

Kansas Department of Wildlife and Parks 2022 Survey of Landowners on Opinions About Deer Populations in Kansas





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Mission:
To Facilitate Effective Public Policy Decision-Making

The staff of the Docking Institute of Public Affairs and its University Center for Survey Research are dedicated to serving the people of Kansas and surrounding states.

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Executive Summary

All univariate results reported in this executive summary can be found in detail in Appendix 1, which contains all questionnaire items and the relative frequency (percentage) distributions on discrete items and measures of central tendency for all continuous items. Trend analysis results reported in the executive summary are detailed in the body of the report with associated charts and discussion. Results by region outlined in this executive summary also are detailed in the body of the report with associated charts, tables, and discussion.

The primary objectives of this survey conducted January 18 – April 18, 2022, for the Kansas Department of Wildlife and Parks were to:

- Categorize landowners' perceptions of changes in deer populations
- Assess landowners' attitudes toward presence of deer populations
- Obtain estimates of deer populations and the hunter harvest of deer on lands owned or operated by the survey respondent
- Assess perceived destructiveness of deer, and types and levels of damage incurred
- Assess landowners' knowledge and use of damage control and abatement techniques
- Determine landowners' support of deer hunting and deer population management
- Determine landowners' preference for species of deer and structure of population
- Assess prevalence of hunting leases, species leased for, and residency of hunters who lease

From analyses of survey results, the Docking Institute finds:

- There is a trend of increasing deer damage reported by land operators from 1964 to 2000, with the trend reaching a plateau at the end of that time span. Though not consistently declining in the survey years since then, the overall trend since 2000 is downward.
- Compared to 2017, the percentages reporting substantial and moderate damage in 2022 have increased such that the distribution of response is closer to that reported in 2000, 2003, and 2006.
- Overall, a trend of more respondents wanting fewer deer is evident from 1964 to 1997. However, the 25-year trend since 1997 finds increasing percentages of respondents wanting more deer, with the highest percentages wanting more deer observed in the two most recent survey years – 2017 and 2022. Even so, the single largest percentages in the 2017 and 2022 surveys want the population of deer on their land to stay the same.
- In all years, it is clear that respondents reporting deer damage express a greater desire to have fewer deer than those respondents who did not experience damage.

- Dividing the state into six regions (please see the map in Figure 5), the three northern regions of Kansas have higher percentages reporting damage than the southern regions. *(NOTE: While compass points labels will be used to refer to regions' location in this Executive Summary, the map in Figure 5 shows the regions are combinations of Deer Management Units, and, thus, not as perfect a match as these directional labels might suggest. Thus, the report body refers to Regions 1 through 6 as they are identified on the map.)*
- The lowest percentages reporting someone hunted deer on their land last year are the two western regions – the southwest (65%) and the northwest (73%).
- The southwest region reports the lowest mean deer density, and after that, the means progressively increase across the state moving from the northwest region to the southeast region.
- The southwest region has the lowest mean density of harvested bucks, followed by the northwest region. From there the mean density of bucks harvested tends to increase progressively across the state from the northwest to the southeast.
- The southwest region has the lowest mean density antlerless deer harvested, followed by the northwest region. From there the mean density of antlerless deer harvested tends to increase progressively across the state from the northwest to the southeast.
- Regions with the single largest percentage reporting a decrease in deer populations from 2019-2021 are the northwest (48%) and the northeast (33%). Regions with the single largest percentage indicating populations remained the same are the southwest (34%), the northcentral (36%), and southcentral (38%). Only the southeast had the single largest percentage (46%) reporting an increase.
- Respondents who report deer damage in the past year are much more likely to report an increase (46%) in the three-year change in deer population than those not experiencing damage (20%).
- Those with land that was hunted last year are more likely to report that the deer population increased (34%) compared to those whose land was not hunted (19%).
- When asked about perceived deer population change “since this time last year,” the only region in which the single largest percentage report a decrease is the northwest (39%). In all other regions the single largest percentage indicate the population has remained the same. By far the largest percentage indicating a population increase is in the southeast (36%).
- Those reporting damage are much more likely to report an increase (34%) in the one-year change in deer population than those not experiencing damage (13%).

- Those with land that was hunted last year are much more likely to report that the deer population increased in the last year (25%) than those whose land was not hunted (12%).
- When asked how many deer they wanted on their land, the single largest percentage in each region prefer the number of deer on their land remain the same.
- A higher percentage of those with damage prefer no deer (14%) than those with no damage (3%), and a markedly higher percentage of those with damage want fewer deer (41%) than those with no damage (10%).
- Larger percentages of those whose land was hunted last year want fewer deer (25%) compared to those whose land was not hunted (15%).
- Regarding general feelings about having deer on and around their property, the largest single percentage response in every region except for the northwest is “I enjoy having deer around,” and this is a majority response in the northeast, southcentral, and the southeast.
- Only 20% of those reporting damage from deer last year enjoy having deer around compared to 67% of those with no damage. On the other end of the answer spectrum, 31% of those with damage regard deer as a nuisance while only 4% of those with no damage do so.
- There is little difference in general attitudes about having deer on and around one’s property among those who report that someone hunted on their land last season compared to those who report that nobody hunted on their land.
- Among all habitat enhancement practices offered, placing feeders out for deer is the top practice in four of the six regions, and creating salt or mineral licks for deer is typically the second most often indicated practice. Overall, respondents from the southcentral and southeast regions are the most engaged in habitat enhancements.
- Comparing those who do not report damage to those who do report deer damage on their land in 2021, the percentages who engage in the habitat enhancement practices offered are not substantially different.
- Those who indicate their land was hunted by someone last season report much higher levels of habitat enhancement practices on their land than those who indicate nobody hunted deer on their land.
- The 41% of respondents who reported deer damage last year were asked a series of follow-up questions regarding: overall extent of damage, extent of damage by type, use of lethal means to limit damage, use of non-lethal means to reduce damage, and perception of

overall effectiveness at limiting deer damage. An analysis of statistically significant differences in response by regions suggest the following:

- There is no significant difference in the overall extent of damage by region.
 - In terms of questions assessing levels of particular types of damage, there are three types of damage that differ slightly by region, [1] **damage to temporary electric fences** is more likely to be a problem in the northwest, southwest, and northcentral; [2] **damage to permanent fence** is reported to be less of a problem in the northeast; and [3] **damage to windbreaks or shelter-belt trees** is more likely to be a problem in the northwest, southwest, and northcentral.
 - Only Walk-In Hunting Area (WIHA) Enrollment is significantly different by region among the lethal means series of questions, with **WIHA enrollment** being higher in the northwest and northcentral regions.
 - From the series of questions asking about non-lethal attempts to reduce deer damage, the only statistically significant difference by region is **leasing to someone other than KDWP for WIHA**, with the southcentral (36%) and southeast (26%) being higher than the others.
 - There is no significant difference by region in perceived effectiveness at limiting deer damage in the previous year.
-
- The 77% of respondents who reported that hunting occurred on their land last deer were presented with a list of types of people and asked whether each hunted on their land during the last season. Of eight types of people presented to respondents, “Invited friends/relatives” and “immediate family” are the two most frequently occurring in the northcentral, southcentral, northeast, and southeast regions. Both of those types occur frequently in the northwest and southeast regions, but “some who ask” is also high in those two regions. “Some who ask” gets progressively lower moving from west to east across the state.
 - Only 11% reported that deer hunters caused problems on their land last deer season.
 - When presented with the statement “mule deer populations in Kansas are declining,” the single largest percentage response in all but the northwest region is “don’t know.” In the southcentral, northeast, and southeast regions, large majorities chose this response option. In the northwest, southwest, and northcentral regions, the combined percentage of strongly agree and agree is much greater than the combined response of disagree and strongly disagree.
 - With the exception of the northwest (46%), majorities of respondents across the state indicate “don’t know” when asked whether accidental killing of mule deer on a white-tailed permit is a common occurrence, and the levels are especially high in the southcentral, northeast, and southeast regions at over 80% each. In the northwest and the southwest regions, the combined percentage of disagree and strongly disagree exceeds the combined percentage of agree and strongly agree.
 - The perception of intentional killing of mule deer on a white-tailed permit follows the same pattern as that for accidental killing.
 - Over two-thirds of those in the southcentral, northeast, and southeast responded “don’t know” and the single largest percentage response in the southwest and the northcentral is also “don’t know” when asked whether fewer permits allowing the take of mule deer should be issued. In the northwest, southwest, and northcentral, the combined percentage of strongly agree and agree exceeds the combined response of disagree and strongly disagree, especially in the northwest region.

- When presented with the statement “If additional protection for mule deer meant less opportunities to hunt white-tailed deer, I would support that additional protection,” more than half in the southcentral, northeast, and southwest regions respond “don’t know,” and in the northwest and northcentral regions, the percentages who express some level of agreement are comparable to percentages expressing disagreement.
- New to the 2022 survey, respondents were presented with the statement “The presence of or possibility of chronic wasting disease in local populations concerns me.” The combined percentage of strongly agree and agree exceeds 50% in all but the southwest and northcentral regions, where it is still high at 41% and 48%, respectively. Concern is highest in the northwest, where the combined percentage of strongly agree and agree reaches nearly 70%.
- At least 58% of respondents in all regions rate simplifying deer regulations as moderately important or higher, with the highest percentage in in the southeast at about 68%.
- Perceived importance of allowing more days of deer hunting is highest in the southeast and lowest in the southwest, but the single largest percentage in every region indicates “not at all important.”
- The single largest percentages in all regions rate KDWP allowing more nonresident deer permits as not at all important. It is rated least important in the southeast region and only slightly more important in the northwest and southwest regions -- the regions most different in response from the southeast.
- About 50% in each region view KDWP providing more law enforcement as at least moderately important. There are only small differences across regions, with the southcentral region showing the least importance but only slightly lower than the northcentral region, displaying the highest importance.
- In terms of KDWP leasing more WIHA, about 40% in each region view this as at least moderately important.
- Providing more information to landowners on deer management is viewed as at least moderately important by more than 50% in all but the southeast region. Highest perceived importance is found in the southwest and lowest is in the southeast, but differences are not substantial.
- When asked “How do you feel about the way KDWP manages deer populations?”, in all but the northeast region the single largest percentage are “neither satisfied nor dissatisfied.” The modal category in the northeast is satisfied (39%). In all regions higher percentages express satisfaction than dissatisfaction.

Methods

From January 18 – April 18, 2022, the Docking Institute’s Center for Survey Research conducted a two-wave mail survey of 3,494 randomly selected landowners in Kansas from lists provided by the Kansas Department of Wildlife and Parks (KDWP). The self-administered booklet questionnaire was designed to be taped shut and dropped in the mail, as the back cover is pre-addressed to the Docking Institute and printed with business-reply postage. Targeted respondents were offered an incentive of viewing the survey results posted online once the report is complete. Representatives of both the KDWP and the Docking Institute signed the cover letter, with an invitation to targeted respondents to contact either representative should they have questions or concerns. The follow-up wave was sent only to those who had not yet responded to a previous wave. Of 3,494 randomly selected landowners, 731 returned usable questionnaires for a response rate of 21%. Non-respondent bias was not assessed. Wave 1 yielded about 75% of the total response, with wave 2 accounting for the remaining 25%.

The 2017 and 2022 deer survey sampling frames differed somewhat from the frame and administration process for this survey when administered in 2000, 2003, and 2006 (surveying continued into early 2007, but since the bulk of response was from 2006, that year will be used throughout to refer to that survey period). The first year in which the Docking Institute assisted KDWP in carrying out the deer survey was 2000; methodology used in surveys prior to 2000 is unknown -- but likely is accessible from KDWP records. In 2000, 2003, and 2006 survey years, a list of agricultural operators maintained by the Kansas Agricultural Statistics Service (KAS) was used as the sampling frame. Two or three waves (depending on year) of a self-administered mail survey were mailed from the offices of KAS on behalf of the Docking Institute’s Center for Survey Research to a sample of land operators from all counties in Kansas. The number of land operators sampled from each county was proportionate to the total number of land operators in the county according to KAS lists. Signatures of both the assistant secretary of the Kansas Department of Wildlife and Parks (KDWP) and the director of the Docking Institute appeared on the cover letters.

Because there is a desire to view some trends over time with this 2022 deer survey as the most recent data point, it is important to assess how similar the different sampling frames and administration processes were in reaching the same profile of landowner. Appendix 2 shows that the samples from 2006, 2017, and 2022 are comparable on three sociodemographic characteristics of the final samples: number of years owned/operated the land in question on the survey, approximate percentage of households’ net income derived from the agricultural products produced from this land, and type of location where the respondent resides.

Appendix 1 contains the questionnaire. The Docking Institute and the KDWP agreed on the survey items used. The 2022 questionnaire was nearly identical to that used in 2017. A single additional item was added in 2022 – the final item in the Q26 series. There were substantial revisions and additions to the 2017 survey compared to survey years 2000, 2003, and 2006. It was the responsibility of KDWP to identify information areas and objectives of the survey. It was the responsibility of the Docking Institute to develop survey items that were technically correct and without bias. Question wording and the design of the survey instrument are the joint property of the Docking Institute and KDWP and are not to be used for additional surveys unless written permission is granted by both entities. Appendix 1 also reports percentages or measures of central tendency of overall response.

Trends

KDWP has conducted a survey on landowner opinions about deer related crop predation and deer hunting pressures since the 1960s. Since the Docking Institute began assisting KDWP to conduct and analyze results of this surveying in the early 2000s, it has documented select trends in survey response. An item of substantial interest is trends in deer damage experienced by land operators (see Q5 in Appendix 1). Figure 1 demonstrates a general trend of increasing damage reported by land operators from 1964 to 2000, with the trend reaching a plateau at the end of that time span. Though not consistently declining in the survey years since then, the overall trend since 2000 is downward. The 41% reporting damage in 2022 is the lowest level since 2000.

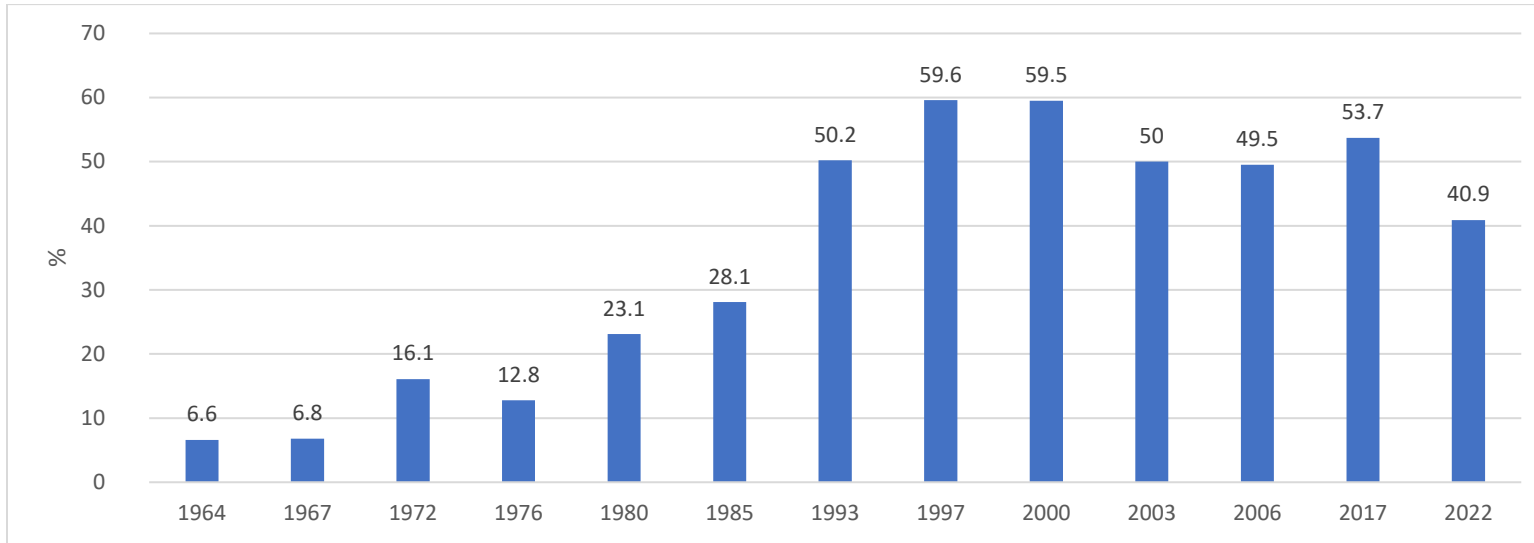


FIGURE 1. PERCENTAGE OF RESPONDENTS WHO INDICATED DEER CAUSED DAMAGE ON THEIR LAND (1964 THROUGH 2022)

Of those 2022 survey respondents who reported experiencing deer damage on their land last year, 45% report light damage and 33% report moderate damage (see Q7 in Appendix 1). Compared to 2017, the percentages reporting substantial and moderate damage in 2022 have increased such that the distribution of response is closer to that reported in 2000, 2003, and 2006, as Figure 2 shows.

