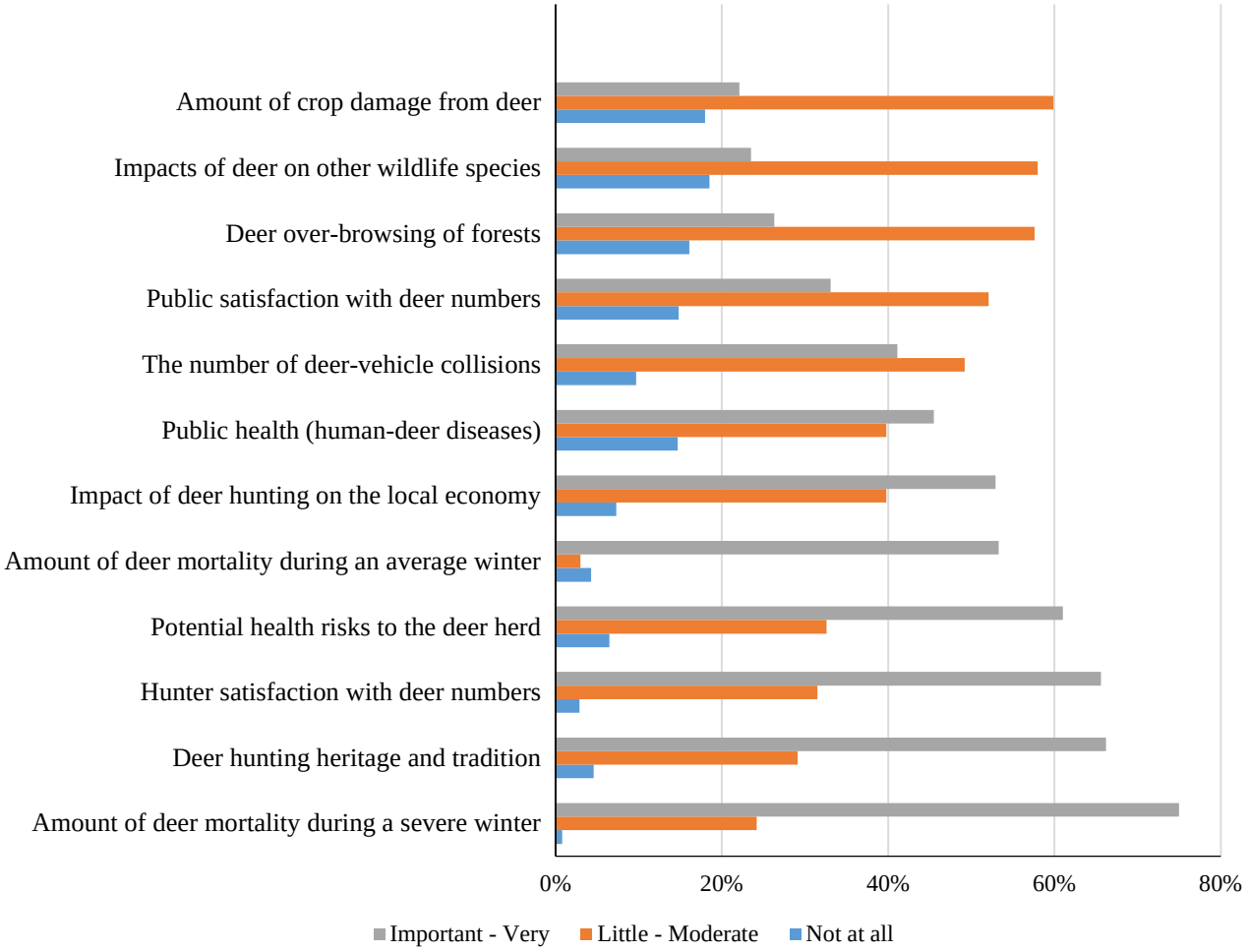
Consideration when setting deer population goals

Respondents were also asked to rate the importance of 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 7. 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 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 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%) then 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 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	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 4. Percent of landowners who owned crops, woods, and residential acreage.

