

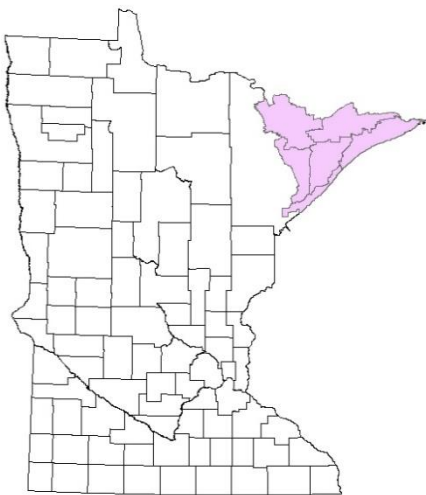


## Fish and Wildlife Division

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# Deer Goal Setting Attitude Survey Report

## Block 1: Superior Uplands/Arrowhead



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## Statement of Purpose and Scope of Data

The Minnesota Department of Natural Resources (MNDNR) periodically conducts surveys of deer hunters and landowners to assess preferences for deer populations, experiences with deer hunting, and impacts of deer populations on private property to inform the deer population goal setting process. This report details one such effort. Results of this study directly inform decision making for deer populations. We randomly selected landowners and hunters from county tax parcel records, and MNDNR deer license information respectively for participation. Therefore, the results of this study are representative of the stakeholder group, and may differ substantially from results of self-selected public input processes, as a function of the scientific study design. The values in this report are estimates of the average for all individuals within a given population of interest (e.g., hunters in a deer permit area), not just respondents to the survey.

## Data Collection Process

We conducted our surveys of hunters and landowners using a mixed mode design that included three solicitations. We sent selected participants a letter directing them to complete a questionnaire online. Non-respondents received a second letter requesting their participation, followed by a paper copy of the survey with a postage-paid self-addressed return envelope. Copies of these questionnaires are found in Appendices A and B of this report.

### Hunters

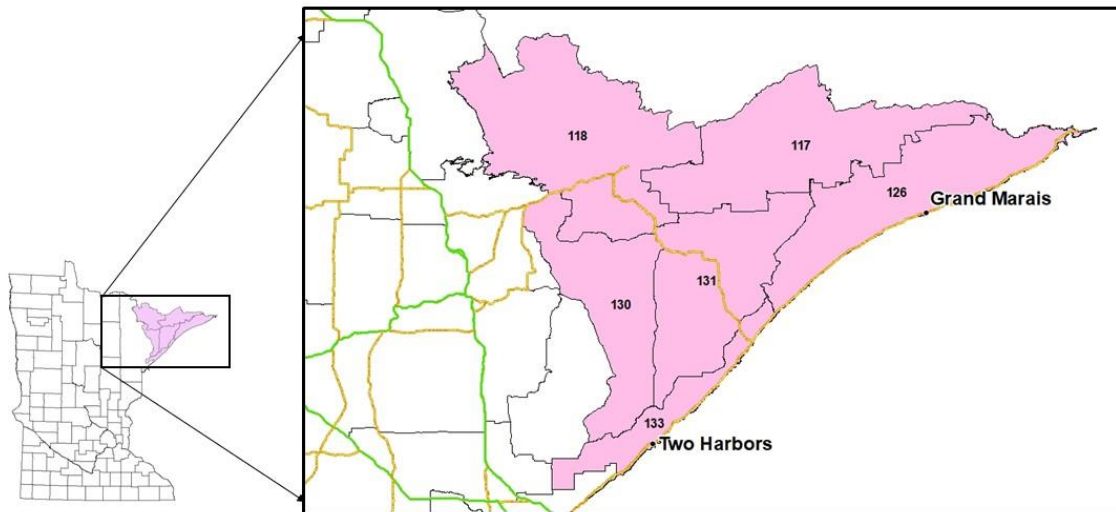
Within a deer permit area (DPA), we randomly selected hunters from the list of all firearm deer license holders in the given year to receive a goal setting survey. We only included adults over the age of 18 at the time the sample was drawn. The number of hunters selected in each DPA was determined by estimating the minimum sample size needed to make statistically valid inference about the population at the DPA level at 90% confidence. Participants may not be residents of the DPA, but have indicated that the given DPA is the primary location where they hunt deer.

### Landowners

Within a deer permit area, we randomly selected individual parcels from all parcels greater than or equal to 2 acres in size for inclusion. Stratification occurred by quantiles of parcels by acres to ensure a representative coverage of land use types and interests. Land acres strata were: 2-19, 20-79, 80-319, and  $\geq 320$  acres respectively. Similar to hunters, the number of landowners selected for each DPA was proportional to the total number of landowners in the DPA and after determining, the minimum sample size needed for statistically valid inference at the DPA scale, with 90% confidence.

## Block 1: Superior Uplands/Arrowhead

The data presented herein are from a statistically representative survey of Minnesota deer hunters and landowners in goal setting Block 1 (Superior Uplands/Arrowhead). This area includes deer permit areas: 117, 118, 126, 130, 131, and 133 in the northeast part of the state (Figure 1). Landowners in DPA 131 were not surveyed, given the very high proportion of public land in this area.



*Figure 1. Goal setting Block 1 DPA boundaries*

## Response Rates and Weighting

### Hunters

After accounting for undeliverable mail, the adjusted response rate for the Block 1 hunter sample was 47%. Response rates by DPA ranged from a low of 42% for DPA 117, to a high of 51% for DPA 130. A summary of response rates by DPA is located in Table 1.

We weighted responses in proportion to quantiles derived from the population of aged 18+ firearms deer hunters in Minnesota, during the 2020 hunting season. Respondents (M=52) were on average older than the population (M=46) from which the sample was drawn. To attend to this, we estimated population estimates according to the weight schedule presented in Table 2. Weights apply to the population rather than the block level, under an assumption that there is no correlation between age and preferred hunt location.

### Landowners

After accounting for undeliverable mail, the adjusted response rate for the Block 1 landowner sample was 50%. Response rates by DPA ranged from a low of 47% for DPA 133, to a high of 51% for DPAs 118, 126, and 130. A summary of response rates by DPA is located in Table 3.

We drew samples of landowners equally within four strata (2-19, 20-70, 80-319, and 320+) corresponding to parcel acres to ensure representation of small, medium, and large landholders, and thus, the potential array of interests associated with different land uses. We calculated weights within Block to generate estimates representative of the population according to the schedule presented in Table 4.



Table 1. Response rates for hunter samples, by DPA

DPA	Initial Sample	Undeliverable	Respondents	Adjusted sample	Raw response rate	Adjusted response rate
117	129	5	52	124	0.40	0.42
118	509	16	216	493	0.42	0.44
126	469	27	221	442	0.47	0.50
130	479	13	237	466	0.49	0.51
131	437	8	209	429	0.48	0.49
133	507	11	228	496	0.45	0.46
<b>Block Average</b>	<b>2530</b>	<b>80</b>	<b>1163</b>	<b>2450</b>	<b>0.46</b>	<b>0.47</b>

*Table 2. Population and sample proportions by age quantile, and weights*

<b>Age Quantile</b>	<b>Population Proportion</b>	<b>Sample Proportion</b>	<b>Weight*</b>
18-32	0.2423	0.1365	1.7751
33-45	0.2553	0.2098	1.2169
45-58	0.2543	0.2887	0.8801
59+	0.2481	0.3650	0.6797

\*Weight =  $1/(\text{Sample Proportion}/\text{Population Proportion})$

Table 3. Response rates for landowner samples, by DPA

DPA	Initial Sample	Undeliverable	Respondents	Adjusted sample	Raw response rate	Adjusted response rate
117	165	6	78	159	0.47	0.49
118	472	39	221	433	0.47	0.51
126	472	27	225	445	0.48	0.51
130	389	46	175	343	0.45	0.51
131	-	-	-	-	-	-
133	453	33	199	420	0.44	0.47
<b>Block average</b>	1951	151	898	1800	0.46	0.50

Table 4. Population and sample proportions by acre strata, and weights

Acres strata	Population proportion	Sample proportion	Weight*
2-19	.7088	.4688	1.5119
20-79	.2254	.3218	0.7004
80-319	.0634	.1993	0.3181
320+	.0023	.0100	0.2300