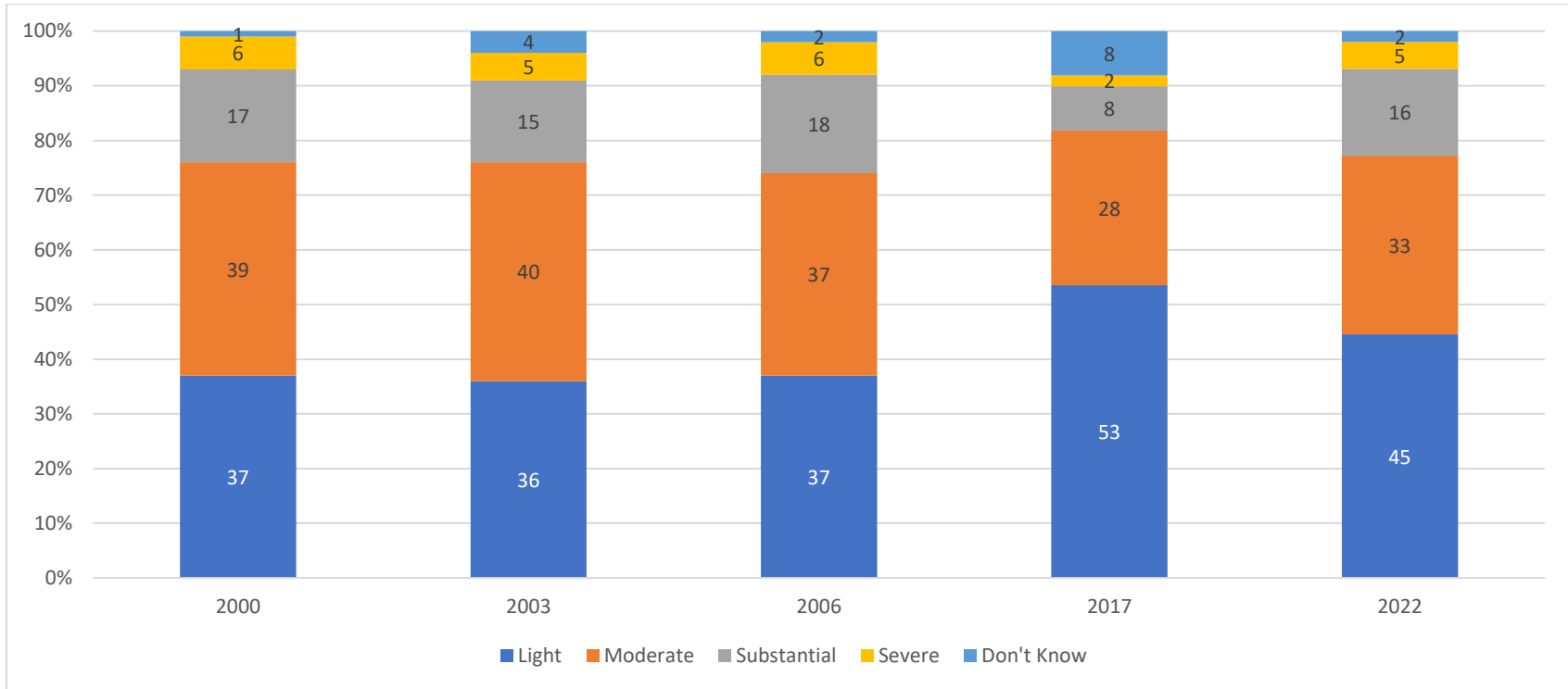


FIGURE 2. LANDOWNER PERCEPTION OF THE SEVERITY OF CROP DAMAGE CAUSED BY DEER (2000 TO 2022)

Among those wanting at least some deer on their land, trends in *quantity of deer wanted in the future* since 1964 appear in Figure 3. The 2022 survey again asked respondents this question (see Q3 in Appendix 1). Overall, a trend of more respondents wanting fewer deer is evident from 1964 to 1997. However, the 25-year trend since 1997 finds increasing percentages of respondents wanting more deer, with the highest percentages wanting more deer observed in the two most recent survey years – 2017 and 2022. Even so, the single largest percentages still in the 2017 and 2022 surveys want the population of deer on their land to stay the same.

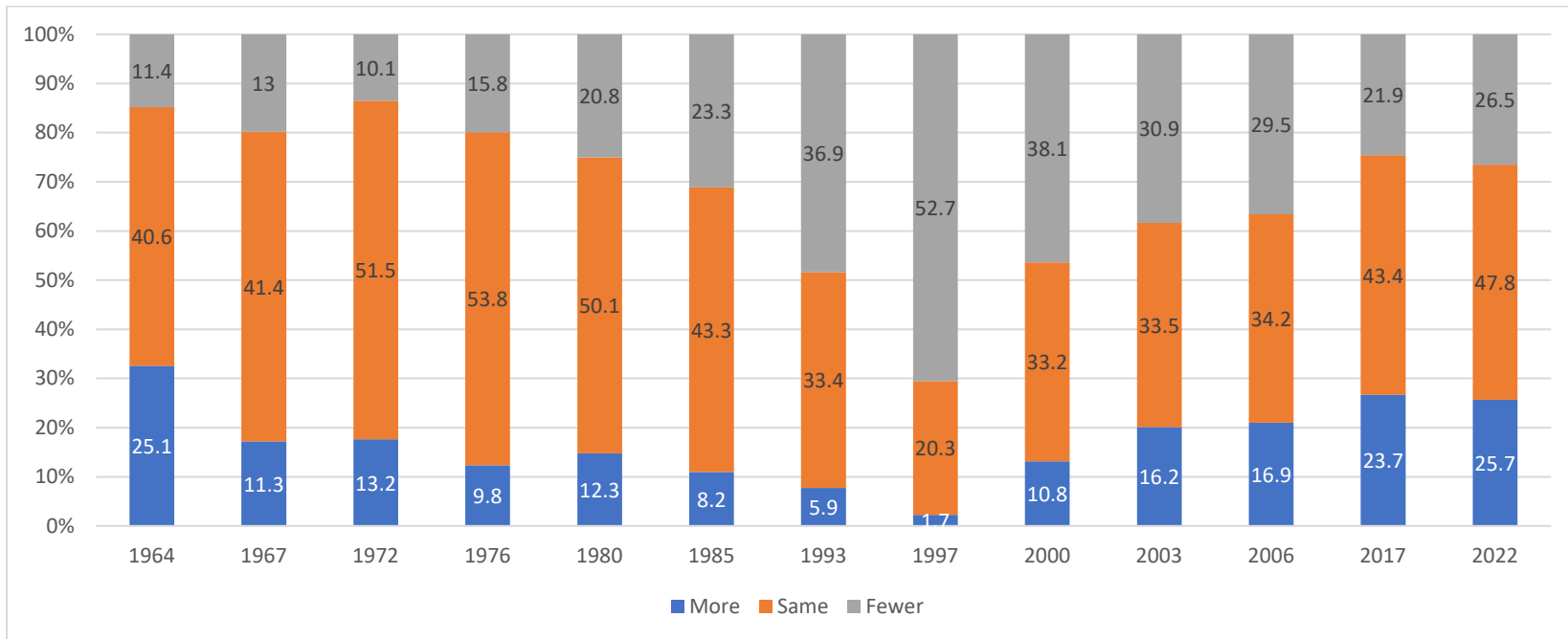


FIGURE 3. QUANTITY OF DEER WANTED IN THE FUTURE (1964 TO 2022)

Figure 4 shows trends between 1997 and 2022, comparing the quantity of deer wanted on the property between respondents who reported damage and those who did not report damage. In all years, it is clear that respondents reporting deer damage express a greater desire to have fewer deer than those respondents who did not experience damage. Similarly, in every year, respondents who did not report damage by deer had a greater desire for the same amount of deer around their area than those respondents who reported damage. Finally, those wanting the same amount of deer among respondents who reported damage increased slightly up to 2017 but declined slightly from 2017 to 2022.

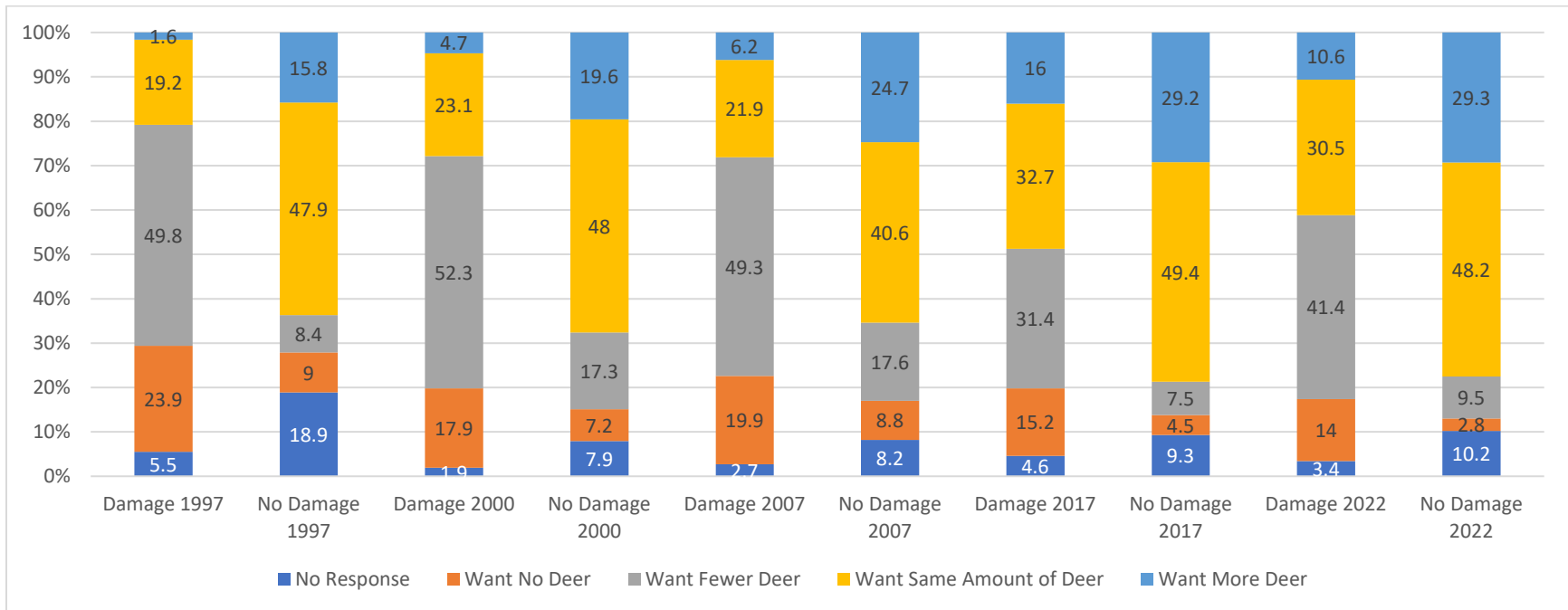


FIGURE 4. QUANTITY OF DEER WANTED IN THE FUTURE AMONG THOSE REPORTING DEER DAMAGE TO OPERATION AND THOSE REPORTING NO DAMAGE FROM 1996 TO 2022

Regional Groupings of Deer Management Units

Per KDWP's request for the 2022 deer survey analyses, responses are grouped by the deer management unit (DMU) into one of six regions decided by KDWP. Regions are shown in Figure 5. Respondents were assigned to a region based upon DMU in which they indicated their land to be primarily located (Table 1) on the survey questionnaire. Beginning in 2017, KDWP preferred to draw random samples of equal size (n=185 per DMU) for targeting from each of the 19 Department DMUs. This sampling approach was used again in 2022. With final DMU sample sizes ranging from 15 to 65 in 2022, the sampling margins of error at the DMU level range from +/-25% (n=15) to +/-12% (n=65). With such large margins of error around DMU-level sample estimates, regional analyses are emphasized in this report over DMU-level comparisons.

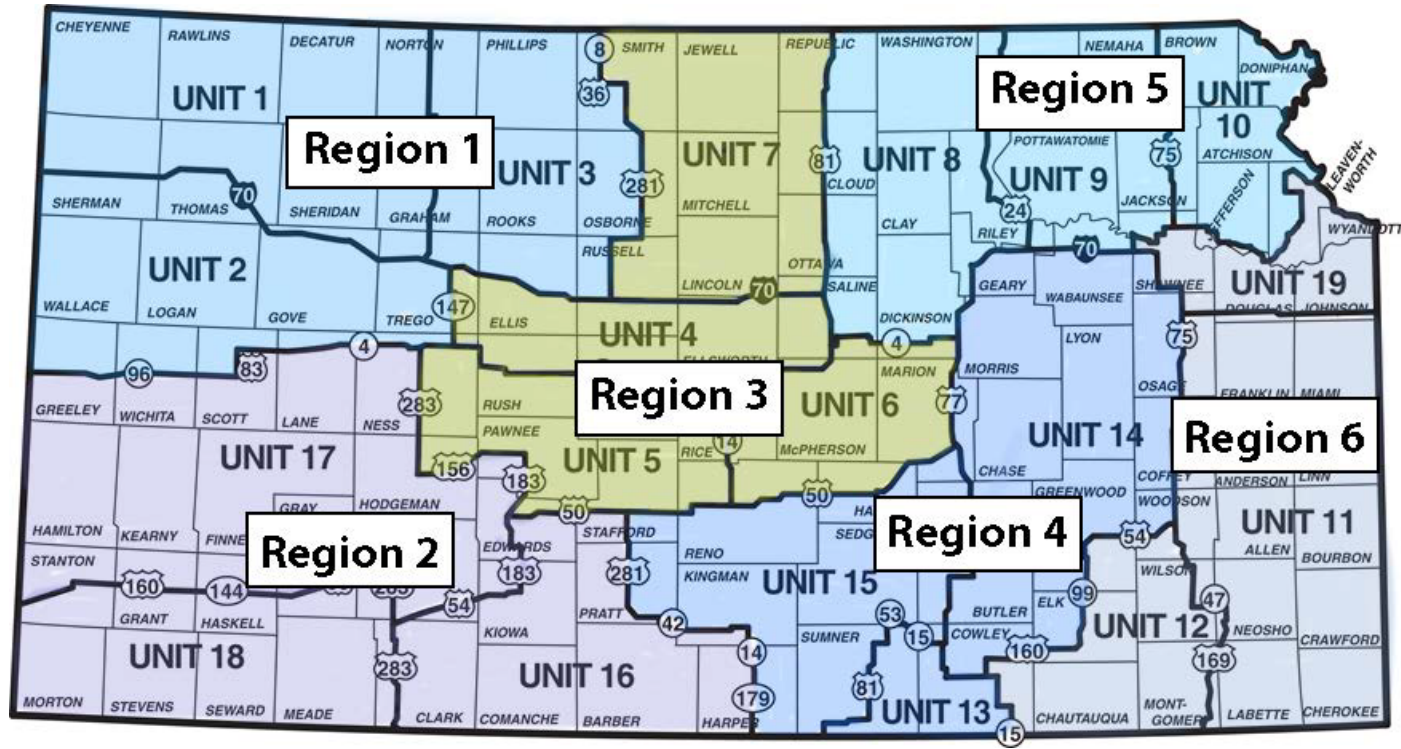


FIGURE 5. MAP OF DEER MANAGEMENT UNITS AS CATEGORIZED INTO SIX REGIONS 2022

TABLE 1. RESPONSE BY DEER MANAGEMENT UNIT AND BY REGIONAL GROUPINGS OF UNITS

Deer Management Unit (DMU)	DMU n	Valid %	Region 2022	Region n
1	32	4.6	1	
2	33	4.8	1	
3	41	5.9	1	106
16	29	4.2	2	
17	35	5.1	2	
18	20	2.9	2	84
4	36	5.2	3	
5	45	6.5	3	
6	29	4.2	3	
7	29	4.2	3	139
13	35	5.1	4	
14	59	8.5	4	
15	42	6.1	4	136
8	36	5.2	5	
9	39	5.6	5	
10	35	5.1	5	110
11	65	9.4	6	
12	37	5.3	6	
19	15	2.2	6	117
Total offering a primary DMU	692	100		
No response	39			
TOTAL	731			

Region 1 has the highest percentage of respondents (51%) reporting that deer caused damage to their land in 2021, as shown in Figure 6. Region 4 has the lowest percentage (36%) reporting damage from deer last year. The three northernmost regions of Kansas have higher percentages reporting damage than the southernmost regions.

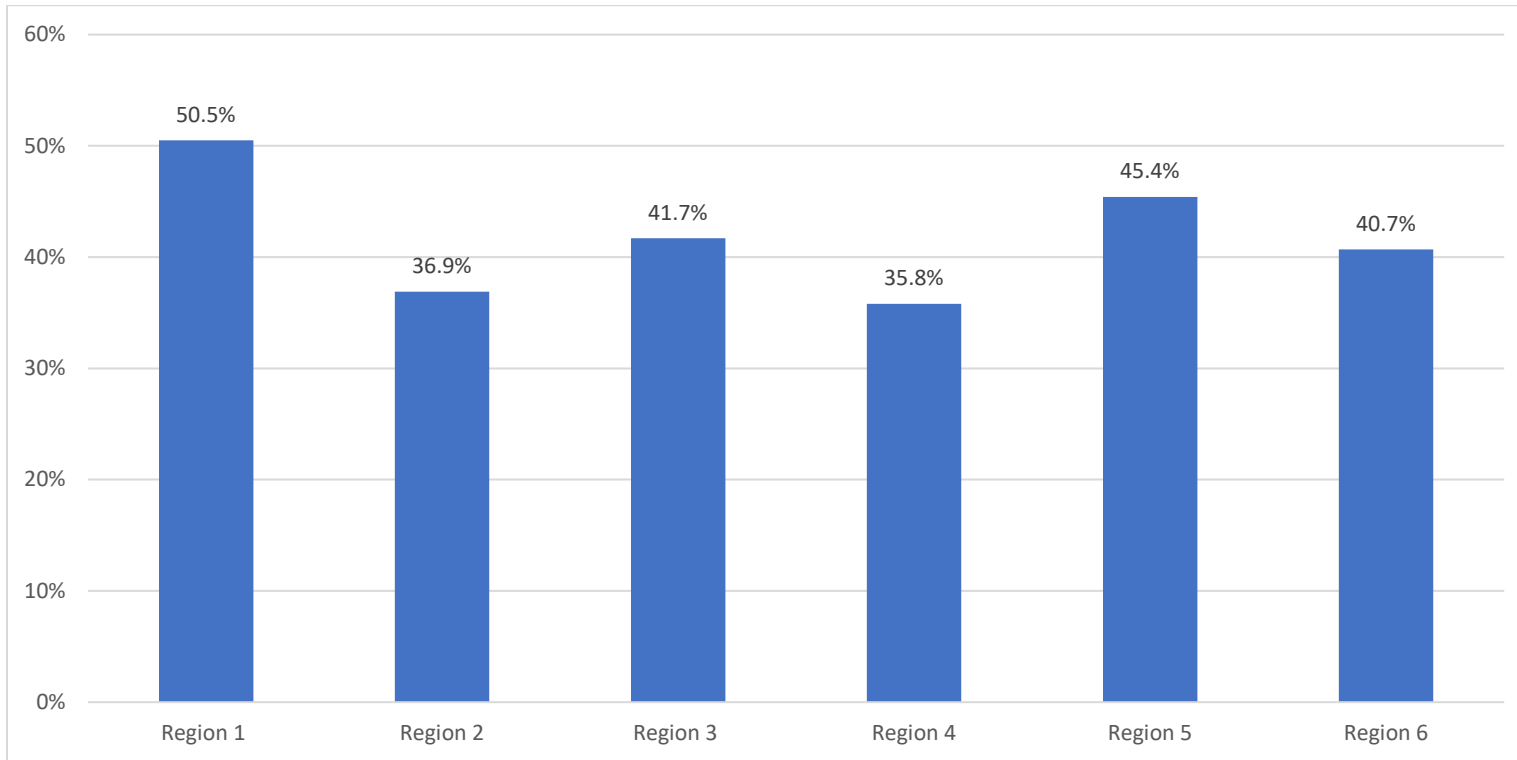


FIGURE 6. PERCENT REPORTING DEER DAMAGE BY REGION

Figure 7 graphs the percentages by region of those who report that someone hunted on their land last deer season. Over 75% of those from four regions report someone hunted deer on their land in the last deer season. The lowest percentages reporting someone hunted deer on their land last year are the two westernmost regions, Region 2 (65%) and Region 1 (73%).