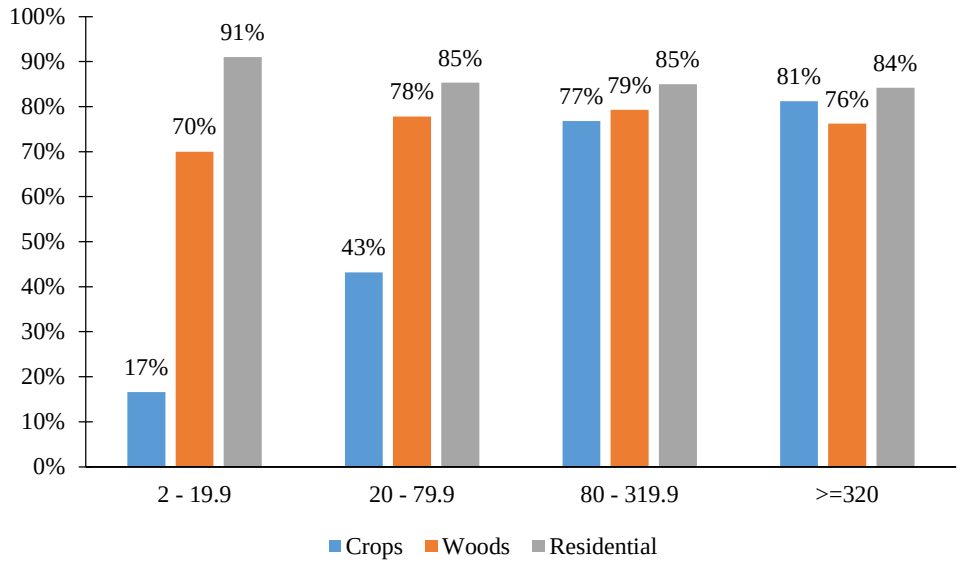


Figure 5. Percent of landowners who indicated they had damage from deer.