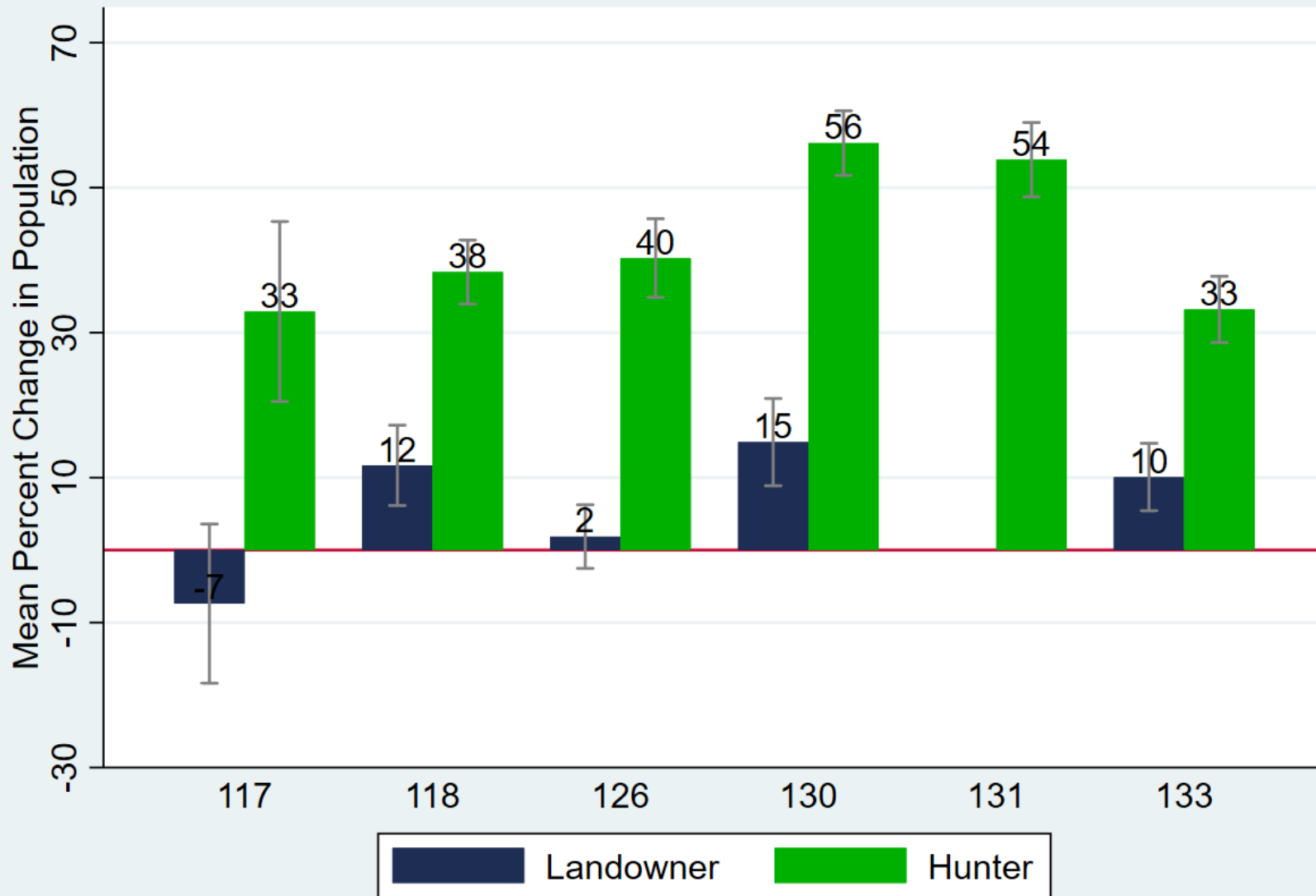
\*Weight = 1/(Sample Proportion/Population Proportion)

## Summary of Deer Population Preferences

Figure 2 contains estimates of Goal Block 1 deer hunter and landowner preferences for change in the deer population where they hunt or their property is located respectively. Values are an estimate of the mean preferred percent change to the deer population by DPA, and its 95% confidence interval. Landowners reported deer population preferences ranging from a small decrease for DPA 117 (-7%) to a moderate increase (+15%) for DPA 130. Deer hunters, on average, and regardless of DPA preferred an increase in the deer population. Estimates for deer hunters' preference for change to the deer population ranged from +33% for DPAs 117 and 133 to +56% for DPA 130.

Figures 3 through 8 contain DPA level estimates for the percent of hunters and landowners that preferred to see the deer population either decrease, stay the same, or increase. A clear majority of deer hunters, greater than 75% in all DPAs, expressed a preference for an increase in the deer population in the DPA where they hunt. Landowners, however, had more diversity in their preferences for change in the deer population. Around half of landowners in DPAs 117, 126, and 133 indicated they would like to see the deer population stay the same. Close to half of landowners in DPA 130, and 41% of landowners in DPA 118 reported desire for an increase in the deer population.

Figure 2. Landowners' and hunters' mean desired percent change in the deer population, by DPA



\*Landowners not surveyed in DPA 131

Figure 3. Deer permit area 117 deer hunters' and landowners' preference for future deer population

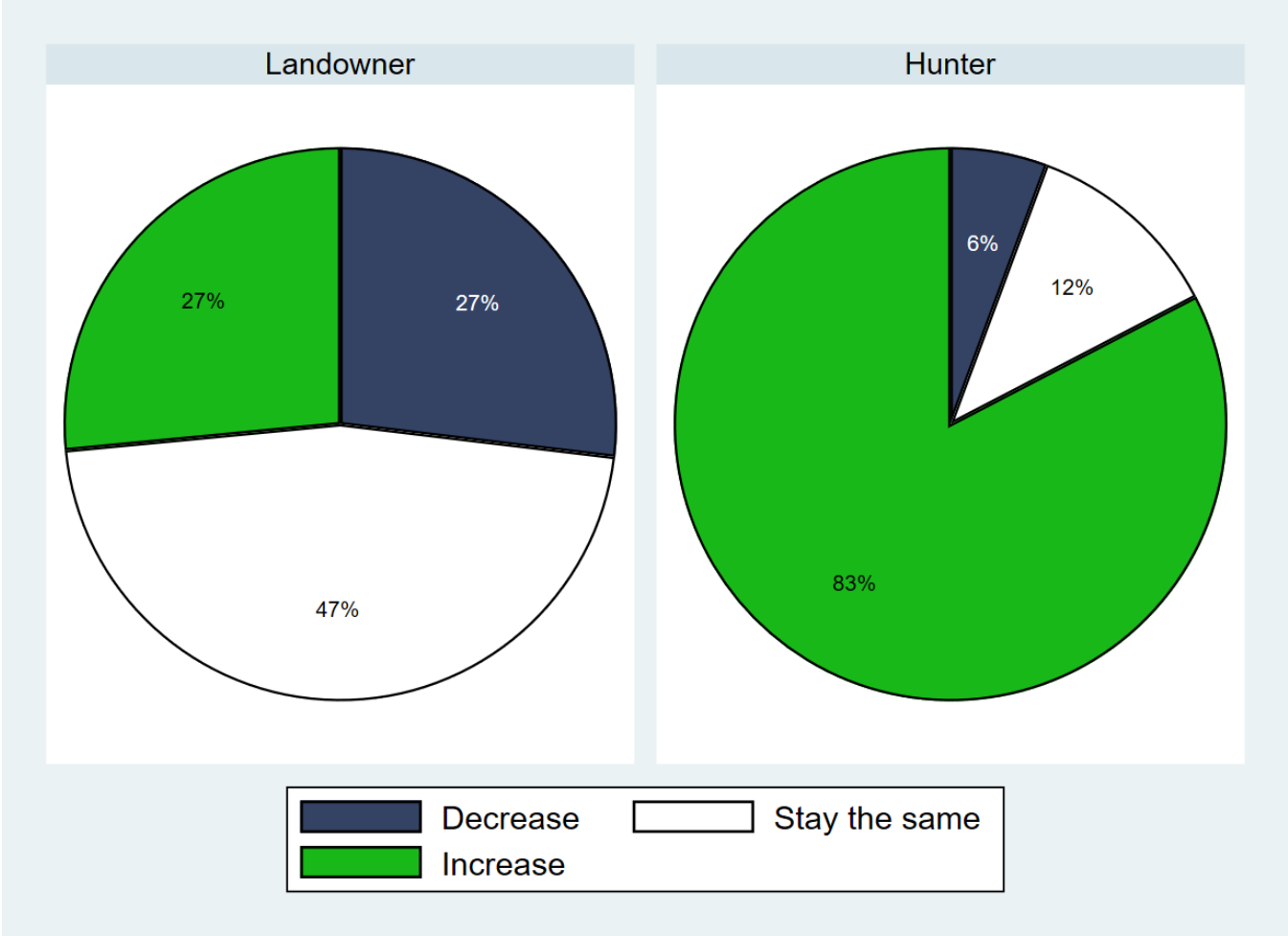


Figure 4. Deer permit area 118 landowners' and hunters' preference for future deer population