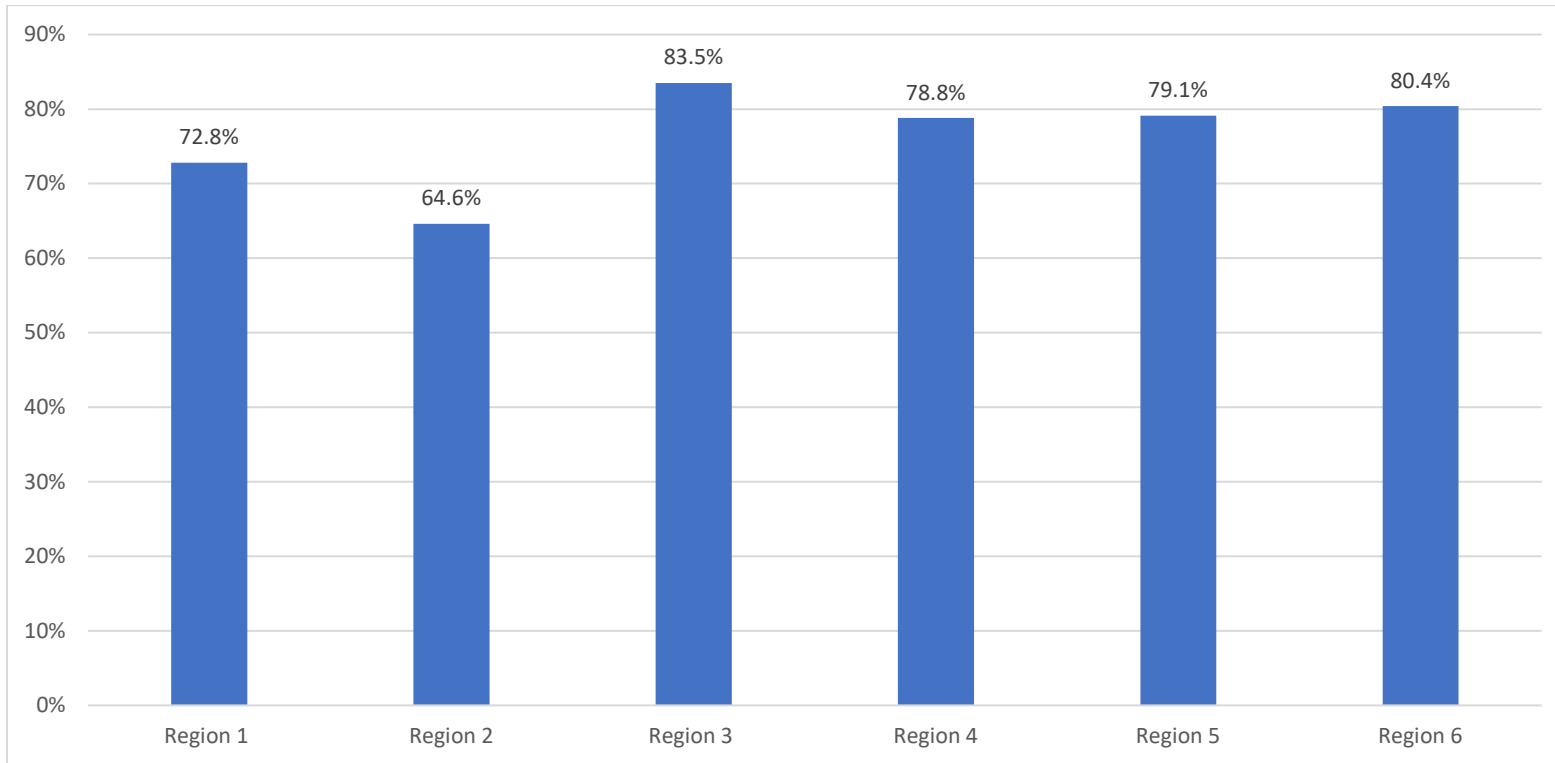


FIGURE 7. PERCENT REPORTING DEER HUNTING OCCURRED ON THEIR LAND LAST SEASON BY REGION

Deer Densities

Respondents were asked to report the average number deer generally on their land in 2021 (see Q2a in Appendix 1) and to report both the estimated total number of antlered bucks (Q2b) and the total number of antlerless deer (Q2c) harvested by hunters on their property last year. For calculations of deer densities from these data, the reported counts were combined with total land area owned or operated by the respondent. The initial density (counts/acre) was converted to a large-scale density value (counts/100 square miles) to provide an overall deer density value. To reduce the influence of substantial outliers on mean large-scale density for each of the three questions, values exceeding the 95th percentile were truncated back to the value at the 95th percentile.

Table 2 reports means of both nontruncated and truncated average deer density per 100 square miles for each region. In terms of the truncated means, Region 1 reports the lowest mean (1,247), and in general, the means increase across the state from the northwest-most region (Region 1 = 1,546) to the southeast-most region (Region 6 = 4,280).

TABLE 2. MEAN DENSITY PER 100 SQUARE MILES OF “AVERAGE NUMBER OF DEER ON YOUR PROPERTY LAST YEAR” BY REGION

Report

Region of State		density100mi	densityper100sq miTRUNCATED
Region 1 DMUs 1 2 3	Mean	1546.7920	1546.7920
	N	74	74
	Std. Error of Mean	233.65203	233.65203
Region 2 DMUs 16 17 18	Mean	1327.8906	1247.9233
	N	61	61
	Std. Error of Mean	324.58028	269.51350
Region 3 DMUs 4 5 6 7	Mean	2682.8942	1999.3430
	N	104	104
	Std. Error of Mean	638.82334	217.62494
Region 4 DMUs 13 14 15	Mean	4635.5660	3087.1554
	N	94	94
	Std. Error of Mean	988.08030	329.32637
Region 5 DMUs 8 9 10	Mean	3308.2727	2416.9394
	N	84	84
	Std. Error of Mean	967.55936	274.80475
Region 6 DMUs 11 12 19	Mean	5495.5179	4280.2444
	N	91	91
	Std. Error of Mean	953.56313	353.98321
Total	Mean	3323.2582	2522.1168
	N	508	508
	Std. Error of Mean	333.64702	125.84708

Figure 8 offers a visualization of dispersion within region of average number of deer on property last year per 100 square miles (the measure of density with outliers truncated back to the 95th percentile value is plotted, reducing the maximum value on the Y axis for better visualization contrasts by region). The dark line inside the boxes is the median. The lower boundary of the box is the 25th percentile and the upper boundary of the box is the 75th percentile, thus, the area in between is the interquartile range where the middle 50% of the distribution lies. The 75th percentile values of density per 100 square miles for four of the regions lies between 2,000 and less than 4,000. The 75th percentile value in Region 2 is substantially lower (well under 2,000), while the 75th percentile value in Region 6 is substantially higher (over 6,000).

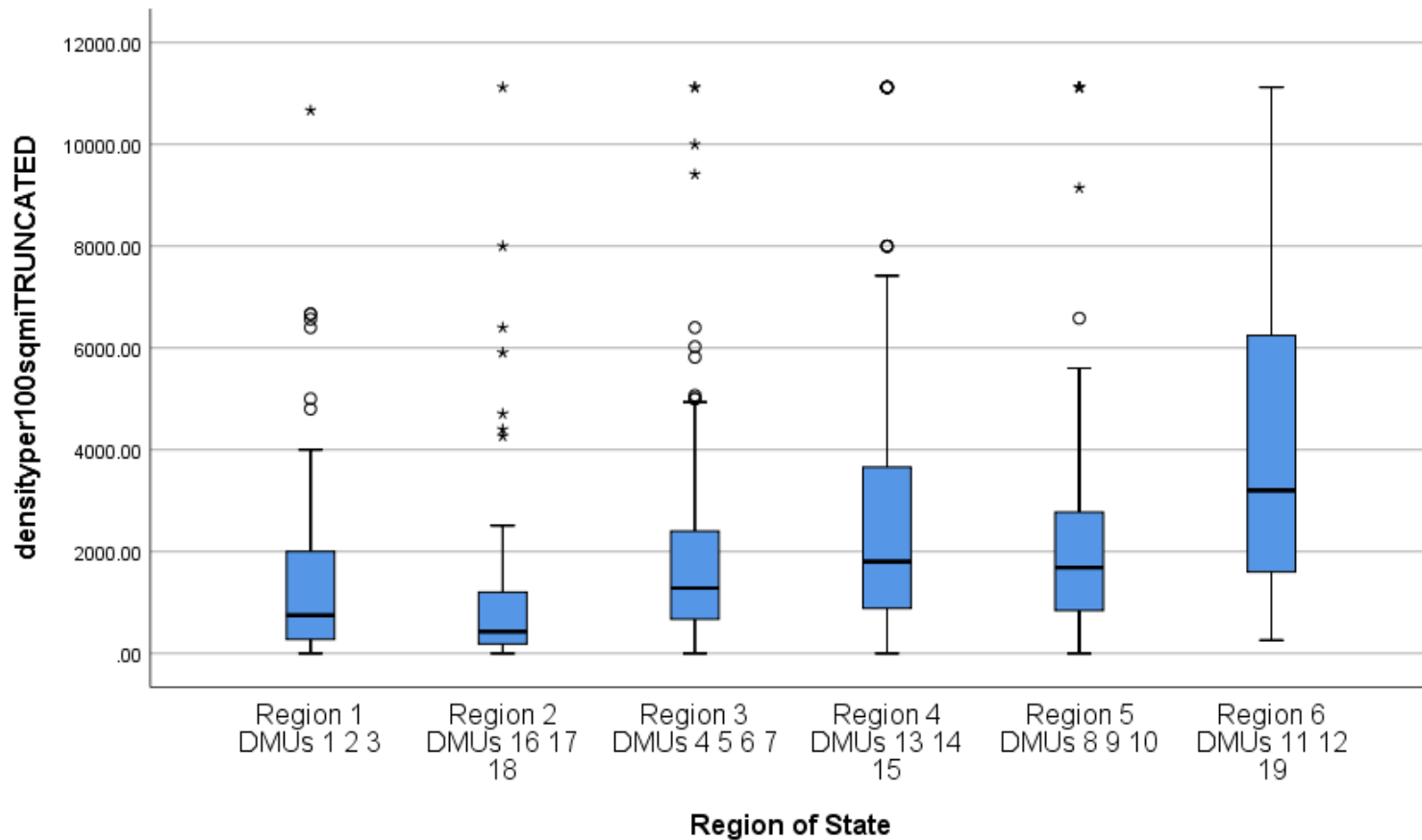


FIGURE 8 VISUALIZING DISPERSION IN “AVERAGE NUMBER OF DEER ON YOUR PROPERTY LAST YEAR” PER 100 mi² WITHIN REGIONS

Table 3 reports means of both nontruncated and truncated total bucks harvested per 100 square miles for each region. In terms of the truncated means, the southwest most region (Region 2) has the lowest mean (54), followed by the northwest most region (Region 1) at 85. From there the mean density of bucks harvested tends to increase progressively across the state from the northwest to the southeast, with the highest mean in Region 6 at 252.

Figure 9 offers a visualization of dispersion within region of total bucks harvested per 100 square miles (the measure of density with outliers truncated back to the 95th percentile value is plotted, reducing the maximum value on the Y axis for better visualization contrasts by region). The dark line inside the boxes is the median. The lower boundary of the box is the 25th percentile and the upper boundary of the box is the 75th percentile, thus, the area in between is the interquartile range where the middle 50% of the distribution lies. The 75th percentile values of density per 100 square miles for four of the regions lies below 200. The 75th percentile value in Region 2 is substantially lower than all others, while the 75th percentile value in Region 6 is substantially higher at over 400.

TABLE 3. MEAN DENSITY PER 100 SQUARE MILES OF TOTAL BUCKS HARVESTED ON PROPERTY LAST YEAR BY REGION

Report		denbuckper100s
		qmiTRUNCATE
Region of State	denbuck100mi	D
Region 1 DMUs 1 2 3	Mean	104.9355
	N	70
	Std. Error of Mean	33.27432
Region 2 DMUs 16 17 18	Mean	56.0983
	N	63
	Std. Error of Mean	19.59045
Region 3 DMUs 4 5 6 7	Mean	113.4878
	N	107
	Std. Error of Mean	19.18545
Region 4 DMUs 13 14 15	Mean	168.2196
	N	106
	Std. Error of Mean	23.86139
Region 5 DMUs 8 9 10	Mean	128.5446
	N	87
	Std. Error of Mean	25.31892
Region 6 DMUs 11 12 19	Mean	321.8776
	N	100
	Std. Error of Mean	52.94124
Total	Mean	158.0212
	N	533
	Std. Error of Mean	13.76640

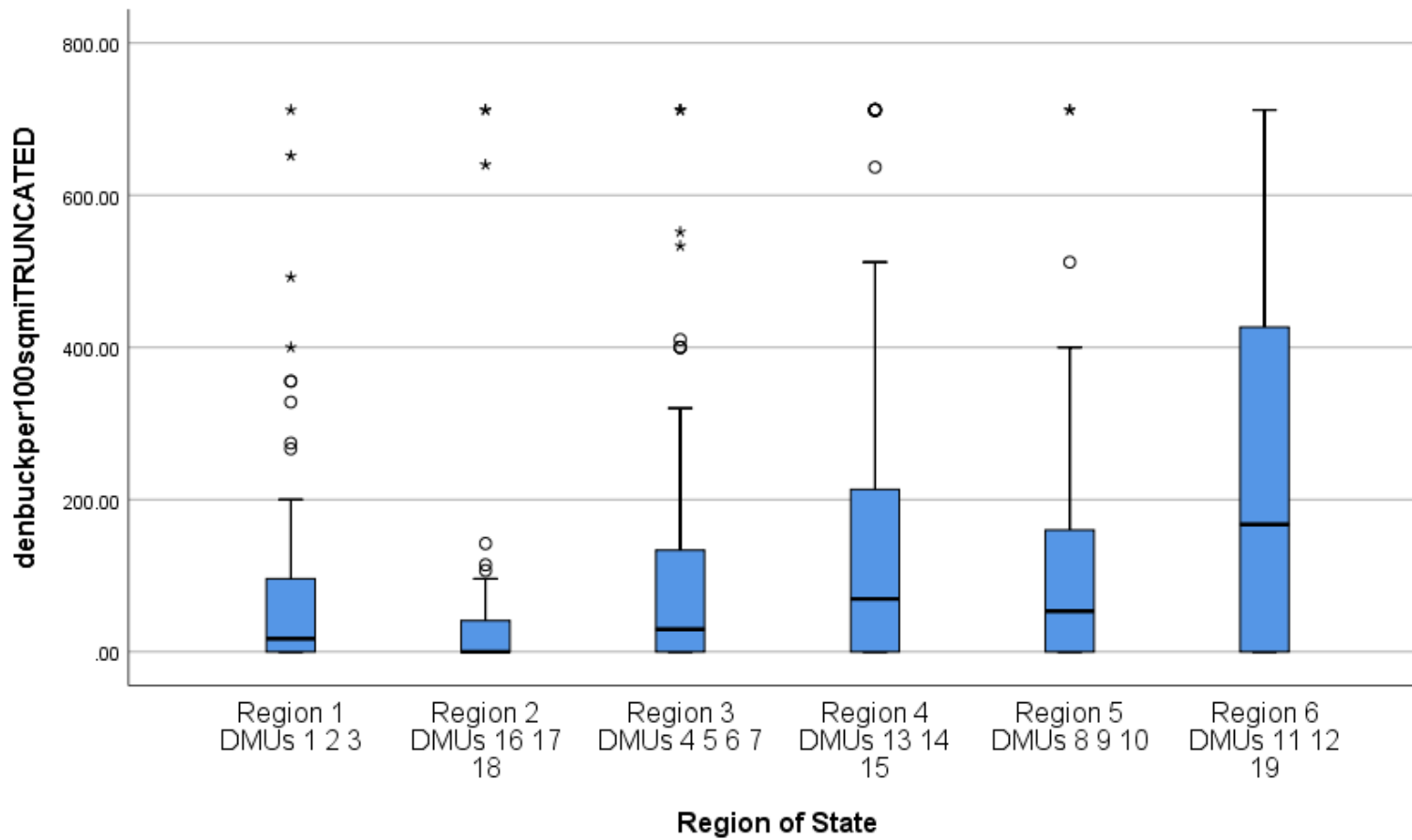


FIGURE 9. VISUALIZING DISPERSION IN TOTAL BUCKS HARVESTED ON PROPERTY LAST YEAR PER 100 MI² WITHIN REGIONS

Table 4 reports means of both nontruncated and truncated total antlerless deer harvested density per 100 square miles for each region. In terms of the truncated means, the southwest most region (Region 2) has the lowest mean (45), followed by the northwest most region (Region 1) at 102. From there the mean density of antlerless deer harvested tends increase progressively across the state from the northwest to the southeast, with the highest mean in Region 6 at 211.

Figure 10 offers a visualization of dispersion within region of total antlerless deer harvested density per 100 square miles (the measure of density with outliers truncated back to the 95th percentile value is plotted, reducing the maximum value on the Y axis for better visualization contrasts by region). The dark line inside the boxes is the median. The lower boundary of the box is the 25th percentile and the upper boundary of the box is the 75th percentile, thus, the area in between is the interquartile range where the middle 50% of the distribution lies. The 75th percentile values of density per 100 square miles for four of the regions lies below 200. The 75th percentile value in Region 2 is substantially lower than all others, while the 75th percentile value in Region 6 is substantially higher – over 300.