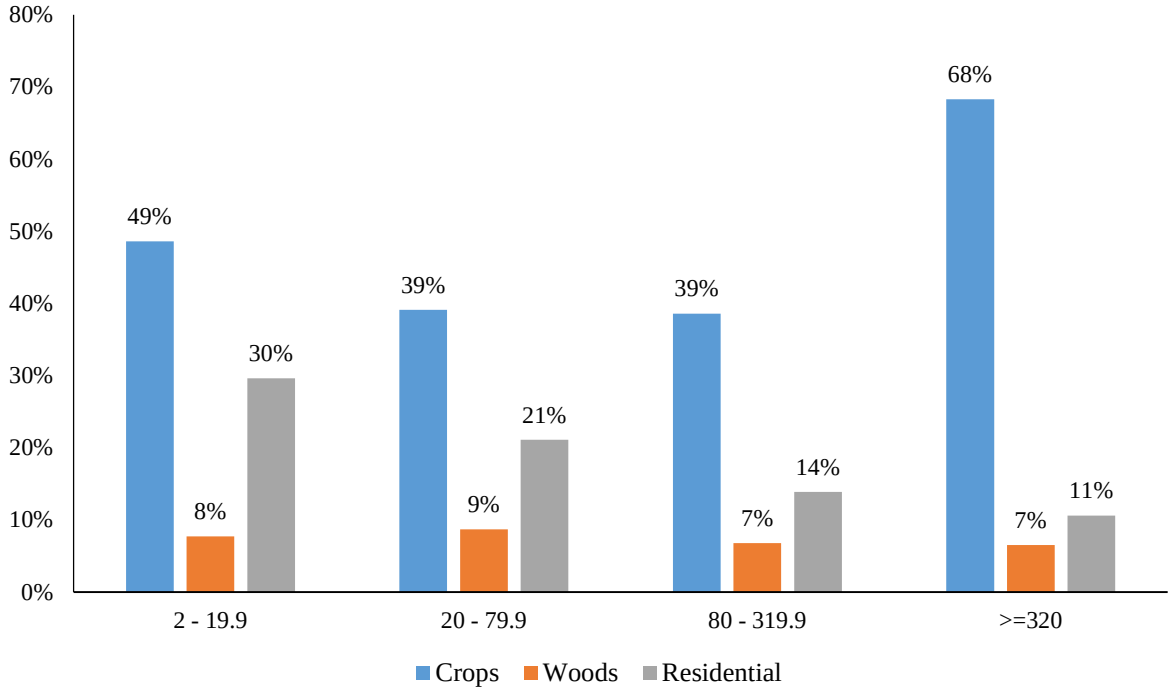
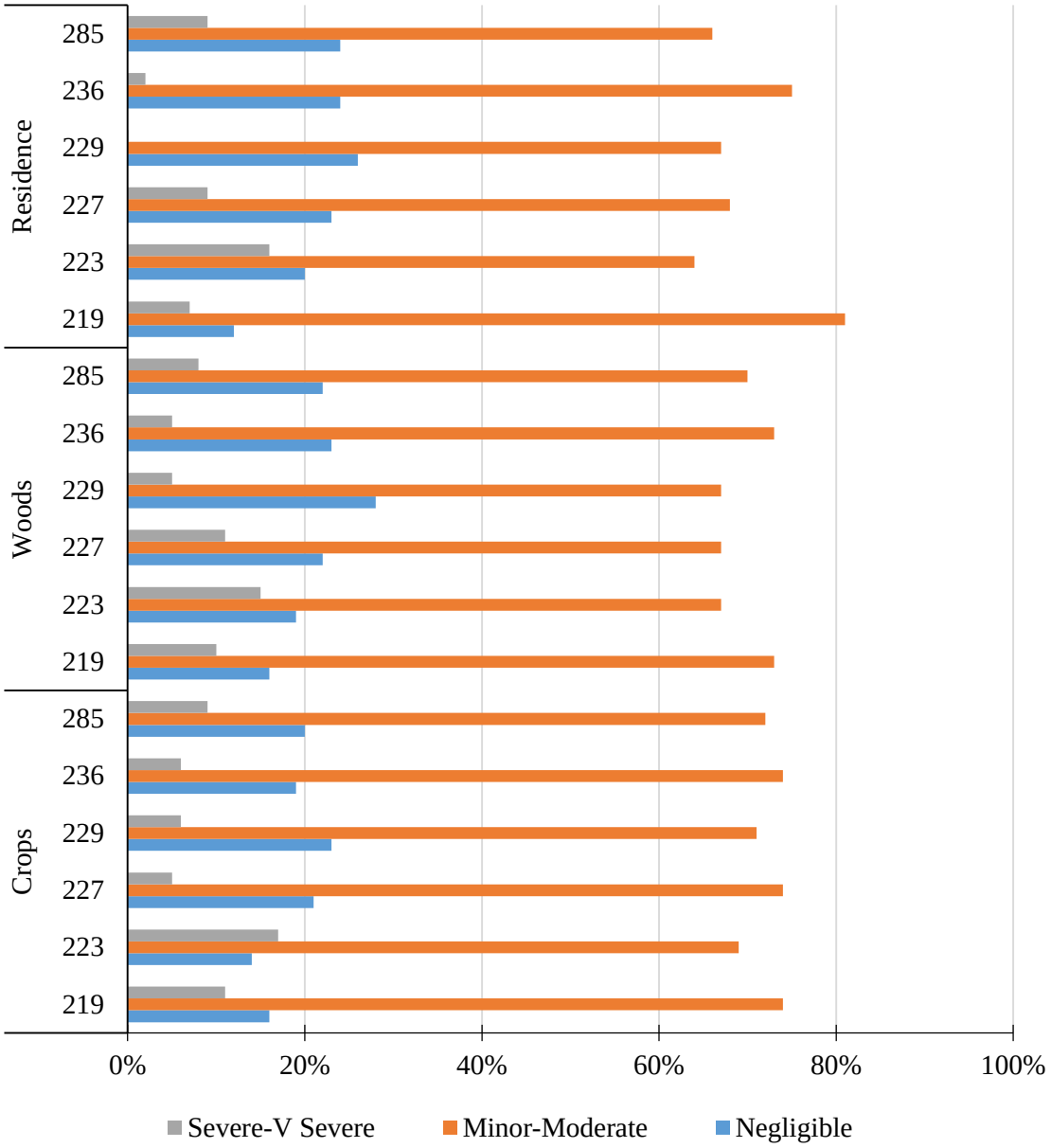


Table 9. Self-described damage caused by deer for crops, woods, and residential land types.

		Strata				
		2 - 19.9	20 - 79.9	80 - 319.9	>=320	Total
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 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, 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 10. Perceptions of landowner deer population trends over the last 5 years, by deer area.

	Lower		The Same		Higher	
Deer Area	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 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 (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 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%
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 7. Graphical representation of desired deer population trends for landowners.