Figure 5. Deer permit area 126 landowners' and hunters' preference for future deer population

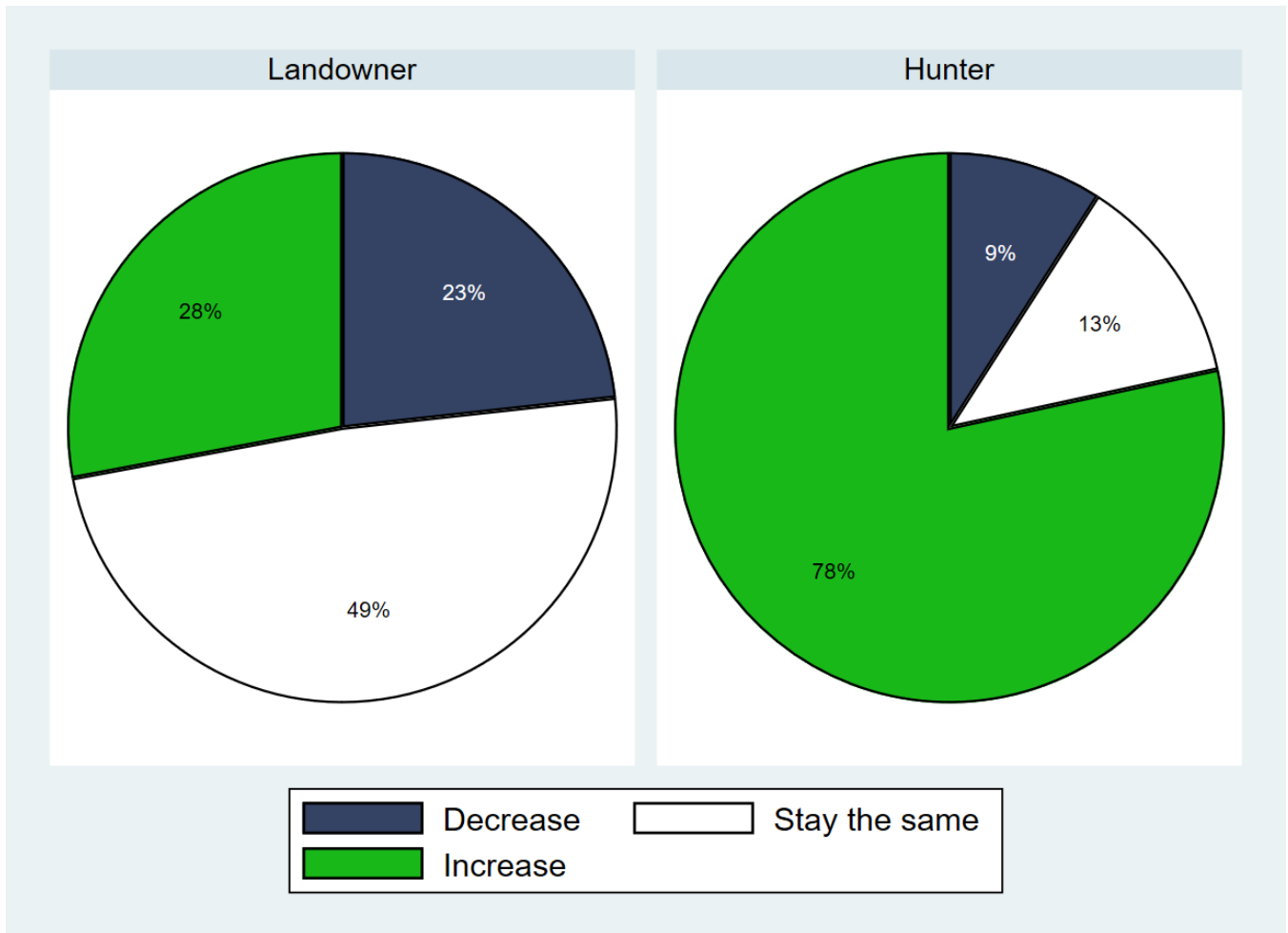


Figure 6. Deer permit area 130 landowners' and hunters' preference for future deer population

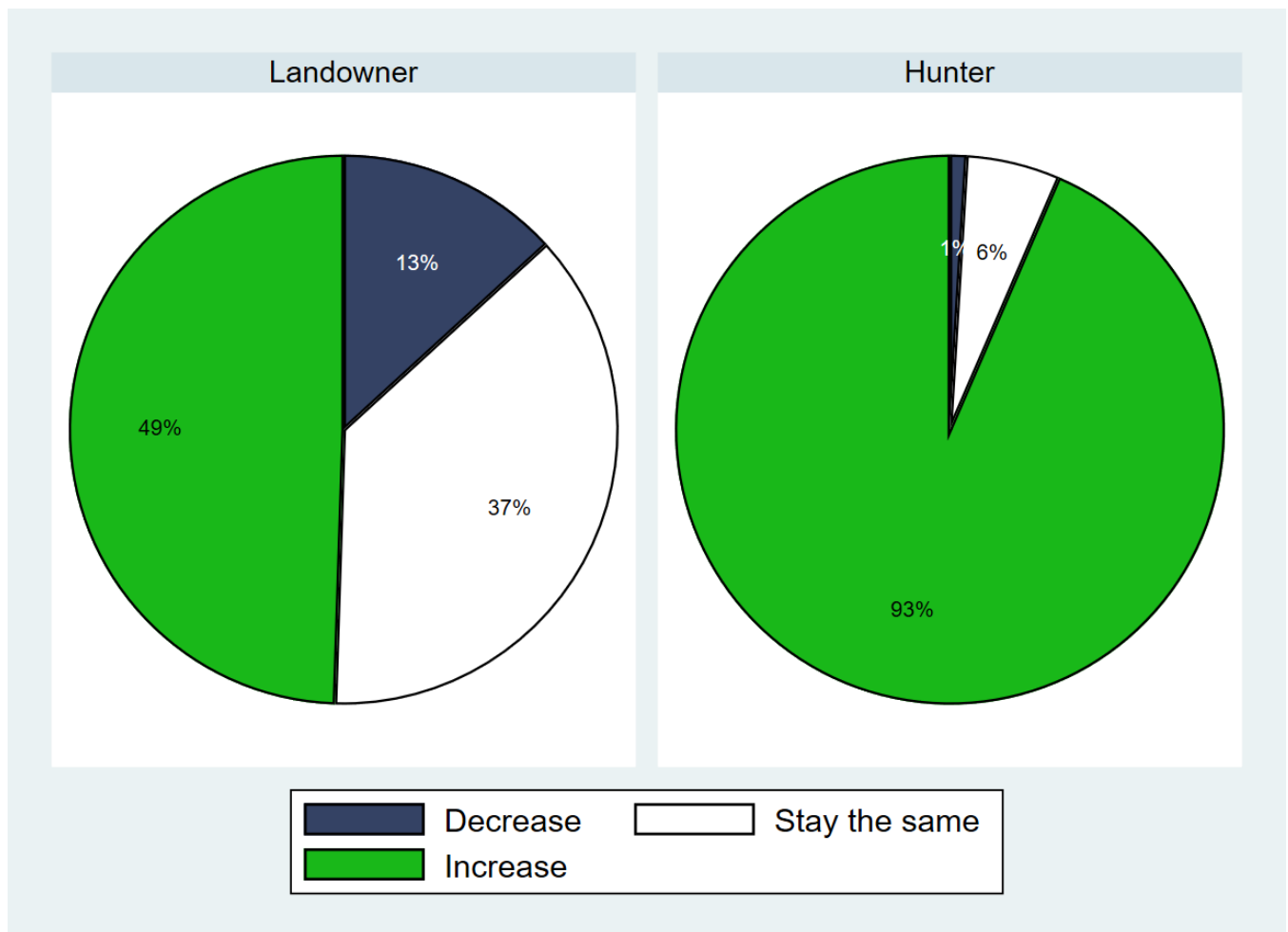


Figure 7. Deer permit area 131 landowners' and hunters' preference for future deer population