TABLE 4. MEAN DENSITY PER 100 SQUARE MILES OF TOTAL ANTLERLESS DEER HARVESTED ON PROPERTY LAST YEAR BY REGION

Report		dendoeper100s	qmiTRUNCATE
Region of State		dendoe100mi	D
Region 1 DMUs 1 2 3	Mean	140.2001	102.1802
	N	67	67
	Std. Error of Mean	44.79120	23.22668
Region 2 DMUs 16 17 18	Mean	44.6150	44.6150
	N	63	63
	Std. Error of Mean	17.10495	17.10495
Region 3 DMUs 4 5 6 7	Mean	113.3627	112.9151
	N	105	105
	Std. Error of Mean	18.92911	18.77767
Region 4 DMUs 13 14 15	Mean	220.7315	180.7479
	N	99	99
	Std. Error of Mean	39.23428	26.41959
Region 5 DMUs 8 9 10	Mean	116.7797	109.9464
	N	84	84
	Std. Error of Mean	24.03635	20.79116
Region 6 DMUs 11 12 19	Mean	290.1611	211.1739
	N	96	96
	Std. Error of Mean	51.84505	27.44749
Total	Mean	162.6938	134.0761
	N	514	514
	Std. Error of Mean	15.16511	9.83203

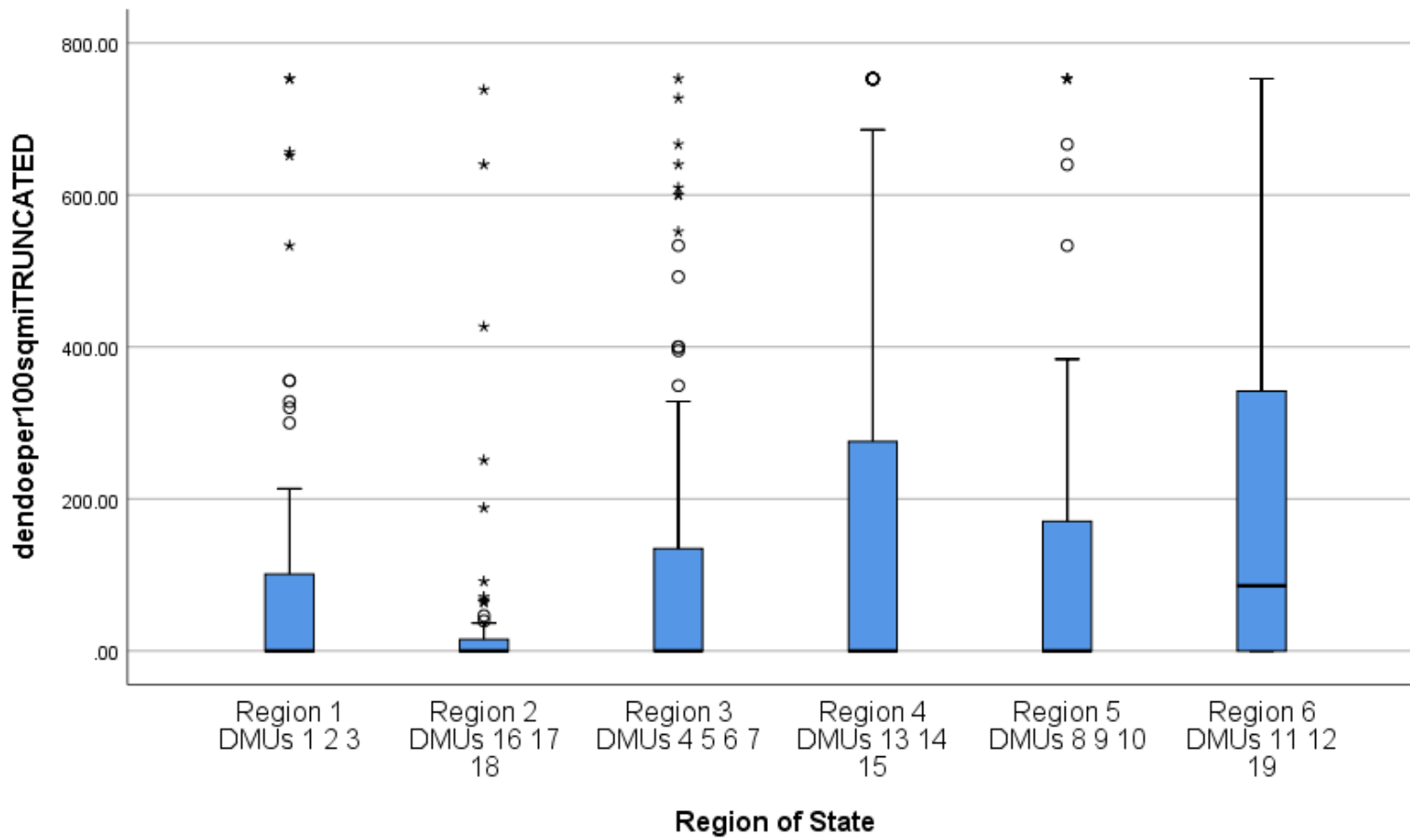


FIGURE 10. VISUALIZING DISPERSION IN TOTAL ANTLERLESS DEER HARVESTED ON PROPERTY LAST YEAR PER 100 MI² WITHIN REGIONS

Perceived Three- and One-Year Population Changes

Figure 11 graphs response to a question about whether the deer population on the respondent’s land has decreased, remained the same, or increased over the past three years, 2019-2021 (see Q1b in Appendix 1). Regions with the single largest percentage reporting a decrease are Region 1 (48%) and Region 5 (33%). Regions with the single largest percentage indicating remained the same are Region 2 (34%), Region 3 (36%), and Region 4 (38%). Only Region 6 had the single largest percentage (46%) reporting an increase.

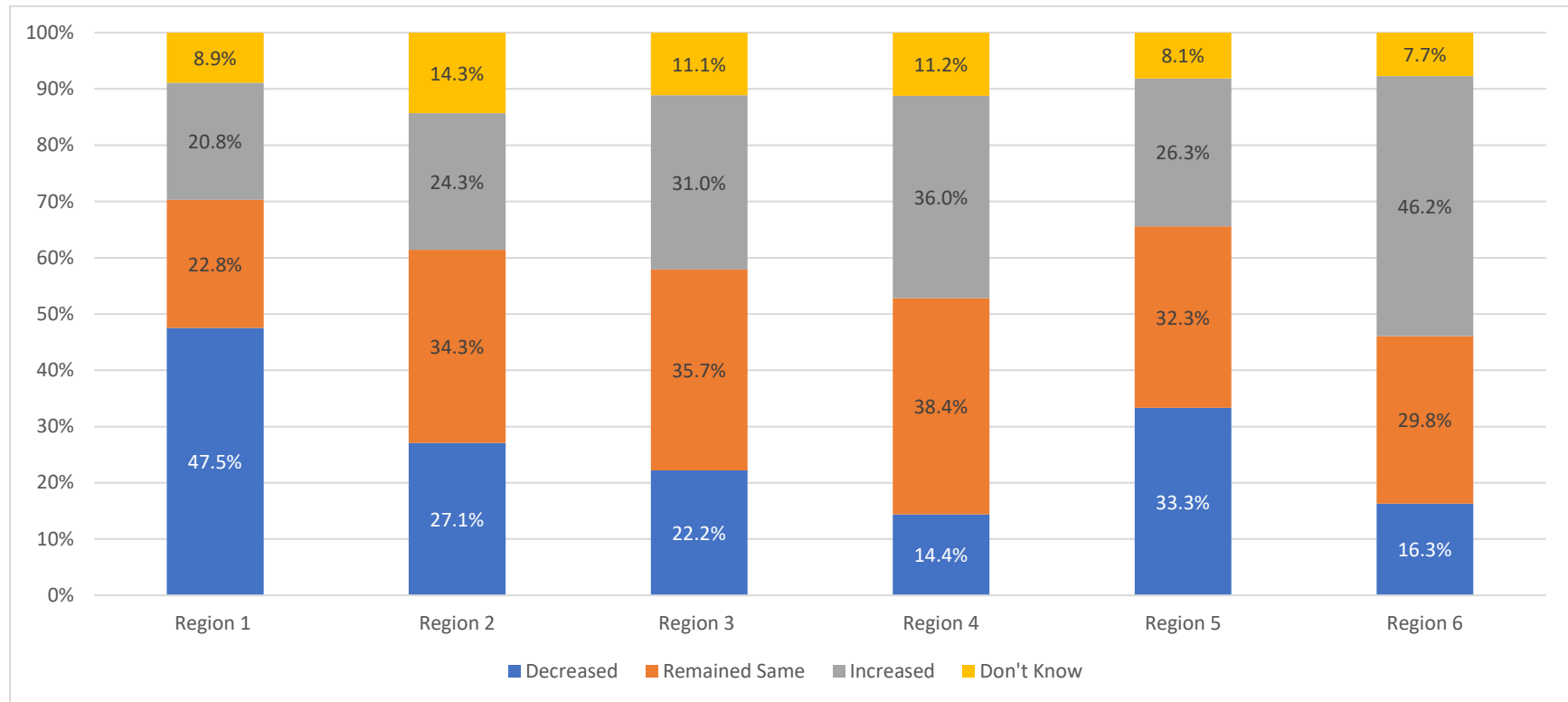


FIGURE 11. PERCEIVED THREE-YEAR CHANGE IN DEER POPULATION (2019-2021) BY REGION

Figure 12 shows those reporting damage are much more likely to report an increase (46%) in the three-year change in deer population than those not experiencing damage (20%).

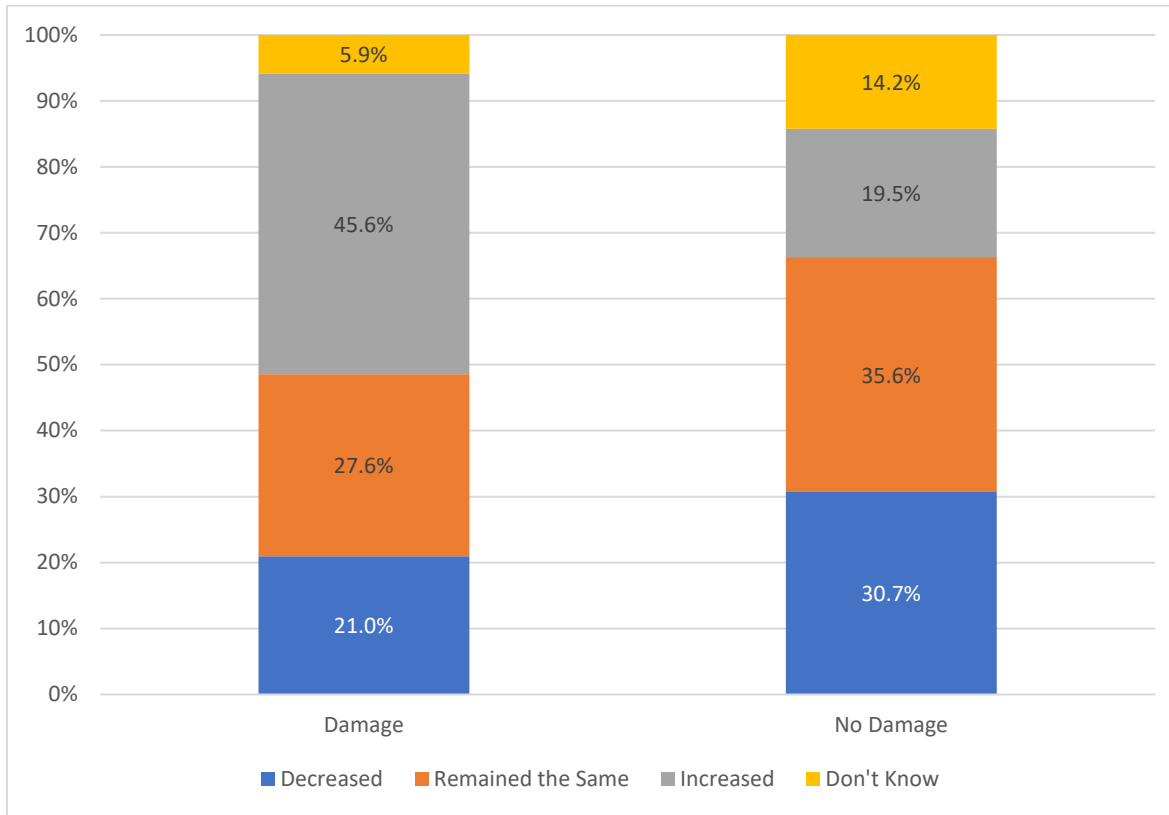


FIGURE 12. PERCEIVED THREE-YEAR CHANGE IN DEER POPULATION (2019-2021) BY EXPERIENCING DAMAGE IN 2021

As shown in Figure 13, those with land that was hunted last year are much more likely to report that the deer population increased (34%) compared to those whose land was not hunted (19%). Those whose land was not hunted had a much higher “don’t know” response (21%) than those whose land was hunted (7%).

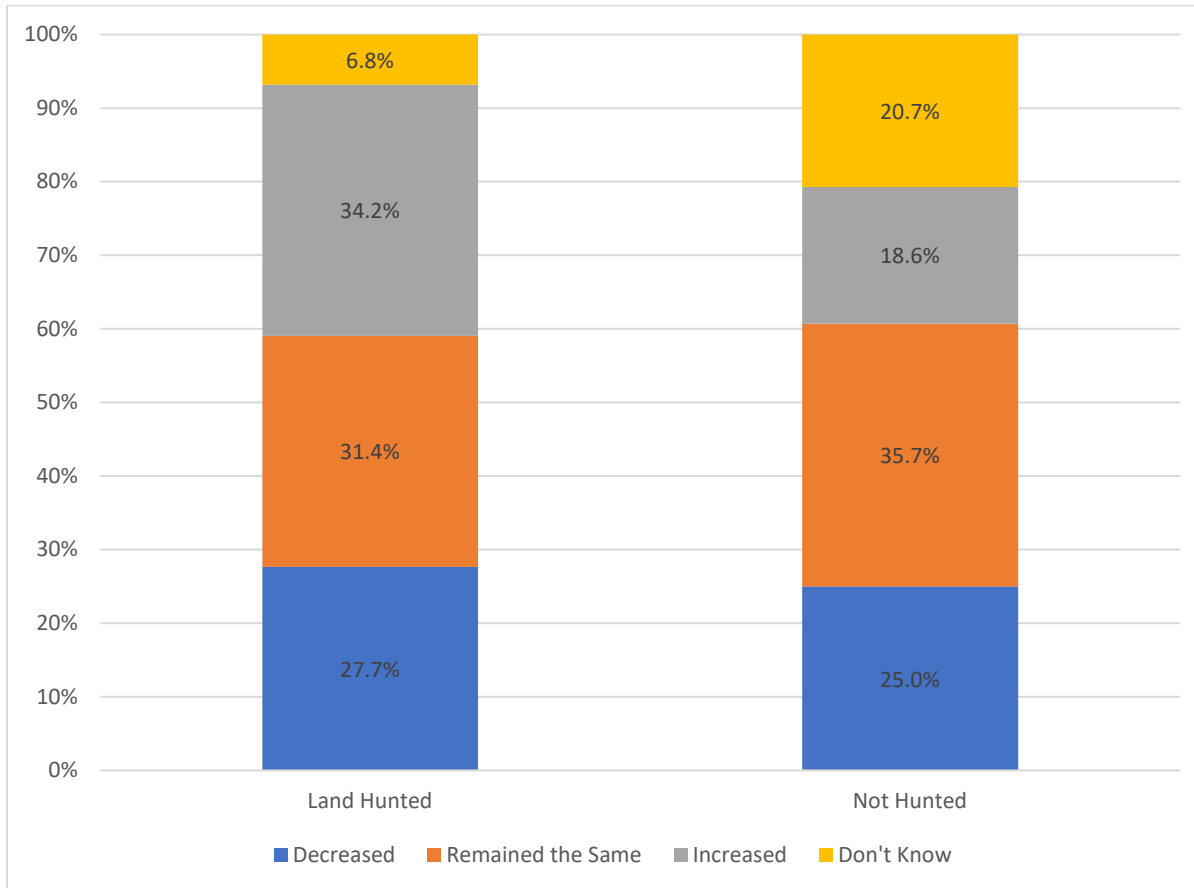


FIGURE 13. PERCEIVED THREE-YEAR CHANGE IN DEER POPULATION (2019-2021) BY LAND HUNTED LAST SEASON

Figure 14 graphs response to a question about whether the deer population on the respondent’s land has decreased, remained the same, or increased “since this time last year” (see Q1a in Appendix 1). The only region in which the single largest percentage report a decrease is Region 1 (39%). In all other regions the single largest percentage indicate the population has remained the same. By far the largest percentage indicating a population increase is in Region 6 (35.7%).