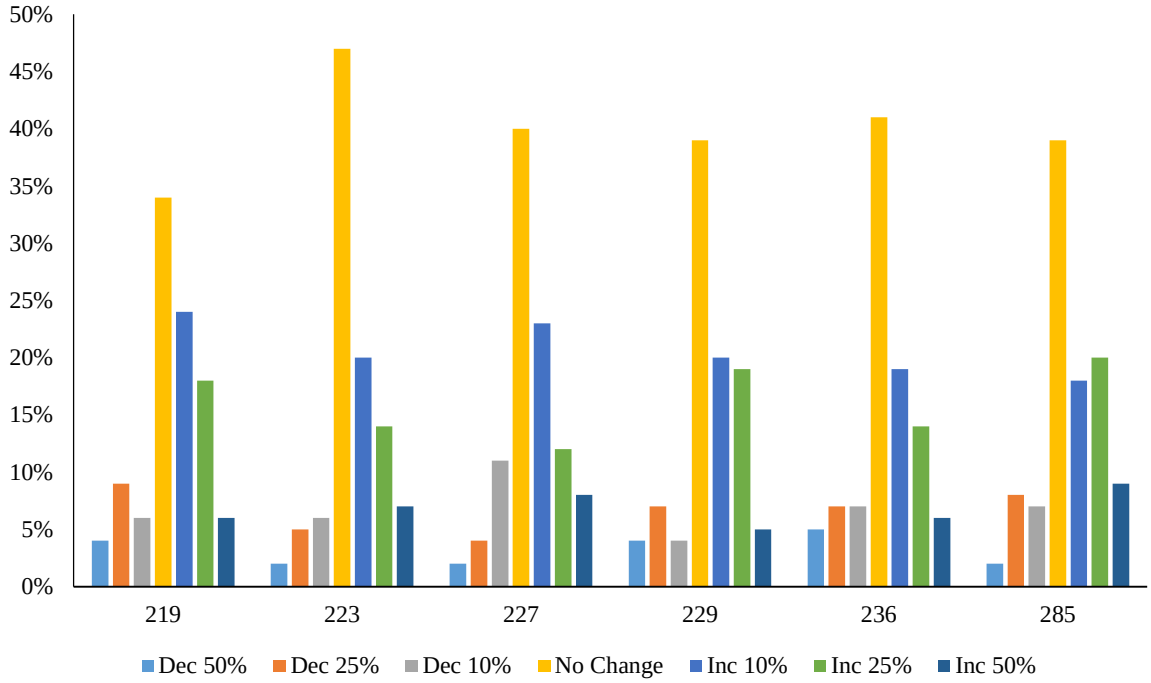
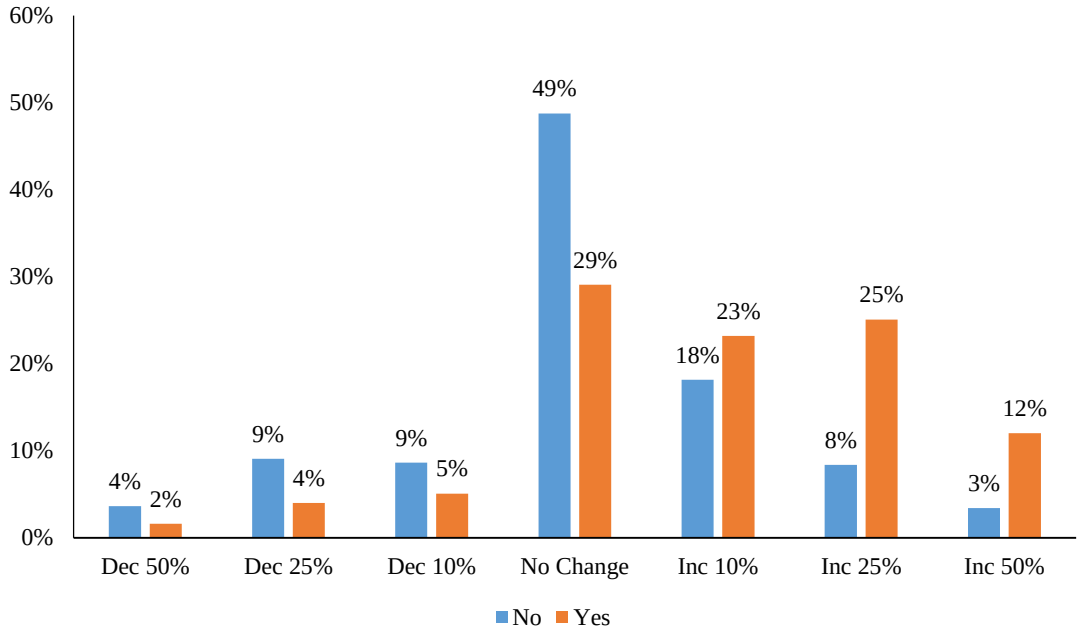


Table 13. Desired deer population trends for landowners, by deer area and whether or not they hunted.