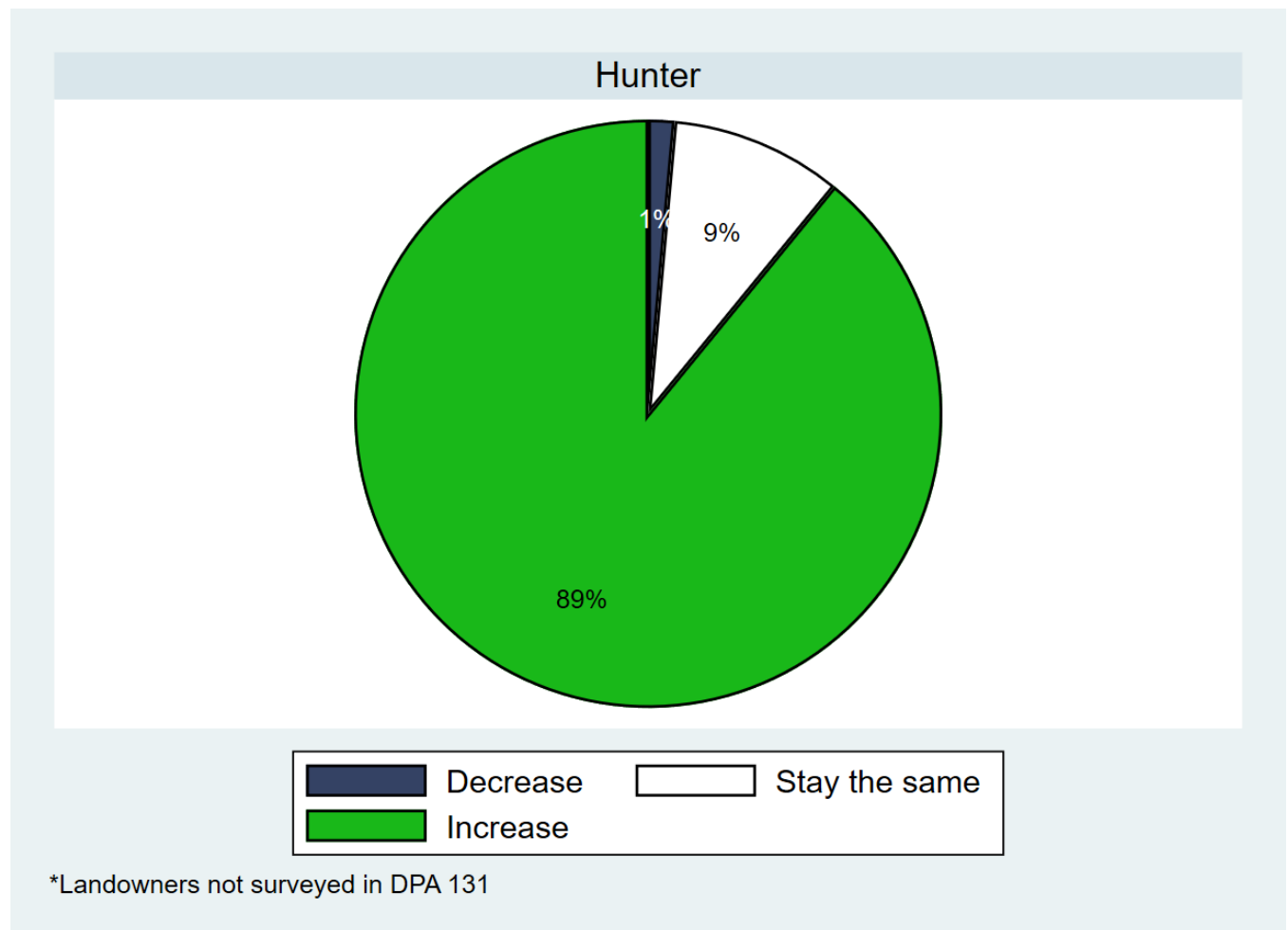
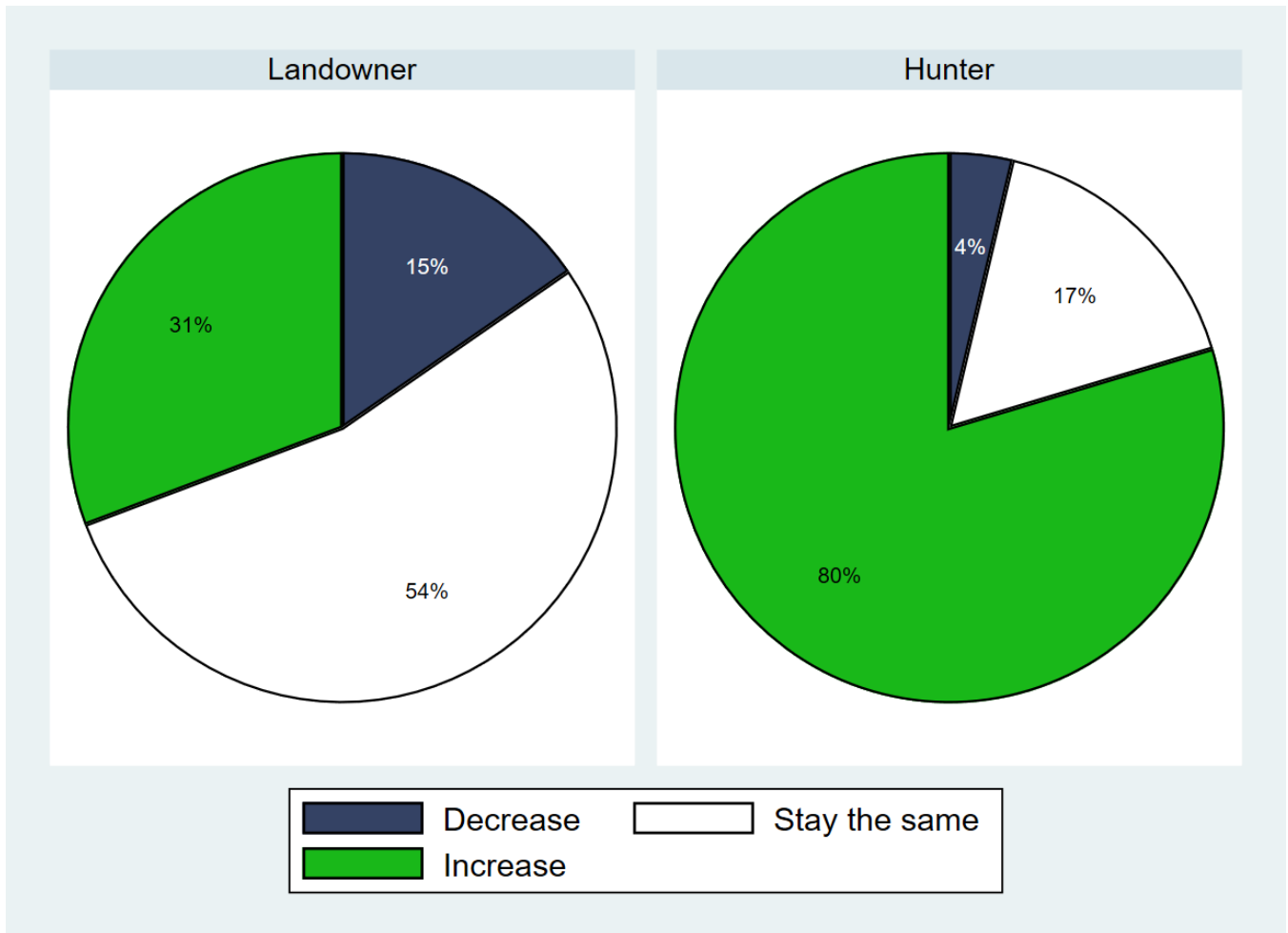


Figure 8. Deer permit area 133 landowners' and hunters' preference for future deer population



## Hunters

We asked hunters to report their recent deer hunting activity. The vast majority (>90%) of hunters reported having hunted deer during the last three years (Table 5). Among these hunters, around 19% reported that they hunted during the archery season in 2020, while 8% participated in muzzleloader season, and 90% reported hunting during the firearms season A (Table 6). Fewer Block 1 hunters reported hunting during firearm season B (9%), and very few participated in the early antlerless season (1%). Around a quarter (22%) of Block 1 hunters reported spending all of their time hunting on private land that they own, while 18% reported spending most of their time hunting on private land that they own, 19% some of their time, and 40% reporting none. Hardly any Block 1 hunters reported spending any time hunting on land that they lease. Hunters were split between spending all, some or most of their time hunting on private land that they do not own, and none of their time hunting on private land that they do not own. Slightly more than a third of Block 1 hunters reported spending all of their deer hunting time on private land (Table 7).