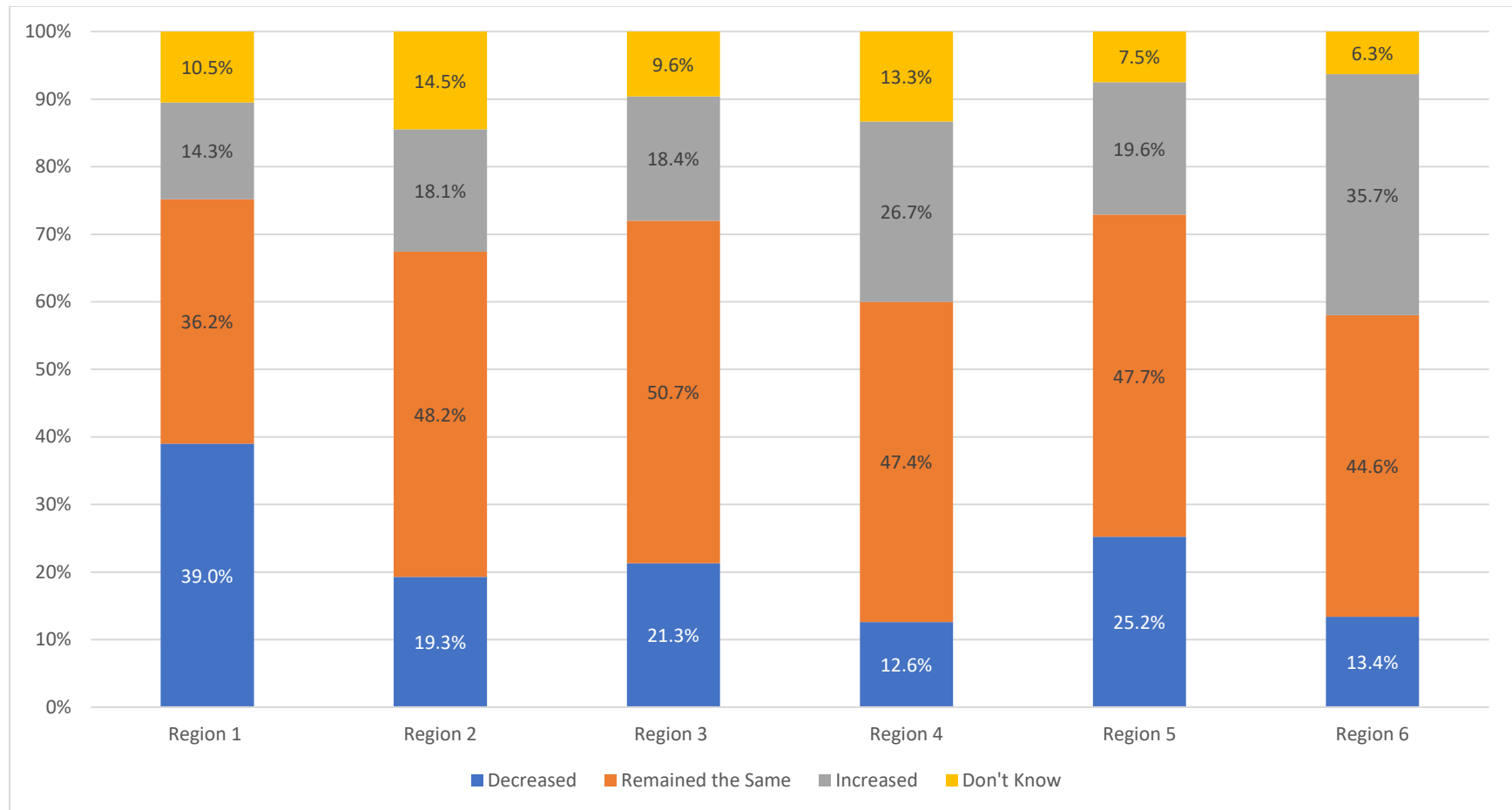


FIGURE 14. PERCEIVED ONE-YEAR CHANGE IN DEER POPULATION BY REGION

As shown in Figure 15, those reporting damage are much more likely to report an increase (34%) in the one-year change in deer population than those not experiencing damage (13%).

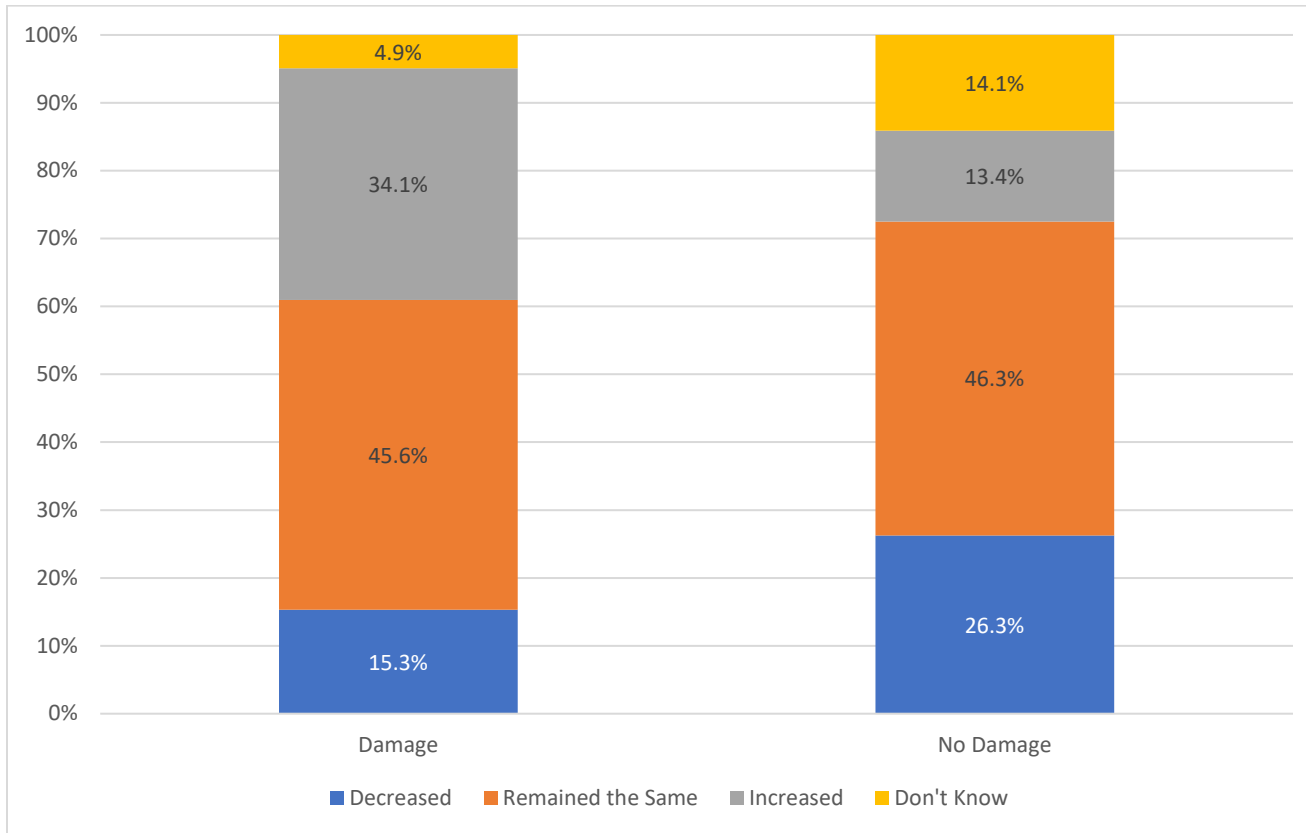


FIGURE 15. PERCEIVED ONE-YEAR CHANGE IN DEER POPULATION BY EXPERIENCING DAMAGE IN 2021

Figure 16 shows those with land that was hunted last year are much more likely to report that the deer population increased in the last year (25%) than those whose land was not hunted (12%). Those whose land was not hunted had a much higher “don’t know” response (20%) than those whose land was hunted (7%).

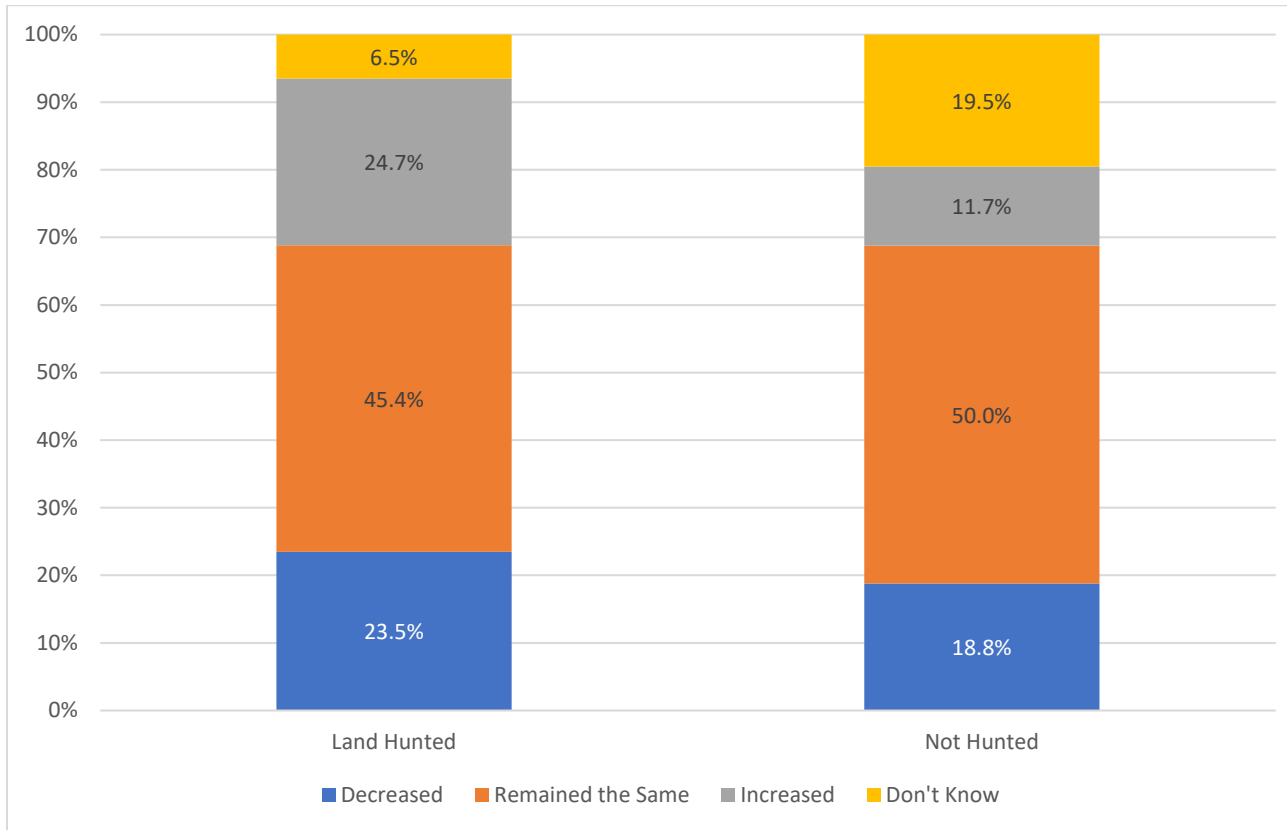


FIGURE 16. PERCEIVED ONE-YEAR CHANGE IN DEER POPULATION BY LAND HUNTED LAST SEASON

Quantity of Deer Wanted on Land

When asked how many deer they wanted on their land, Figure 17 show that the single largest percentage in each region prefer the number of deer on their land remain the same. Fewer than 20% in Regions 4 (16%) and 6 (19%) want more, while the largest percentages wanting no deer are found in Regions 2 (12%) and 1 (12%).

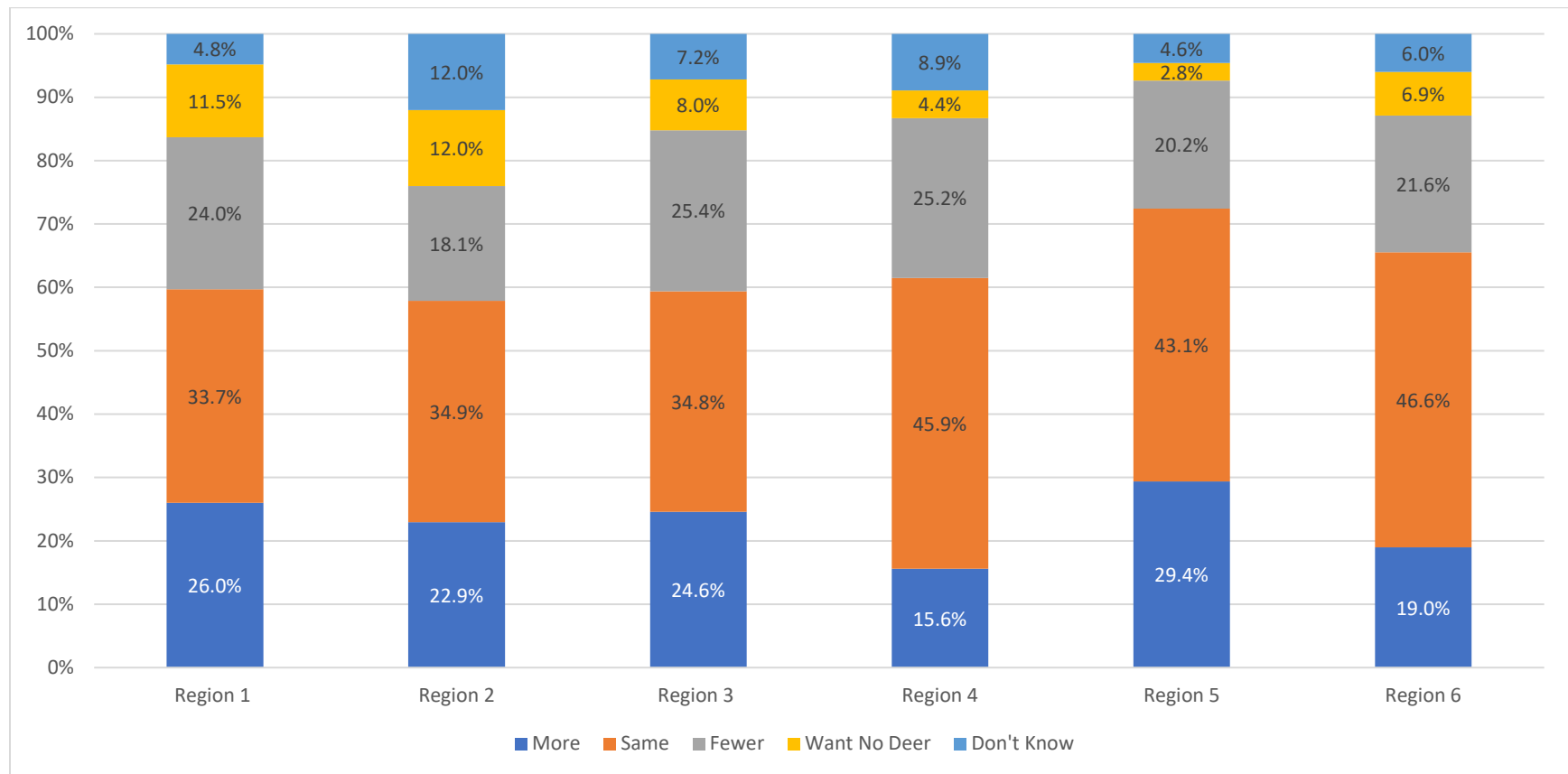


FIGURE 17. QUANTITY OF DEER WANTED ON LAND BY REGION

Figure 18 shows a higher percentage of those with damage prefer no deer (14%) than those with no damage (3%), and a markedly higher percentage of those with damage want fewer deer (41%) than those with no damage (10%).

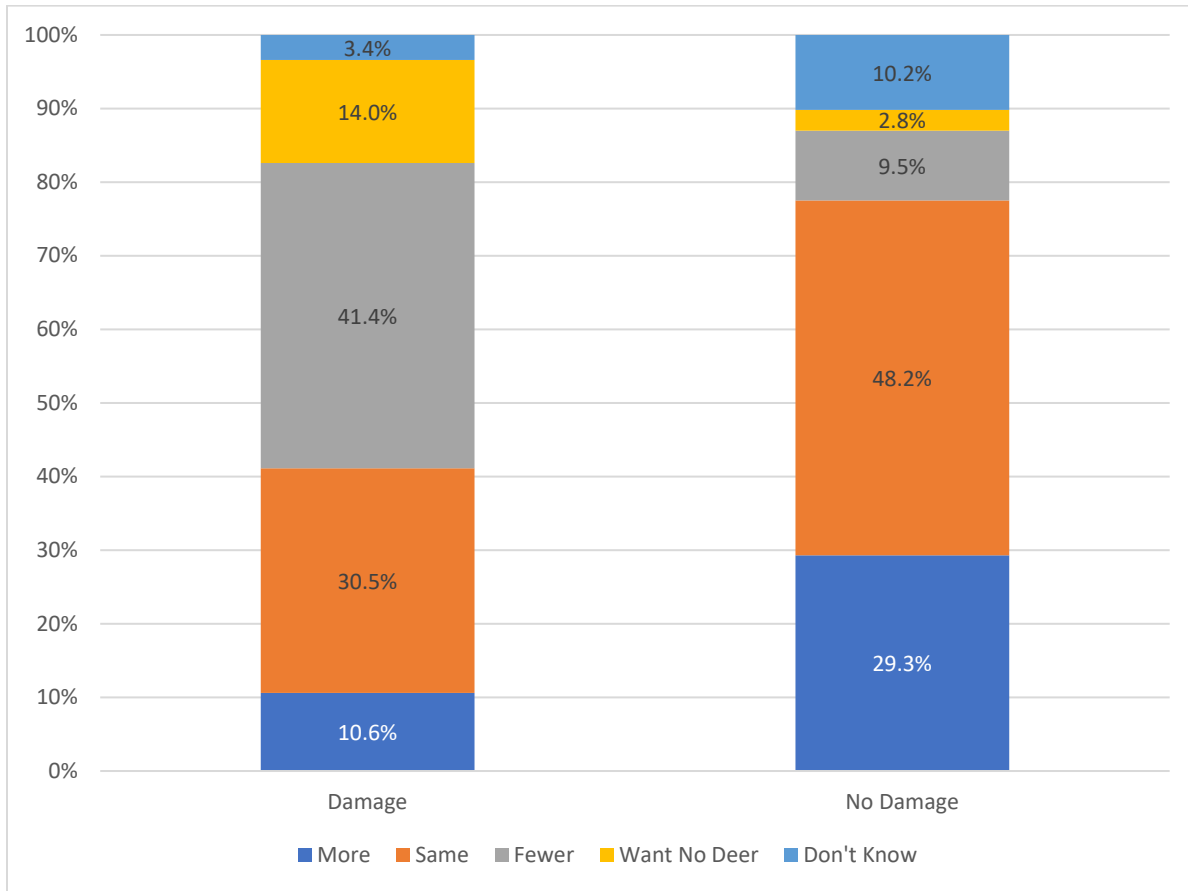


FIGURE 18. QUANTITY OF DEER WANTED ON LAND BY EXPERIENCING DAMAGE IN 2021

Larger percentages of those whose land was hunted last year want fewer deer (25%) compared to those whose land was not hunted (15%), as Figure 19 shows.