Hunt	Deer Area	Dec 50%	Dec 25%	Dec 10%	No Change	Inc 10%	Inc 25%	Inc 50%
No (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%	3%
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%	12%

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



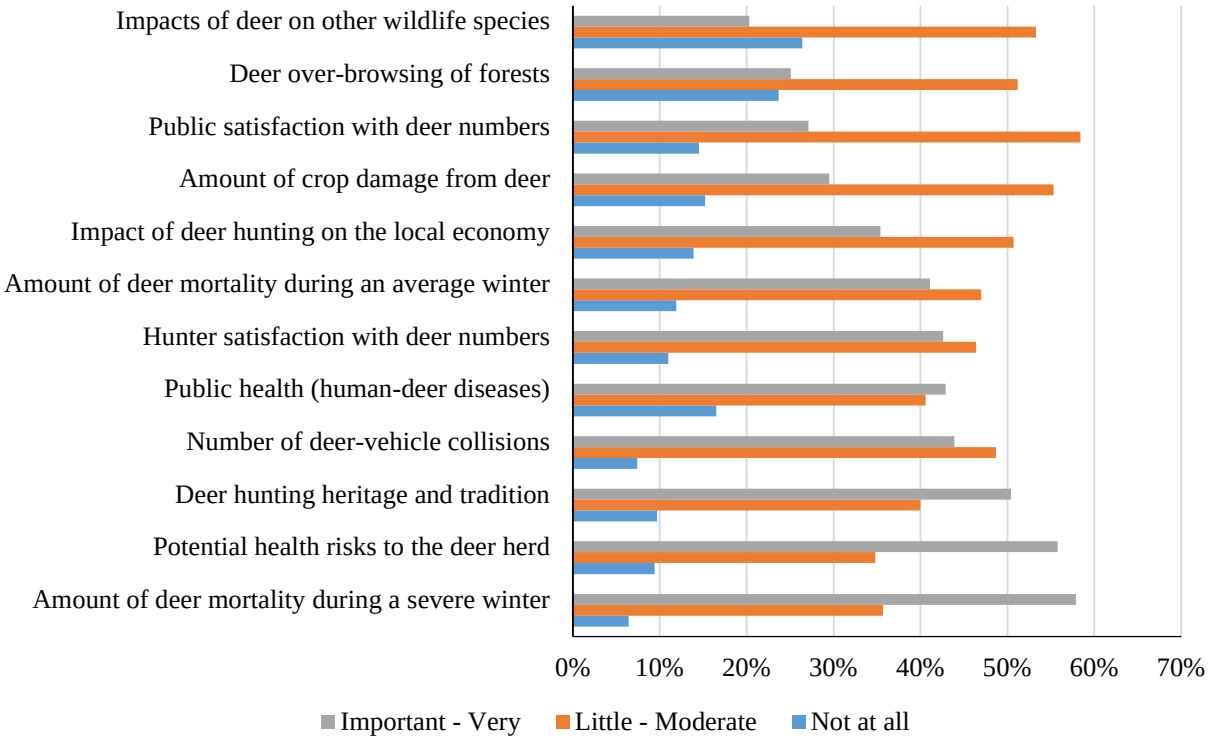
Consideration when setting deer population goals

Respondents were also asked to rate the importance of 12 items when setting deer population 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 14. Importance of items landowners indicated should be considered when setting deer population goals.

	Relative Importance				
Item	Not at all	A 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 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.



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	❒	❒	_____
Firearm	❒	❒	_____
Muzzleloader	❒	❒	_____

3. Which **ONE** deer permit area did you hunt most often during the <u>most recent</u> deer season you hunted?
   ❑ 219 | ❑ 223 | ❑ 224 | ❑ 227 | ❑ 229 | ❑ 235 | ❑ 236 | ❑ 285 | ❑ I hunted a permit area not listed

4. If you <u>did not hunt one of the permit areas</u> 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 **<u>not</u>** 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.

1) _____

2) _____

3) _____

16. 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

17. 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)

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? (*Check <u>one</u>*)

- ❑ 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 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

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. Sand Plain – Big Woods (Block G5) landowner survey.

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	❑ Yes	❑ No	
Woodlands	❑ Yes	❑ No	→ IF ALL ARE NO PLEASE SKIP TO QUESTION 6
Landscaping	❑ Yes	❑ 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

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

4) _____

5) _____

6) _____

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

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 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: _____)

17. 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

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

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

19. If you <u>did not hunt one of the permit areas</u> 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 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

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 Oppose nor Support
- ❑ Slightly Support
- ❑ Strongly Support

22. 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

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: _____