More than half of hunters in DPAs 130 and 131 reported that they were “very dissatisfied” with their most recent deer hunting season. On average, 57% of Block 1 hunters reported feeling either “very dissatisfied” or “slightly dissatisfied” with their most recent deer hunting season. Conversely, around a third (32%) reported feeling either “slightly satisfied” or “very satisfied” (Table 8). Hunters also reported their agreements with statements about their satisfaction elements of their most recent deer hunting season (Table 9). Respondents reported the greatest disagreement with “the number of legal bucks” (63% strongly disagree), “the quality of bucks” (56% strongly disagree), and “the number of deer I saw while hunting” (51% strongly disagree). On average, hunters disagreed that they were satisfied with all elements of the deer hunting experience measured (Table 9).

Hunters evaluated the trend in the deer population over the last 5 years in the DPA where they hunt, their satisfaction with the deer population in the DPA where they hunt, and their likelihood to harvest an antlerless deer given the opportunity. Roughly, 80% of hunters reported seeing fewer deer compared to 5 years ago (Table 10). Seventy-seven percent of Block 1 hunters reported feeling either “slightly dissatisfied” or “very dissatisfied” with the deer population in the DPA where they hunt (Table 11). A clear majority (69%) of hunters reported that they would shoot an antlerless deer given the opportunity (Table 12).

Hunters rated the importance of several competing priorities MNDNR could consider when setting deer population goals on scale where 1 = not at all important and 5 = very important. Among these priorities, Block 1 hunters rated “the amount of deer mortality during a severe winter” (M = 4.1), “deer hunting heritage and tradition” (M = 4.0), and “hunter satisfaction with deer numbers” (M = 3.8), the highest (Table 13).

Hunters evaluated the current deer population in the DPA where they hunt, on a scale of much too low to much too high. Most hunters (78%) felt that the current population where they hunt is either too low, or much too low (Table 14).

When asked if hunters prefer to see the deer population decrease, stay the same, or increase, 85% reported a preference for an increase (Table 15). On average, hunters in Block 1 wish to see a 44% increase in the deer population (Table 16). A majority of hunters in Block 1 (66%) supported establishing regulations to increase the proportion of adult bucks in the DPA where they hunt (Table 17).

We asked hunters how long they have been hunting deer in Minnesota, whether they place feed or minerals out for deer to consume, and if they belong to a deer hunting organization. On average, Block 1 deer hunters have been hunting in Minnesota for 29 years (Table 18). Roughly, 8% of hunters reported that they set out feed for deer (Table 19), while 32% reported placing minerals for deer to consume (Table 20). Around 8% of Block 1 hunters reported that they belong to a deer hunting organization (Table 21).

Hunters reported their agreement with statements about their trust in the MNDNR on a scale where 1 = strongly disagree, 3 = neither, and 5 = strongly agree. On average, hunters reported moderate amounts of trust with mean values falling between 3.2 and 3.7 (Table 22).

Table 5. Percent of respondents reporting hunting deer during the last three years, by DPA

<b>DPA</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>Did not hunt</b>
117	84	84	93	0
118	84	86	94	2
126	88	91	97	0
130	90	91	96	2
131	88	89	96	2
133	91	92	97	1
<b>Block average</b>	<b>88</b>	<b>90</b>	<b>96</b>	<b>1</b>

Table 6. Percent of 2019 deer hunters participating in deer hunting seasons, by DPA

DPA	Archery	Firearm A	Firearm B	Muzzleloader	Early Antlerless
117	28	89	8	7	0
118	16	82	11	7	1
126	20	89	10	10	1
130	12	93	10	6	0
131	18	91	8	7	1
133	25	86	9	9	0
<b>Block average</b>	<b>19</b>	<b>90</b>	<b>9</b>	<b>8</b>	<b>1</b>



Table 7. Percent of deer hunters' time spent hunting on different land ownership types, by DPA

Question	Response	117	118	126	130	131	133	Avg.
Private land that I own	None	60	39	49	37	43	30	40
	Some	19	26	17	17	21	16	19
	Most	15	18	18	22	14	20	18
	All	6	17	16	24	22	34	22
Private land that I lease for hunting	None	97	94	98	87	88	97	93
	Some	0	5	1	3	7	1	3
	Most	0	1	0	6	5	1	2
	All	3	0	1	4	0	1	1
Private land that I do not own or lease	None	68	55	41	55	56	44	51
	Some	18	23	27	21	21	21	22
	Most	0	10	16	13	8	17	12
	All	24	12	16	11	13	18	15
Public land	None	11	7	15	13	11	18	13
	Some	15	24	23	28	25	33	26
	Most	24	29	24	23	28	21	25
	All	50	39	38	36	36	28	36

values are the percent of respondents reporting each category

*Table 8. Deer hunters' satisfaction with their most recent deer hunting season, by DPA*

<b>DPA</b>	<b>Very dissatisfied</b>	<b>Slightly dissatisfied</b>	<b>Neither</b>	<b>Slightly satisfied</b>	<b>Very satisfied</b>
117	20	22	7	36	15
118	26	24	11	26	14
126	33	21	13	19	14
130	52	18	10	13	7
131	51	18	10	15	6
133	23	23	13	22	20
<b>Block average</b>	<b>36</b>	<b>21</b>	<b>11</b>	<b>20</b>	<b>12</b>

values are the percent of respondents reporting each category

*Table 9. Deer hunters' agreement with elements of their satisfaction with their most recent deer hunting season, by DPA*

<b>I was satisfied with the...</b>	<b>Response</b>	<b>117</b>	<b>118</b>	<b>126</b>	<b>130</b>	<b>131</b>	<b>133</b>	<b>Avg.</b>
Number of legal bucks	Strongly disagree	51	58	57	79	77	48	63
	Slightly disagree	26	22	20	10	13	24	18
	Neither	5	5	12	4	5	9	7
	Slightly agree	10	11	8	6	4	15	9
	Strongly agree	9	4	3	1	1	4	3
Quality of bucks	Strongly disagree	48	48	48	71	72	43	56
	Slightly disagree	15	17	16	11	11	23	16
	Neither	8	14	18	7	11	13	12
	Slightly agree	12	14	14	9	5	17	12
	Strongly agree	18	8	4	3	1	5	5

Table 9. Continued.

<b>I was satisfied with the...</b>	<b>Response</b>	<b>117</b>	<b>118</b>	<b>126</b>	<b>130</b>	<b>131</b>	<b>133</b>	<b>Avg.</b>
I heard about or saw legal bucks while hunting	Strongly disagree	33	30	38	59	63	34	44
	Slightly disagree	23	18	12	16	8	13	14
	Neither	10	9	10	5	8	9	8
	Slightly agree	15	27	30	15	16	32	24
	Strongly agree	19	16	11	5	6	12	10
The number of antlerless deer I saw	Strongly disagree	27	37	35	58	54	28	42
	Slightly disagree	26	22	21	14	17	19	19
	Neither	19	13	13	7	11	10	11
	Slightly agree	8	12	18	16	11	25	16
	Strongly agree	20	15	13	5	7	18	12

Table 9. Continued

I was satisfied with the...	Response	117	118	126	130	131	133	Avg.
The number of deer I saw while hunting	Strongly disagree	40	47	45	66	65	36	51
	Slightly disagree	24	30	23	17	16	25	22
	Neither	10	7	12	6	7	10	8
	Slightly agree	13	10	14	9	10	18	12
	Strongly agree	14	6	6	2	2	11	6

values are the percent of respondents reporting each category

Table 10. Deer hunters' perceived change in the deer population over last 5 years, by DPA

DPA	Many fewer deer	Slightly fewer deer	About the same	Slightly more deer	Many more deer
117	54	20	22	2	2
118	45	27	18	9	1
126	61	18	14	4	3
130	75	14	7	4	1
131	76	14	6	2	2
133	44	28	16	9	3
<b>Block average</b>	<b>60</b>	<b>20</b>	<b>13</b>	<b>5</b>	<b>2</b>

values are the percent of respondents reporting each category

Table 11. Deer hunters' satisfaction with the deer population where they hunt, by DPA

DPA	Very dissatisfied	Slightly dissatisfied	Neither	Slightly satisfied	Very satisfied
117	44	32	7	13	3
118	45	31	9	11	4
126	46	25	13	11	5
130	70	20	2	7	1
131	70	16	5	8	1
133	34	31	13	17	6
<b>Block average</b>	<b>52</b>	<b>25</b>	<b>8</b>	<b>11</b>	<b>4</b>

values are the percent of respondents reporting each category

Table 12. Percent of deer hunters that would shoot an antlerless deer, by DPA

<b>DPA</b>	<b>Yes</b>	<b>No</b>
117	65	35
118	68	32
126	72	28
130	64	36
131	64	36
133	77	23
<b>Block average</b>	<b>69</b>	<b>31</b>

values are the percent of respondents reporting each category



*Table 13. Deer hunters' mean stated importance for factors to consider in making deer population goals, by DPA*