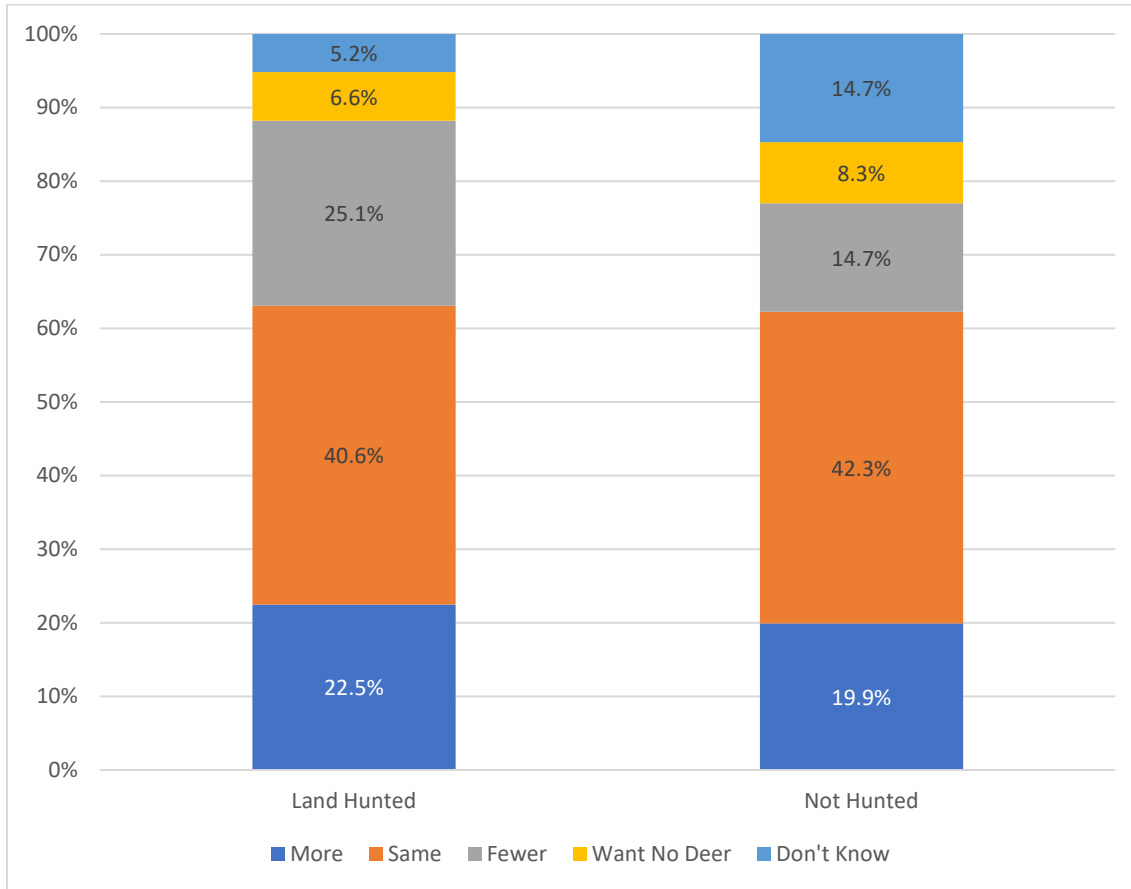


FIGURE 19. QUANTITY OF DEER WANTED BY LAND HUNTED LAST SEASON

General Attitude Toward Presence of Deer

Figure 20 graphs respondents' general feelings about having deer on and around their property (see Q4 in Appendix 1). The largest single percentage response in every region except for Region 1 is "I enjoy having deer around," and this is a majority response in Regions 4, 5, and 6. The second most common response in all but Region 1 is "I enjoy having deer around, but they cause problems at the same time." In Region 1, these two answers have equal response at 37%, each.

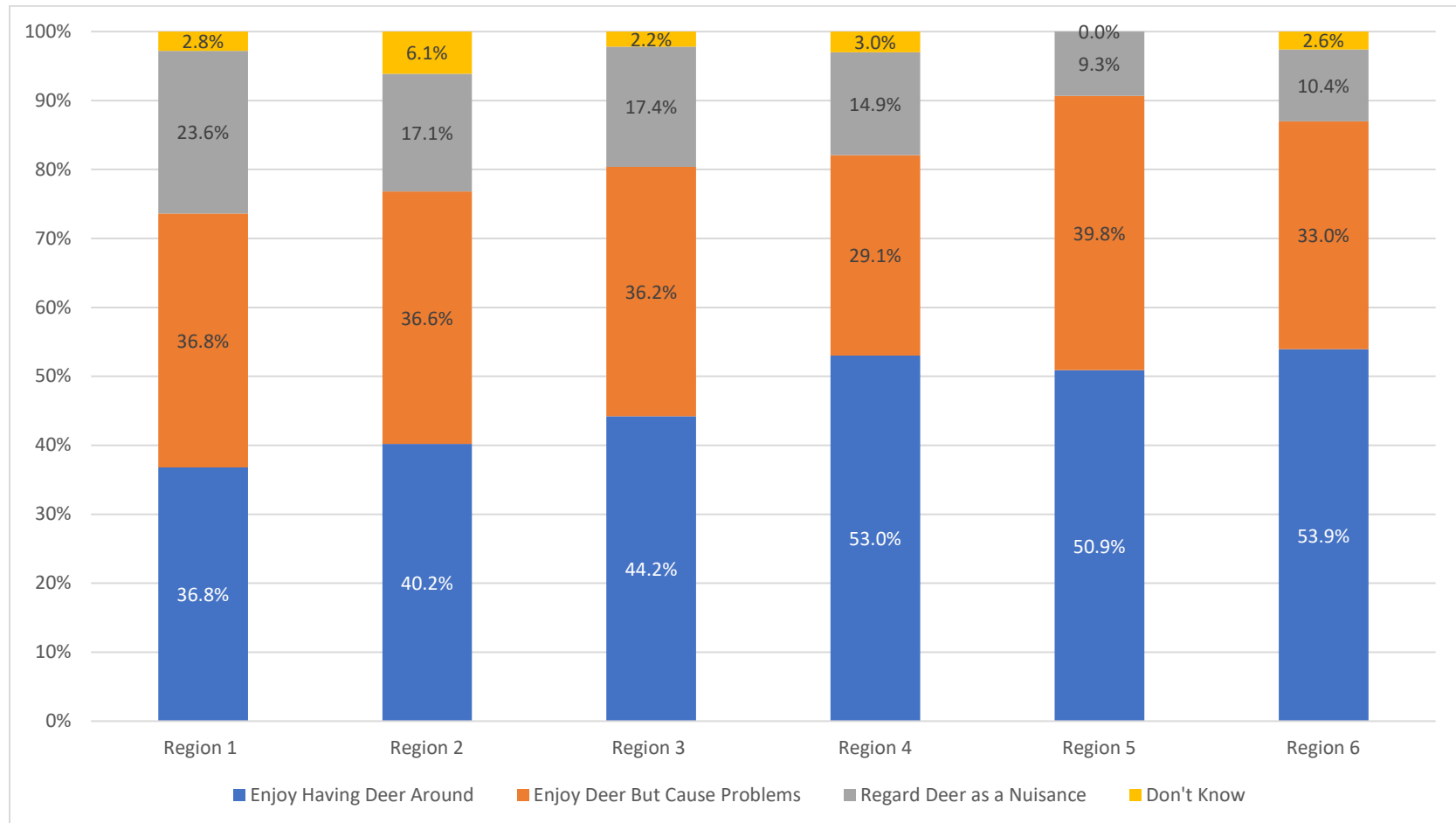


FIGURE 20. GENERAL ATTITUDES ABOUT HAVING DEER ON AND AROUND PROPERTY BY REGION

Figure 21 shows that response is substantially different by damage status. Only 20% of those reporting damage from deer last year enjoy having deer around compared to 67% of those with no damage. On the other end of the answer spectrum, 31% of those with damage regard deer as a nuisance while only 4% of those with no damage do so.

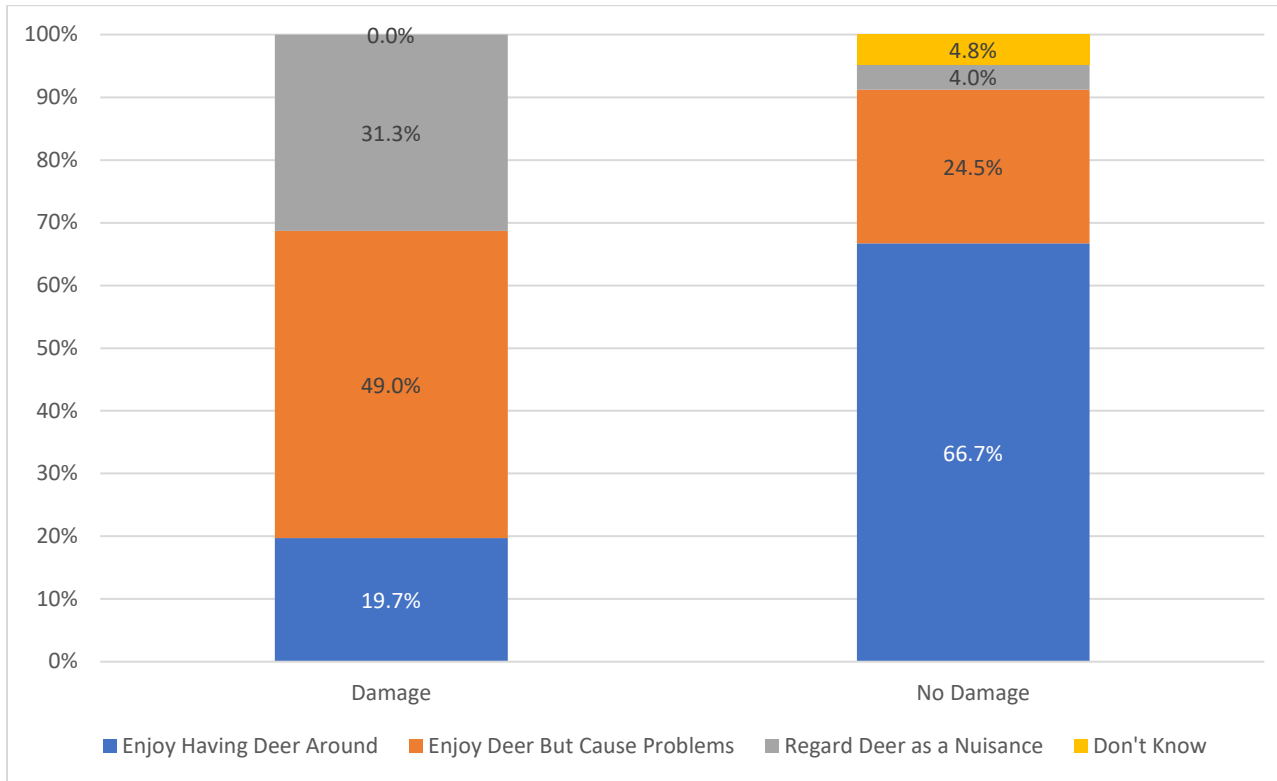


FIGURE 21. GENERAL ATTITUDES ABOUT HAVING DEER ON AND AROUND PROPERTY BY EXPERIENCING DAMAGE IN 2021

There is little difference in general attitudes about having deer on and around one’s property among those who report that someone hunted on their land last season compared to those who report that nobody hunted on their land, as shown in Figure 22.

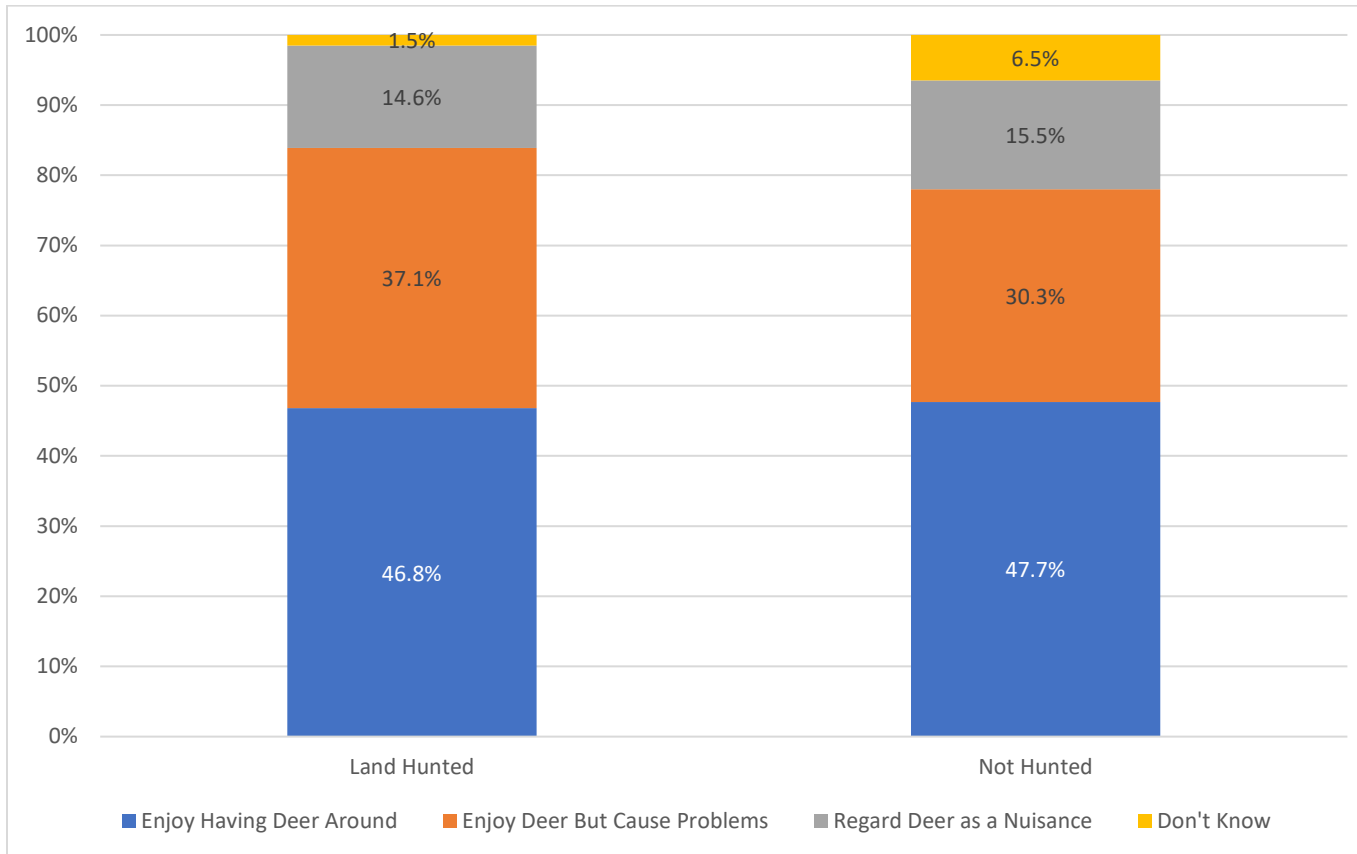


FIGURE 22. GENERAL ATTITUDES ABOUT HAVING DEER ON AND AROUND PROPERTY BY LAND HUNTED LAST SEASON

Habitat Enhancement Practices

It is interesting to know whether landowners tend to engage in certain habitat management enhancements that may result in a higher presence of deer. Five habitat management enhancement practices were presented to respondents, and they were asked to indicate whether on their land: 1) I do this, 2) someone else does this, or 3) no one does this (see the Q22 series in Appendix 1). The combined percentage of those who offered an affirmative response of either “I do this” or “someone else does this” is graphed in Figure 23. Among all habitat enhancement practices offered, placing feeders out for deer is the top practice in four of the six regions, and creating salt or mineral licks for deer is typically the second most often indicated practice. Overall, respondents from Regions 4 and 6 are the most engaged in habitat enhancements.

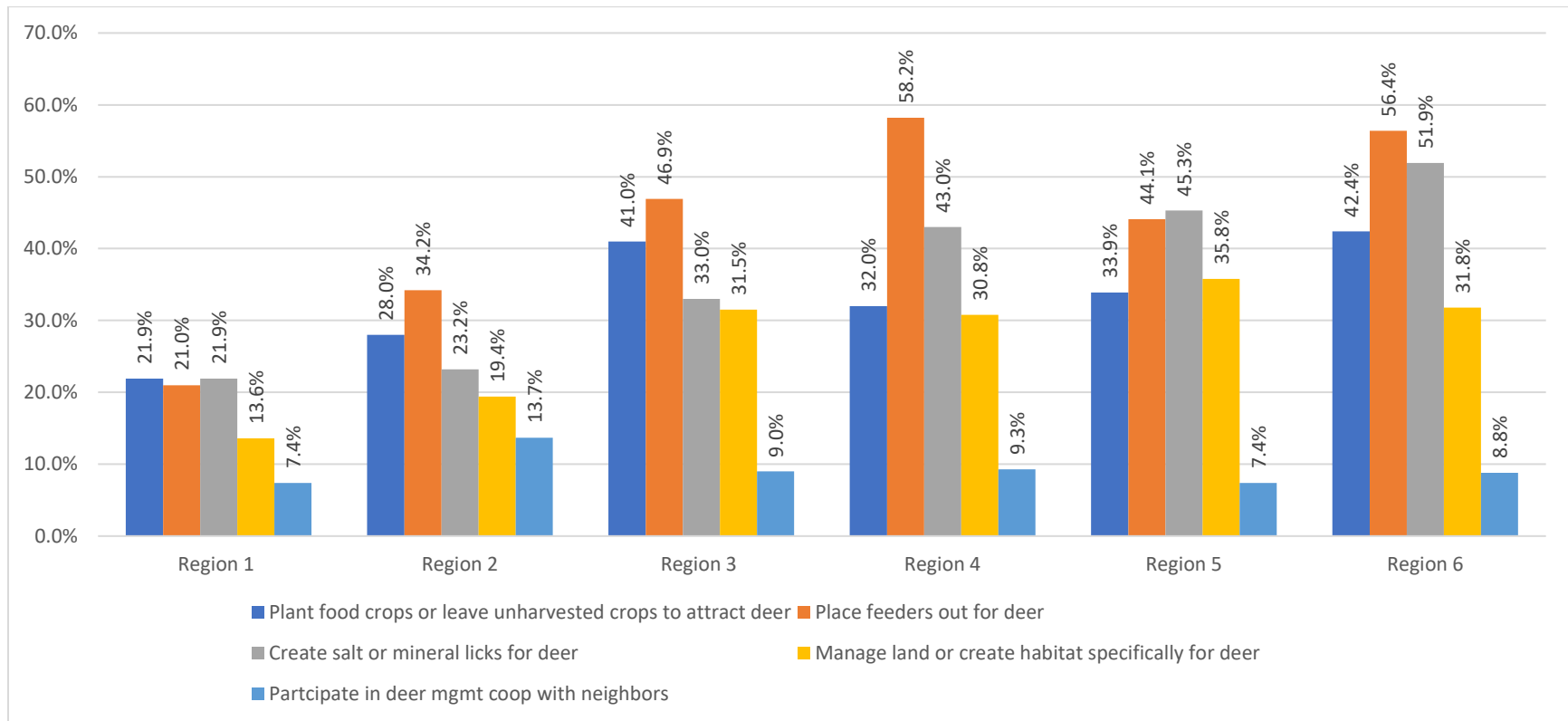


FIGURE 23. DEER HABITAT ENHANCEMENTS OCCURRING ON RESPONDENT’S LAND BY REGION

Figure 24 graphs affirmative response for those who do not report damage and those who do report deer damage to their land in 2021, and differences are small. Practicing three of the five types of habitat management is somewhat higher among those who report no deer damage, while those who report damage participated at slightly higher levels in “placing feeders out for deer” and in “deer management cooperation with neighbors” than those reporting no damage.

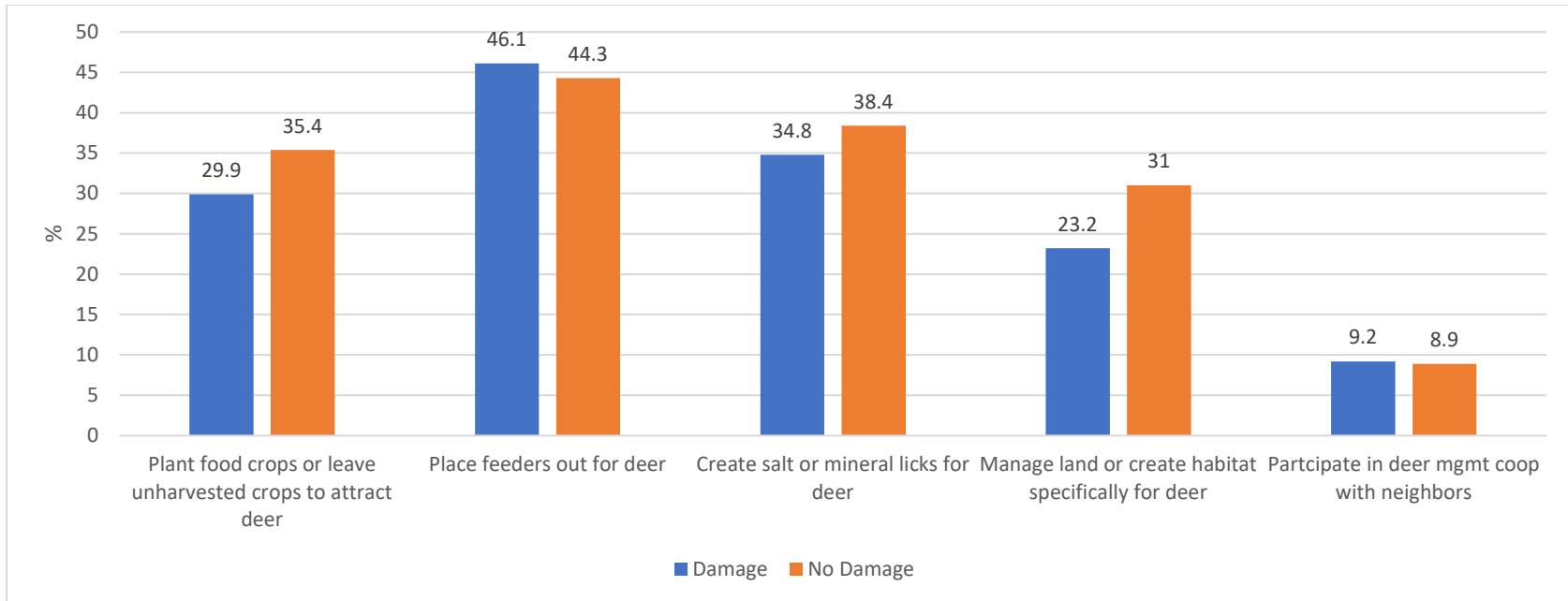


FIGURE 24. DEER HABITAT ENHANCEMENTS OCCURRING ON RESPONDENT’S LAND BY EXPERIENCING DAMAGE IN 2021

Perhaps expectedly, Figure 25 shows that with respect to all but one deer habitat enhancement practice, those who indicate their land was hunted by someone last season report much higher levels of habitat enhancement practices on their land than those who indicate nobody hunted deer on their land. Over half (54%) of those whose land was hunted affirmatively responded that they or someone else placed deer feeders, while only 16% of those whose land was not hunted indicated such.

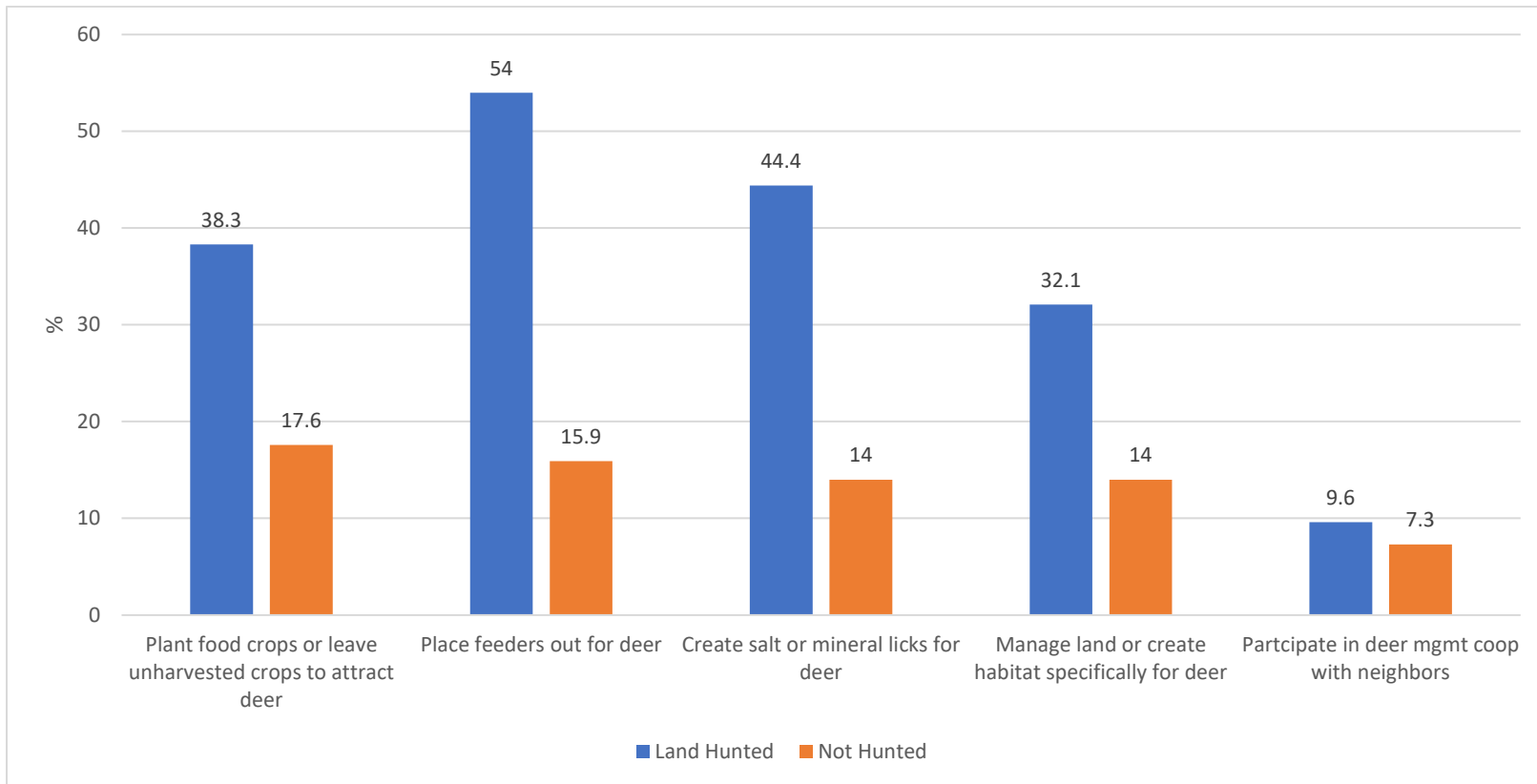


FIGURE 25. DEER HABITAT ENHANCEMENTS OCCURRING ON RESPONDENT'S LAND BY LAND HUNTED LAST SEASON

Follow-Up Questions for Those Reporting Deer Damage in 2021

The 41% of respondents who reported deer damage last year (see Figure 1 above) were asked a series of follow-up questions regarding overall extent of damage (see Figure 2 above), extent of damage by type (Q8 series Appendix 1), use of lethal means to limit damage (Q9 series Appendix 1), use of non-lethal means to reduce damage (Q10 series Appendix 1), and perception of overall effectiveness at limiting deer damage (Q12 Appendix 1). An analysis of statistically significant differences on these items across regions was conducted. Statistical analysis suggests the following:

- There is no significant difference in the overall extent of damage by region.
- In terms of the Q8 series of questions assessing levels of particular types of damage, there are three types of damage that differ slightly by region, [1] **damage to temporary electric fences** is more likely to be a problem in Regions 1, 2, and 3 (Cramer's $V=.227$, $p=.006$), [2] **damage to permanent fence** is reported to be less of a problem in Region 5 (Cramer's $V=.203$, $p=0.25$), and [3] **damage to windbreaks or shelter-belt trees** is more likely to be a problem in Regions 1, 2, and 3 (Cramer's $V=.234$, $p=.003$).
- Only Walk-In Hunting Area (WIHA) Enrollment is significantly different by region among the Q9 series of questions, with **WIHA enrollment** being higher in Regions 1 and 3 (Cramer's $V=.216$, $p=.036$).
- From the Q10 series asking about non-lethal attempts to reduce deer damage, the only statistically significant difference by region is **leasing to someone other than KDWP for WIHA**, with Regions 4 (36%) and 6 (26%) being higher than the others.
- There is no significant difference by region in perceived effectiveness at limiting deer damage in the previous year.

Follow-up Questions When Deer Hunting Occurred on Land Last Deer Season

The 77% of respondents who reported that hunting occurred on their land last deer season (Figure 7 above shows response by region) were presented with a list of types of people and asked whether each hunted on their land during the last season. Response to this follow-up set (see Q19 series in Appendix 1) is graphed in Figures 26 and 27. Of the eight types of people presented, the four types that respondents most frequently reported hunted on their land are graphed in Figure 26. “Invited friends/relatives” and “immediate family” are the two most frequently occurring in Regions 3, 4, 5, and 6. Both of those types occur frequently in Regions 1 and 2, but “some who ask” is also high in those two regions. “Some who ask” gets progressively lower moving from west to east across the state.

Figure 27 show response for the four least mentioned types of people, with affirmative response lower than 30% in all regions. “All who ask” is higher in Regions 1 and 2 than other regions, and “hunting lessees” is relatively low in Region 1.

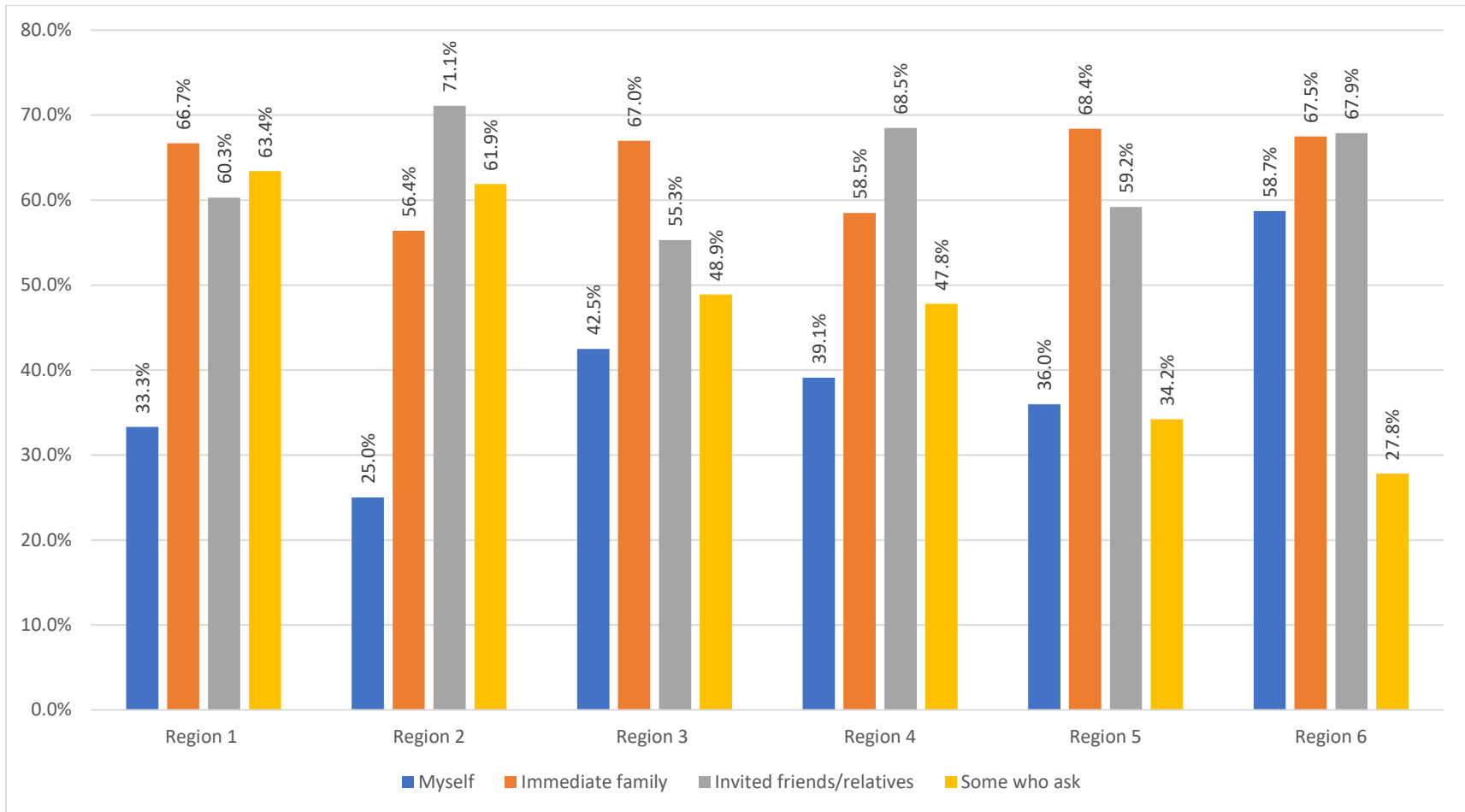


FIGURE 26. TYPES OF PEOPLE WHO HUNTED WHERE DEER HUNTING OCCURRED ON LAND LAST DEER SEASON

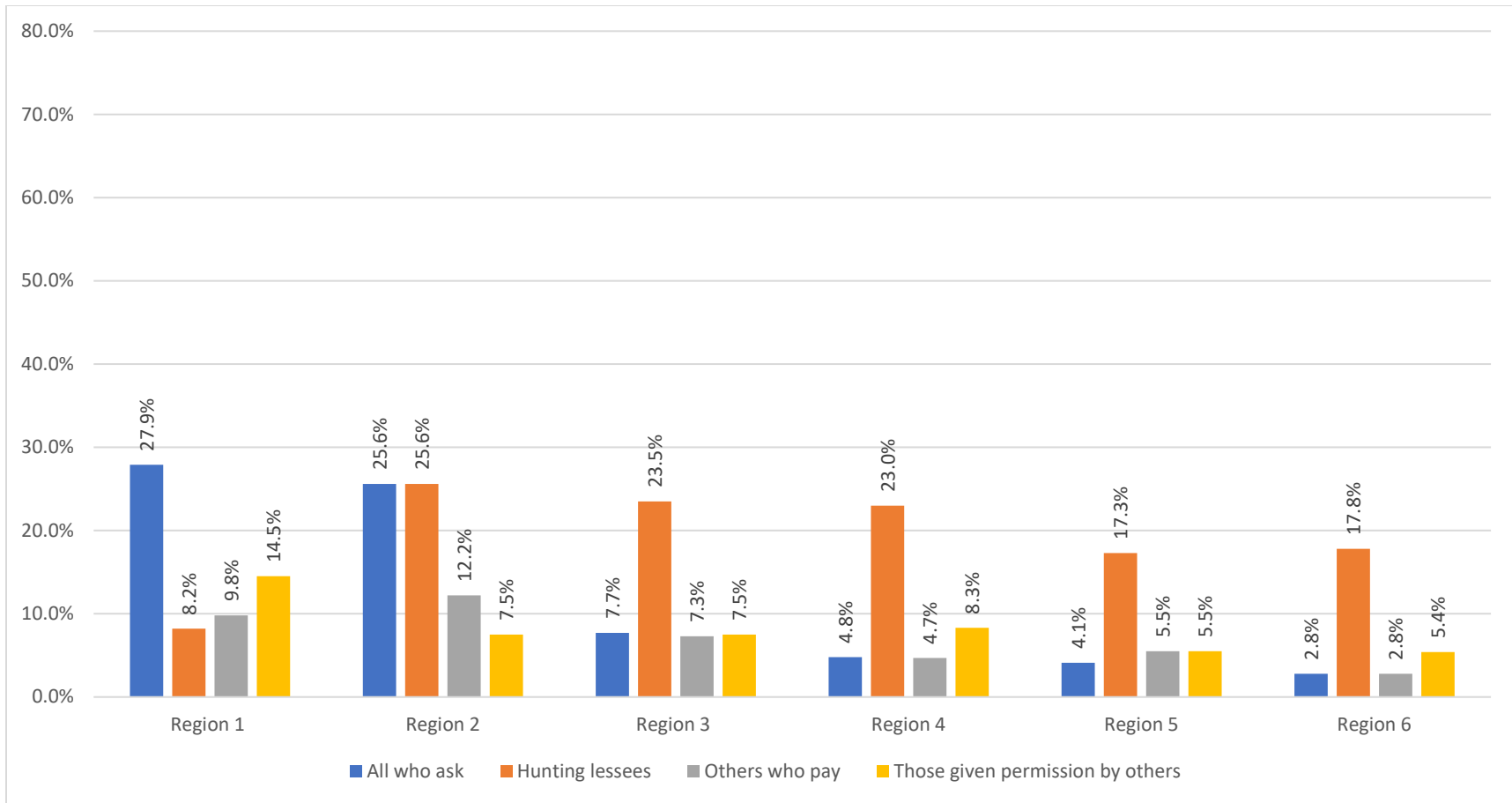


FIGURE 27. TYPES OF PEOPLE WHO HUNTED WHERE DEER HUNTING OCCURRED ON LAND LAST DEER SEASON (CONTINUED)

Deer Hunters Caused Problems Last Season

All respondents were asked whether deer hunters caused problems on their land last deer season. Only 11% reported that deer hunters caused problems on their land last deer season. Figure 28 shows results by region, with Region 1 highest at 15% and Region 5 lowest at 7%.