<b>Item</b>	<b>117</b>	<b>118</b>	<b>126</b>	<b>130</b>	<b>131</b>	<b>133</b>	<b>Avg.</b>
Amount of deer mortality during an average winter	3.7	3.7	3.6	3.8	3.7	3.7	3.7
Amount of deer mortality during a severe winter	4.0	4.0	4.0	4.2	4.1	4.1	4.1
Potential health risks to the deer herd	4.0	3.6	3.7	3.7	3.6	3.8	3.7
Public health (human-deer diseases)	3.3	3.0	3.1	3.2	3.1	3.5	3.2
Amount of crop damage from deer	2.3	2.1	2.0	2.1	2.1	2.4	2.1
Number of deer vehicle collisions	3.2	2.7	3.1	2.7	2.8	3.1	2.9
Deer over-browsing of forests	2.8	2.4	2.8	2.5	2.5	2.9	2.6
Impacts of deer on other wildlife species	3.0	2.7	2.8	2.6	2.6	2.9	2.7
Deer hunting heritage and tradition	3.7	4.0	3.9	4.1	4.0	3.9	4.0
Hunter satisfaction with deer numbers	3.6	3.7	3.6	3.9	3.9	3.7	3.8
Public satisfaction with deer numbers	3.1	3.1	2.9	3.1	3.1	2.9	3.1
Impact of deer hunting on the local economy	3.2	3.5	3.3	3.7	3.6	3.4	3.5
Quality of bucks (antler size)	3.4	3.2	3.1	3.3	3.0	3.1	3.2
Damage to gardens and landscaping	2.1	1.9	2.0	2.1	1.9	2.3	2.0
The ratio of bucks to does	3.6	3.5	3.3	3.6	3.5	3.5	3.5
The status of moose populations	3.9	3.8	3.7	3.5	3.6	3.7	3.7

responses measured on a unipolar scale, where 1 = not at all important, and 5 = very important

Table 14. Deer hunters' perception of the deer population in the DPA where they hunt, by DPA

DPA	Much too low	Too low	About right	Too high	Much too high
117	29	46	19	6	0
118	32	44	20	3	0
126	29	44	20	6	1
130	61	30	9	1	0
131	56	29	14	0	1
133	23	45	27	3	1
<b>Block average</b>	<b>39</b>	<b>39</b>	<b>18</b>	<b>3</b>	<b>1</b>

values are the percent of respondents reporting each category

Table 15. Deer hunters' preference for future deer populations, by DPA

DPA	Decrease	Stay the Same	Increase
117	6	12	82
118	2	15	83
126	9	13	78
130	1	6	94
131	1	9	89
133	4	17	80
<b>Block average</b>	<b>4</b>	<b>12</b>	<b>85</b>

values are the percent of respondents reporting each category

Table 16. Deer hunters' mean preferred percent change in the deer population, by DPA

DPA	Mean percent change	Median percent change	Minimum	Maximum
117	32.9	30	-100	100
118	38.4	30	-100	100
126	40.3	40	-50	150
130	56.1	50	-30	125
131	53.9	50	-75	150
133	33.2	25	-100	150
<b>Block average</b>	<b>43.6</b>	<b>50</b>	<b>-100</b>	<b>150</b>

Table 17. Deer hunters' support for regulations to increase proportion of antlered bucks in the area they hunt, by DPA

DPA	Strongly oppose	Slightly oppose	Neither	Slightly support	Strongly support
117	4	1	29	36	29
118	4	7	22	26	41
126	7	6	27	26	33
130	6	6	16	26	45
131	5	6	24	26	39
133	7	6	19	36	31
<b>Block average</b>	<b>6</b>	<b>6</b>	<b>22</b>	<b>28</b>	<b>38</b>

values are the percent of respondents reporting each category

Table 18. Mean number of years that deer hunters have been hunting deer in Minnesota, by DPA

DPA	Mean
117	28
118	33
126	27
130	34
131	29
133	28
<b>Block average</b>	<b>29</b>

Table 19. Percent of deer hunters that set out food for deer to consume, by DPA

DPA	Yes	No	Live in CWD management or control zone
117	4	93	3
118	11	88	1
126	5	94	1
130	10	59	1
131	7	92	1
133	8	92	1
<b>Block average</b>	<b>8</b>	<b>91</b>	<b>1</b>

values are the percent of respondents reporting each category

Table 20. Percent of deer hunters that set out minerals for deer to consume, by DPA

DPA	Yes	No	Live in CWD management or control zone
117	19	78	3
118	29	70	1
126	24	75	1
130	42	58	0
131	31	67	2
133	37	63	1
<b>Block average</b>	<b>32</b>	<b>67</b>	<b>1</b>

values are the percent of respondents reporting each category



Table 21. Percent of deer hunters that belong to a deer hunting organization, by DPA

DPA	Yes	No
117	1	99
118	8	92
126	4	96
130	8	92
131	12	88
133	9	91
<b>Block average</b>	<b>8</b>	<b>92</b>

values are the percent of respondents reporting each category

Table 22. Deer hunters' mean level of agreement with statements about the MNDNR, by DPA

	117	118	126	130	131	133	Avg.
The MNDNR does a good job managing deer in MN	3.2	3.0	2.9	2.8	2.5	3.2	3.2
When deciding about deer management in MN, the MNDNR will be open and honest in the things they say and do	3.3	3.3	3.2	3.0	3.0	3.4	3.4
The MNDNR can be trusted to make decisions about deer management that are good for the resource	3.2	3.2	3.1	3.0	2.8	3.3	3.3
The MNDNR will make decisions about deer management in a way that is fair	3.4	3.2	3.1	3.0	2.9	3.3	3.3
The MNDNR has deer managers and biologists who are well-trained for their jobs	3.7	3.5	3.5	3.4	3.3	3.7	3.7
The MNDNR listens to the concerns of deer hunters	3.2	3.1	3.0	2.9	2.7	3.2	3.2

responses measured on a bipolar scale, where 1 = strongly disagree, 3=neither, and 5 = strongly agree

## Landowners

Landowners reported the number of acres that they own or lease within a DPA. On average, Block 1 landowners reported owning 52 acres. Too few individuals in Block 1 DPAs reported leasing property to make estimates for the average acres leased (Table 23). Only, 14% of landowners reported having agricultural land use on their property. Of these landowners, only 4% reported experiencing damage from deer. Too few landowners reported experiencing damage to agriculture to estimate severity (Table 24). Most landowners (73%) reported owning land in forest. Of these individuals, 10% reported having experienced damage from deer. Too few landowners experienced damage to forest land use to estimate severity (Table 25). Around 77% of landowners reported having residential land use on their property, and 20% experienced damage from deer. Landowners experiencing damage from deer to residential land use reported damage that was minor/negligible (55%), moderate (32%), and severe/very severe (13%) (Table 26).

Landowners assessed the damage they have experienced from deer compared to five years ago, and the change they have observed in the deer population on their property. Of landowners that have owned their property for five years or longer, the majority (66%) indicated that the amount of damage they have experienced from deer has remained about the same (Table 27). A near majority of landowners (46%) reported seeing either “many fewer” or “slightly fewer” deer on their property compared to five years ago, while 35% reported seeing about the same number, and 20% reported seeing more (Table 28).

Only 26% of landowners reported feeling satisfied or very satisfied with the deer population on their land, while 36% were neutral, and 38% either dissatisfied or very dissatisfied (Table 29). Hunting landowners reported higher levels dissatisfaction (55%) than non-hunting landowners (24%), while non-hunters were more likely to report neutrality regarding their satisfaction with the deer population on their land (Table 30). Half of landowners indicated that the population of deer on their land was “about right,” compared to too low (33%) or too high (17%) (Table 31). Non-hunting landowners (65%) were more likely to hold a belief that the current population on their property was “about right” than hunting landowners. Similarly, a higher percentage of hunting landowners (53%) than non-hunting landowners (16%) expressed a belief that the current deer population on their property was too low (Table 32).

When asked what they would like to see happen with future deer populations on their land, a plurality (46%) of Block 1 landowners preferred to see the deer population stay the same, compared to 35% that would like to see the deer population stay the same, and 19% a decrease (Table 33). A higher proportion of non-hunting landowners preferred stability in the deer population (63%) than hunting landowners (26%). Conversely, more hunting landowners indicated a preference for increase (59%) than non-hunting landowners (16%) (Table 34). Landowners mean preferred change in the deer population was a 7% increase (Table 35).

We asked landowners if they were aware that MNDNR offers technical assistance for deer damage issues, if they allow hunting on their property, if they lease any of their property for deer hunting, and if they impose any deer harvest restrictions on their property. Regardless of the number of acres a landowner owned, around a quarter were aware that MNDNR offers technical assistance for deer depredation issues (Table 36). The proportion of landowners allowing hunting on their property increased with the amount of land they

owned, where roughly 32% of landowners with 2-19 acres allowed hunting on their property. This is compared to 74% who own 80-319 acres (Table 37). Very few (>1%) of landowners lease their land for deer hunting (Table 38), and this did not vary by DPA. The majority of landowners (72%) did not impose any restrictions on the deer that hunters could take on their property (Table 39).

We asked landowners several questions about their deer hunting activity. Around a third of Block 1 landowners reported hunting deer in each of 2018, 2019, and 2020 respectively. Roughly, 9% indicated that they hunt deer but did not hunt during one of those three years, and 53% indicated that they do not hunt deer at all (Table 40). Among deer hunting landowners, 36% reported doing all of their hunting on private land that they own, while 1%, 6% and 10% of landowners reported doing all of their hunting on land that they lease, private land that they do not own, and public land, respectively (Table 41). Around 64% of landowners indicated that they would shoot an antlerless deer given the opportunity (Table 42), and landowners have been hunting deer in Minnesota for an average of 30 years (Table 43).

Landowners rated their agreement with five statements about their trust in the MNDNR on scale from 1 = strongly disagree, to strongly agree, and a mid-point of neither. Landowners, on average, were neutral regarding their trust in the MNDNR. Mean values ranged from 3.3 to 3.7 for trust items (Table 44).

Respondents were asked to rate the importance of several priorities MNDNR could consider when setting deer population goals. Responses were recorded on a scale where 1 = not at all important, and 5 = very important. Among the items evaluated, landowners placed the highest importance on the “status of moose populations” (M = 4.0), “potential health risks to the deer herd” (M = 4.0), and “amount of deer mortality during a severe winter” (M = 3.9), as issues to consider when setting deer population goals (Table 45).

We asked landowners if they place food or minerals out for deer to consume. A small number of landowners (12%) reported feeding deer (Table 46), or placing minerals out for deer to consume (19%) (Table 47).

Table 23. Mean acres owned and leased by landowners, by DPA

Acres Owned				Acres Leased*		
DPA	Mean	Min	Max	Mean	Min	Max
117	22.7	3	240			
118	39.7	2	1000			
126	34.4	2	500			
130	57.1	2	600			
131	-	-	-	-	-	-
133	79.5	4	1500			
<b>Block average</b>	<b>52.1</b>	<b>2</b>	<b>1500</b>			

\*too few individuals reported leasing land to estimate

Table 24. Percent of landowners with agriculture on their land, percent experiencing damage from deer, and severity of damage, by DPA

Agriculture	Own or lease		Experience damage		Severity of Damage*		
	Yes	No	Yes	No	Minor/ Negligible	Moderate	Severe/Very Severe
117	6	94	0	100			
118	7	93	5	95			
126	11	89	6	94			
130	16	84	5	95			
131	-	-	-	-			
133	23	77	4	96			
<b>Block average</b>	<b>14</b>	<b>86</b>	<b>4</b>	<b>96</b>			

values are the percent of respondents reporting each category

\*too few respondents reported experiencing damage, and prevented analysis of this question

Table 25. Percent of landowners with forest on their land, percent experiencing damage from deer, and severity of damage, by DPA

Forest DPA	Own or lease		Experience damage		Severity of Damage*		
	Yes	No	Yes	No	Minor/ Negligible	Moderate	Severe/Very Severe
117	74	26	10	90			
118	80	20	9	91			
126	69	31	12	88			
130	77	23	11	89			
131	-	-	-	-			
133	64	36	8	92			
<b>Block average</b>	<b>73</b>	<b>27</b>	<b>10</b>	<b>90</b>			

values are the percent of respondents reporting each category

\*too few respondents reported experiencing damage, and prevented analysis of this question

Table 26. Percent of landowners with residential land use on their land, percent experiencing damage from deer, and severity of damage, by DPA

Residential DPA	Own or lease		Experience damage		Severity of Damage		
	Yes	No	Yes	No	Minor/ Negligible	Moderate	Severe/Very Severe
117	83	17	13	87	71	14	14
118	69	31	17	83	49	25	26
126	75	25	26	77	50	41	9
130	65	35	17	83	44	36	20
131	-	-	-	-	-	-	-
133	89	11	24	76	63	30	6
<b>Block average</b>	<b>77</b>	<b>23</b>	<b>20</b>	<b>80</b>	<b>55</b>	<b>32</b>	<b>13</b>

values are the percent of respondents reporting each category



Table 27. Landowners' perceived trend in damage from deer over 5 years, by DPA

DPA	Much less damage	Slightly less damage	About the same damage	Slightly more damage	Much more damage
117	15	6	72	5	2
118	17	6	71	5	1
126	14	14	67	5	1
130	23	6	62	7	2
131	-	-	-	-	-
133	18	14	60	7	1
<b>Block average</b>	<b>17</b>	<b>10</b>	<b>66</b>	<b>6</b>	<b>1</b>

values are the percent of respondents reporting each category

Table 28. Landowners' perceived trend in the deer population over the last 5 years, by DPA

DPA	Many fewer deer	Slightly fewer deer	About the same number of deer	Slightly more deer	Many more deer
117	23	14	48	15	0
118	25	15	32	20	8
126	20	14	43	18	5
130	34	17	27	16	6
131	-	-	-	-	-
133	22	22	35	16	4
<b>Block average</b>	<b>24</b>	<b>22</b>	<b>35</b>	<b>16</b>	<b>4</b>

values are the percent of respondents reporting each category

Table 29. Landowners' satisfaction with the current deer population in the area of their property, by DPA

DPA	Very dissatisfied	Slightly dissatisfied	Neutral	Slightly satisfied	Very satisfied
117	8	19	36	7	31
118	27	19	29	9	17
126	14	22	40	9	15
130	30	16	30	11	13
131	-	-	-	-	-
133	16	18	1	11	14
<b>Block average</b>	<b>19</b>	<b>19</b>	<b>36</b>	<b>10</b>	<b>17</b>

values are the percent of respondents reporting each category

Table 30. Landowners' satisfaction with the deer population on their land, by DPA and hunting status

DPA	Non-hunting Landowners			Hunting Landowners		
	Dissatisfied	Neutral	Satisfied	Dissatisfied	Neutral	Satisfied
117	24	35	41	39	41	20
118	26	35	39	61	25	14
126	23	49	28	60	23	17
130	27	43	31	63	19	19
131	-	-	-	-	-	-
133	22	56	22	44	28	28
<b>Block average</b>	<b>24</b>	<b>44</b>	<b>31</b>	<b>55</b>	<b>25</b>	<b>20</b>

values are the percent of respondents reporting each category

Table 31. Landowners' perception of the deer population on their land, by DPA

DPA	Much too low	Too low	About right	Too high	Much too high
117	9	14	60	14	3
118	21	18	43	11	6
126	12	15	52	19	2
130	22	24	41	11	2
131	-	-	-	-	-
133	8	20	55	16	1
<b>Block average</b>	<b>14</b>	<b>18</b>	<b>50</b>	<b>14</b>	<b>3</b>

values are the percent of respondents reporting each category

Table 32. Landowners' perception of the deer population on their land, by DPA and hunting status

DPA	Non-hunting Landowners			Hunting Landowners		
	Too low/much too low	About right	Too high/much too high	Too low/much too low	About right	Too high/much too high
117	20	64	15	35	41	25
118	13	70	17	60	22	18
126	11	65	24	57	28	15
130	25	57	18	64	28	8
131	-	-	-	-	-	-
133	18	65	18	38	47	16
<b>Block average</b>	<b>16</b>	<b>65</b>	<b>19</b>	<b>53</b>	<b>32</b>	<b>15</b>

values are the percent of respondents reporting each category

*Table 33. Landowners' preference for future deer populations, by DPA*

<b>DPA</b>	<b>Decrease</b>	<b>Stay the Same</b>	<b>Increase</b>
117	27	47	27
118	17	42	41
126	24	49	28
130	13	37	49
131	-	-	-
133	15	54	31
<b>Block average</b>	<b>19</b>	<b>46</b>	<b>35</b>

values are the percent of respondents reporting each category

Table 34. Landowners' preference for future deer populations, by DPA and hunting status

DPA	Non-hunting Landowners			Hunting Landowners		
	Decrease	Stay the same	Increase	Decrease	Stay the same	Increase
117	26	50	25	33	32	35
118	17	70	13	18	18	64
126	27	64	8	15	20	65
130	20	56	24	7	21	72
131	-	-	-	-	-	-
133	16	69	15	15	41	45
<b>Block average</b>	<b>22</b>	<b>63</b>	<b>16</b>	<b>15</b>	<b>26</b>	<b>59</b>

values are the percent of respondents reporting each category



Table 35. Landowners' mean preferred percent change in the deer population, by DPA

DPA	Mean percent change	Median percent change	Minimum	Maximum
117	-7.4	0	-100	100
118	11.7	0	-100	150
126	1.9	0	-100	110
130	14.9	0	-100	150
131	-	-	-	-
133	10.1	0	-65	150
<b>Block average</b>	<b>7.3</b>	<b>0</b>	<b>-100</b>	<b>150</b>

Table 36. Percent of landowners aware that MNDNR offers technical and financial assistance for deer depredation problems, by DPA, and acres owned

DPA	2-19 acres	20-79 acres	80-319 acres	320+ acres*	Average
117	25	29	67		26
118	18	28	23		21
126	23	18	24		22
130	25	29	25		26
131	-	-	-		-
133	17	19	35		18
<b>Block average</b>	<b>21</b>	<b>23</b>	<b>26</b>		<b>22</b>

values are the percent of respondents reporting each category

\*too few respondents in the 320+ strata to calculate

Table 37. Percent of landowners that allow hunting on their property, by DPA, and acres owned

DPA	2-19 acres	20-79 acres	80-319 acres	320+ acres	Average
117	10	25	67		11
118	43	67	84		53
126	21	45	55		28
130	35	62	81		48
131	-	-	-		
133	45	57	70		49
<b>Block average</b>	<b>32</b>	<b>56</b>	<b>74</b>		<b>40</b>

values are the percent of respondents reporting each category

\*too few respondents in the 320+ strata to calculate

*Table 38. Percent of landowners that leased their property for deer hunting, by DPA.*

<b>DPA</b>	<b>Yes</b>	<b>No</b>
117	0	100
118	0	100
126	0	100
130	1	99
131		
133	0	100
<b>Block average</b>	<b>0</b>	<b>100</b>

values are the percent of respondents reporting each category

Table 39. Percent of landowners imposing different harvest restrictions on their property, by DPA

DPA	Antlerless harvest is restricted, but hunters can take any legal buck	Buck harvest is restricted to large antlered bucks, but hunters can take any antlerless deer	Buck harvest is restricted to large antlered bucks, and antlerless harvest is also restricted	No restrictions on the type of deer that can be harvested	Other
117	0	0	0	83	17
118	16	0	8	68	8
126	7	0	4	81	8
130	12	2	3	72	11
131	-	-	-	-	-
133	12	1	8	69	10
<b>Block average</b>	<b>12</b>	<b>1</b>	<b>6</b>	<b>72</b>	<b>10</b>

values are the percent of respondents reporting each category

Table 40. Percent of landowners reporting hunting deer during the last three years, and those that do not hunt, by DPA

DPA	2018	2019	2020	Did not hunt these years	Do not hunt
117	7	6	4	10	75
118	43	42	39	8	44
126	23	24	21	8	63
130	45	44	38	6	45
131	-	-	-	-	-
133	41	40	38	9	44
<b>Block average</b>	<b>34</b>	<b>33</b>	<b>30</b>	<b>9</b>	<b>53</b>

values are the percent of respondents reporting each category

Table 41. Landowners' time spent hunting on different land ownership types, by DPA

	Response	117	118	126	130	131	133	Avg.
Private land that I own	None	64	14	27	12	-	15	18
	Some	0	23	17	23	-	26	22
	Most	1	29	20	23	-	23	24
	All	27	34	37	41	-	35	36
Private land that I lease for hunting	None	100	100	100	96	-	93	97
	Some	0	0	0	4	-	1	1
	Most	0	0	0	0	-	4	1
	All	0	0	0	0	-	3	1
Private land that I do not own or lease	None	30	68	57	59	-	65	62
	Some	9	23	13	21	-	19	19
	Most	20	9	18	14	-	12	13
	All	41	0	11	5	-	5	6
Public land	None	49	27	38	28	-	31	31
	Some	21	37	28	46	-	30	25
	Most	0	30	20	19	-	28	24
	All	31	6	14	6	-	11	10

values are the percent of respondents reporting each category

Table 42. Percent of hunting landowners that would shoot an antlerless deer, by DPA

<b>DPA</b>	<b>Yes</b>	<b>No</b>
117	56	41
118	63	37
126	66	34
130	58	42
131	-	-
133	67	33
<b>Block average</b>	<b>64</b>	<b>36</b>

values are the percent of respondents reporting each category



Table 43. Mean number of years that hunting landowners have been hunting deer in Minnesota, by DPA

DPA	Mean
117	12.9
118	30.2
126	27.7
130	36.4
131	-
133	29.3
<b>Block average</b>	<b>29.8</b>

Table 44. Landowners' mean level of agreement with statements about the MNDNR, by DPA

	117	118	126	130	131	133	Avg.
The MNDNR does a good job managing deer in MN	3.3	3.1	3.4	3.1	-	3.4	3.3
When deciding about deer management in MN, the MNDNR will be open and honest in the things they say and do	3.6	3.4	3.6	3.4	-	3.6	3.5
The MNDNR can be trusted to make decisions about deer management that are good for the resource	3.5	3.8	3.6	3.4	-	3.5	3.5
The MNDNR will make decisions about deer management in a way that is fair	3.5	3.4	3.6	3.5	-	3.6	3.5
The MNDNR has deer managers and biologists who are well-trained for their jobs	3.7	3.6	3.9	3.7	-	3.6	3.7
The MNDNR listens to the concerns of landowners	3.5	3.3	3.5	3.4	-	3.5	3.4

responses measured on a bipolar scale, where 1 = strongly disagree, 3=neither, and 5 = strongly agree

Table 45. Landowners' mean stated importance for factors to consider in making deer population goals, by DPA

	117	118	126	130	131	133	Avg.
Amount of deer mortality during an average winter	3.3	3.6	3.7	3.6	-	3.8	3.6
Amount of deer mortality during a severe winter	3.5	3.9	3.9	4.1	-	4.0	3.9
Potential health risks to the deer herd	3.7	3.9	4.1	4.0	-	4.0	4.0
Public health (human-deer diseases)	3.8	3.7	3.9	3.8	-	3.8	3.8
Amount of crop damage from deer	3.1	3.0	3.2	3.1	-	3.1	3.1
Number of deer vehicle collisions	3.5	3.5	3.8	3.5	-	3.8	3.6
Deer over-browsing of forests	3.7	3.2	3.7	3.2	-	3.3	3.4
Impacts of deer on other wildlife species	3.8	3.2	3.7	3.3	-	3.3	3.4
Deer hunting heritage and tradition	2.6	3.3	3.1	3.7	-	3.3	3.2
Hunter satisfaction with deer numbers	2.3	3.1	2.7	3.4	-	3.1	3.0
Public satisfaction with deer numbers	2.7	3.0	3.0	3.2	-	2.9	3.0
Impact of deer hunting on the local economy	2.7	3.2	3.0	3.3	-	3.1	3.1
Quality of bucks (antler size)	2.2	2.6	2.3	2.8	-	2.7	2.5
Damage to gardens and landscaping	2.9	2.7	2.9	3.0	-	3.1	2.9
The ratio of bucks to does	3.0	3.1	3.1	3.4	-	3.3	3.2
The status of moose populations	4.6	4.2	4.3	4.1	-	3.9	4.2

responses measured on a unipolar scale, where 1 = not at all important, and 5 = very important

Table 46. Percent of landowners that set out food for deer to consume, by DPA

DPA	Yes	No	Live in CWD management or control zone
117	5	93	3
118	14	86	0
126	9	91	1
130	16	84	0
131	-	-	-
133	14	86	0
<b>Block average</b>	<b>12</b>	<b>88</b>	<b>1</b>

values are the percent of respondents reporting each category

Table 47. Percent of landowners that set out minerals for deer to consume, by DPA

DPA	Yes	No	Live in CWD management or control zone
117	4	94	1
118	20	80	0
126	16	84	0
130	23	76	1
131	-	-	-
133	24	76	0
<b>Block average</b>	<b>19</b>	<b>81</b>	<b>0</b>

values are the percent of respondents reporting each category