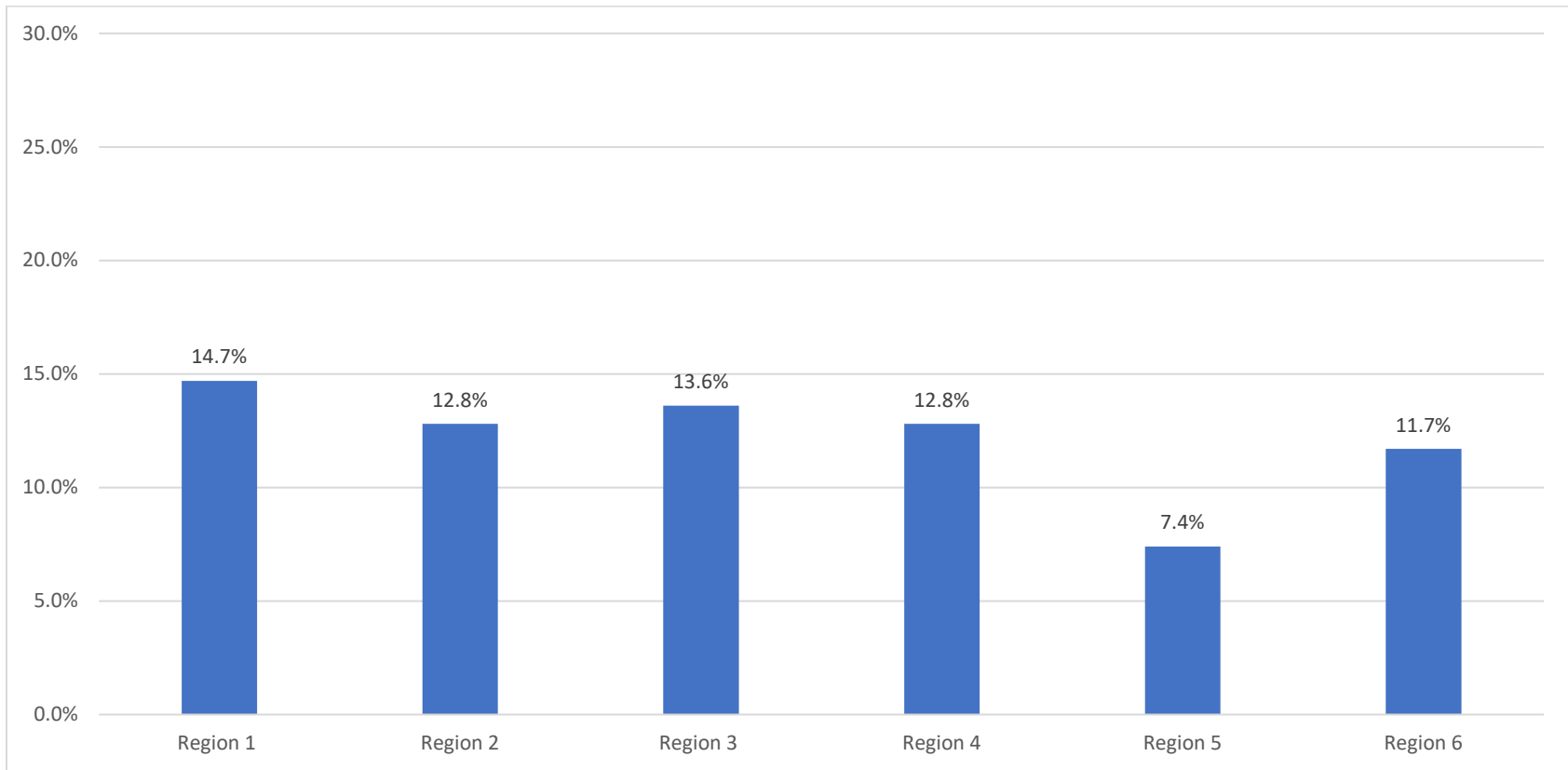


FIGURE 28. DEER HUNTERS CAUSED PROBLEMS ON LAND LAST DEER SEASON

Mule Deer Questions

A series of items asked about attitudes toward mule deer populations specifically (see Q26 series in Appendix 1). When presented with the statement “mule deer populations in Kansas are declining,” the single largest percentage response in all but Region 1 is “don’t know,” as shown in Figure 29. In Regions 4, 5, and 6, large majorities chose this response option. In Regions 1, 2, and 3, the combined percentage of strongly agree and agree is much greater than the combined response of disagree and strongly disagree.

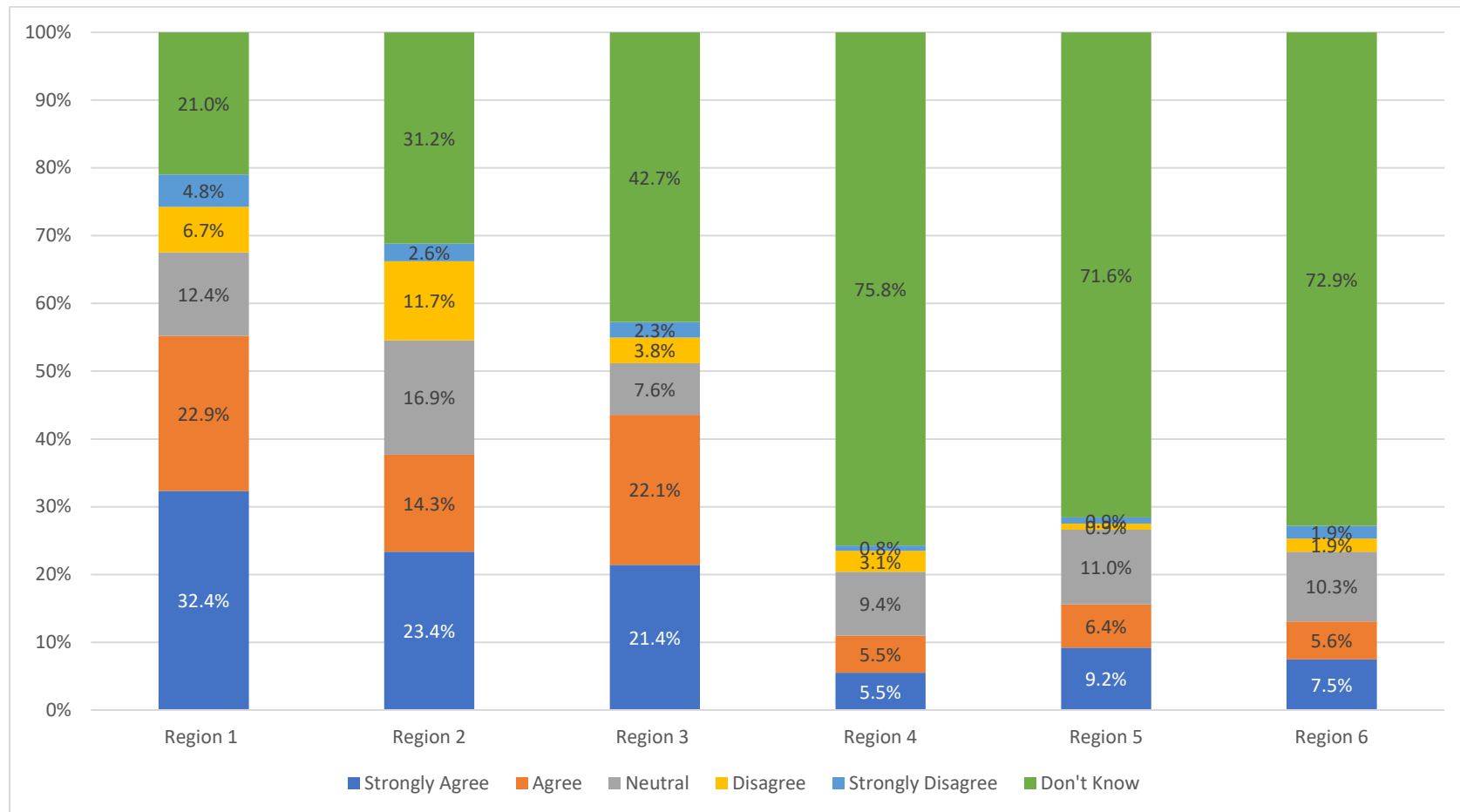


FIGURE 29. PERCEPTION THAT MULE DEER POPULATIONS IN KANSAS ARE DECLINING BY REGION

Figure 30 shows with the exception of Region 1 (46%), majorities of respondents across the state indicate “don’t know” when asked whether accidental killing of mule deer on a white-tailed permit is a common occurrence, and the levels are especially high in Regions 4, 5, and 6 at over 80% each. In Regions 1 and 2, the combined percentage of disagree and strongly disagree exceeds the combined percentage of agree and strongly agree.

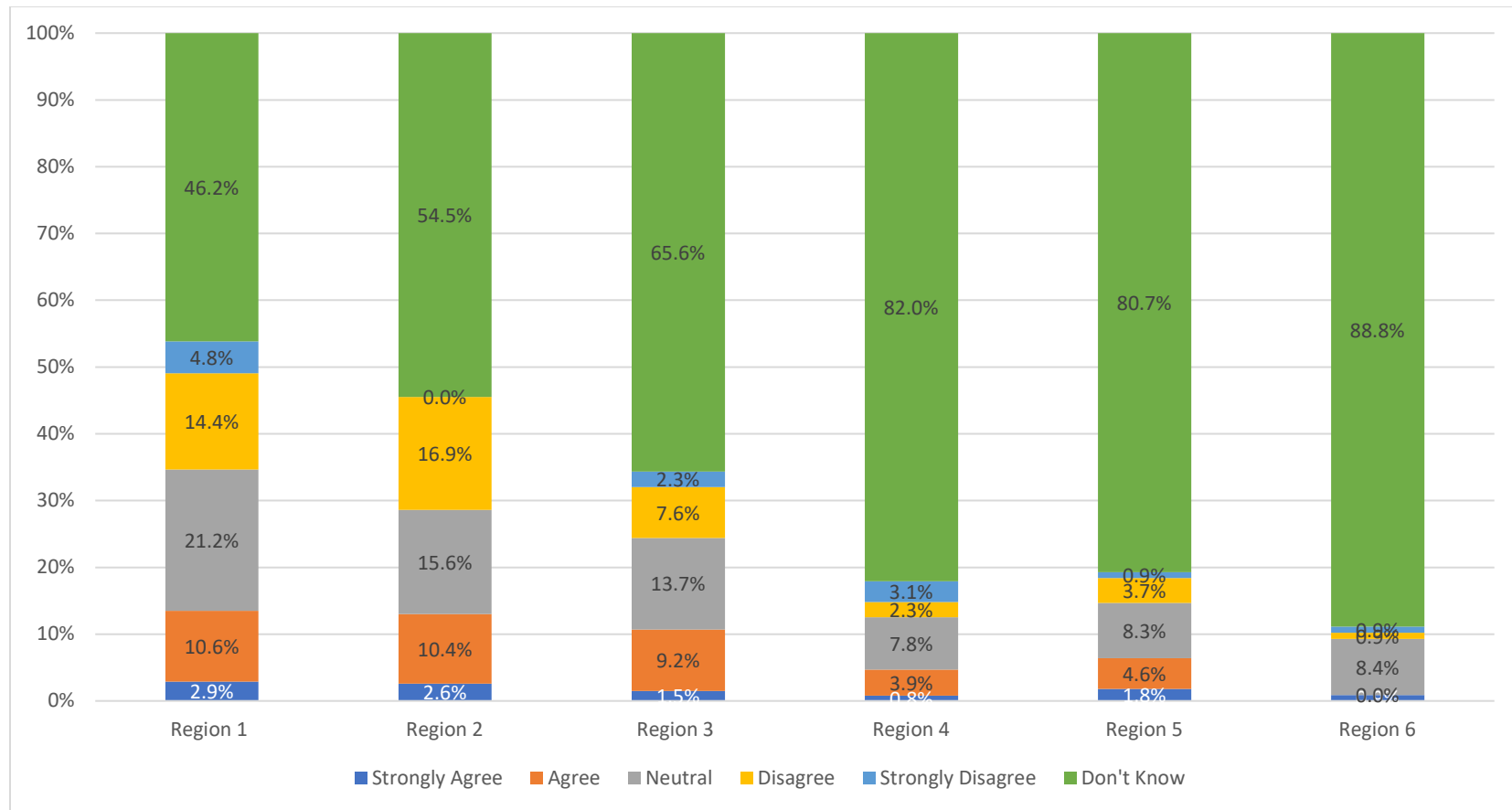


FIGURE 30. PERCEPTION THAT ACCIDENTAL KILLING OF MULE DEER ON A WHITE-TAILED DEER PERMIT IS A COMMON OCCURRENCE BY REGION

As shown in Figure 31, perception about intentional killing of mule deer on a white-tailed permit follows the same pattern as that for accidental killing graphed above. With the exception of Region 1 (47%), majorities of respondents across the state indicate “don’t know” when asked whether intentional killing of mule deer on a white-tailed permit is a common occurrence, and the levels are especially high in Regions 4, 5, and 6 at over 80% each. In Regions 1, 2, and 3, the combined percentage of disagree and strongly disagree are very similar to the combined percentage of agree and strongly agree.

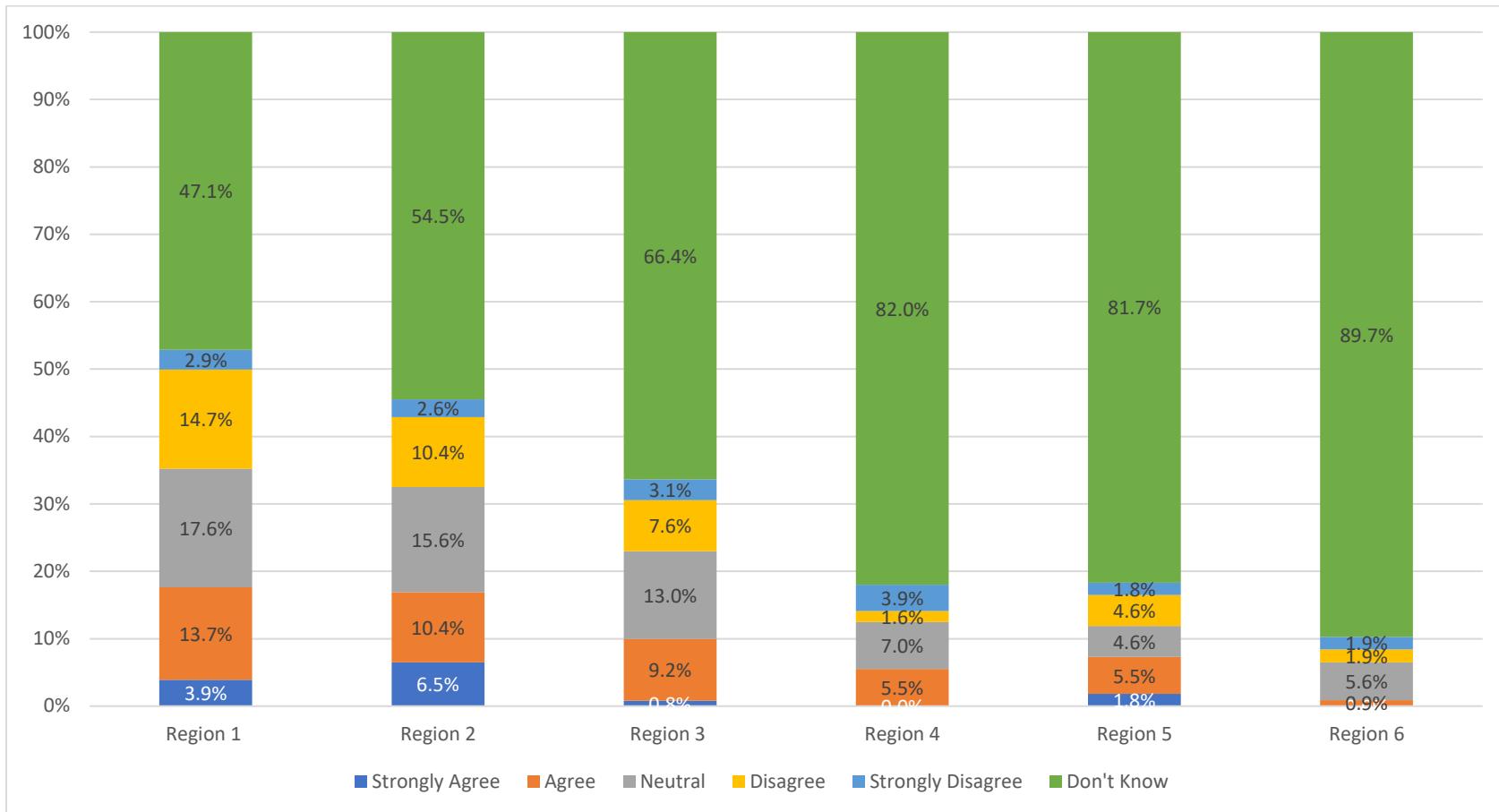


FIGURE 31. PERCEPTION THAT INTENTIONAL KILLING OF MULE DEER ON A WHITE-TAILED DEER PERMIT IS A COMMON OCCURRENCE BY REGION

Figure 32 shows that over two-thirds of those in Regions 4, 5, and 6 responded “don’t know” and the single largest percentage response in Regions 2 and 3 is also “don’t know” when asked whether fewer permits allowing the take of mule deer should be issued. In Regions 1, 2 and 3, the combined percentage of strongly agree and agree exceeds the combined response of disagree and strongly disagree, especially in Region 1.

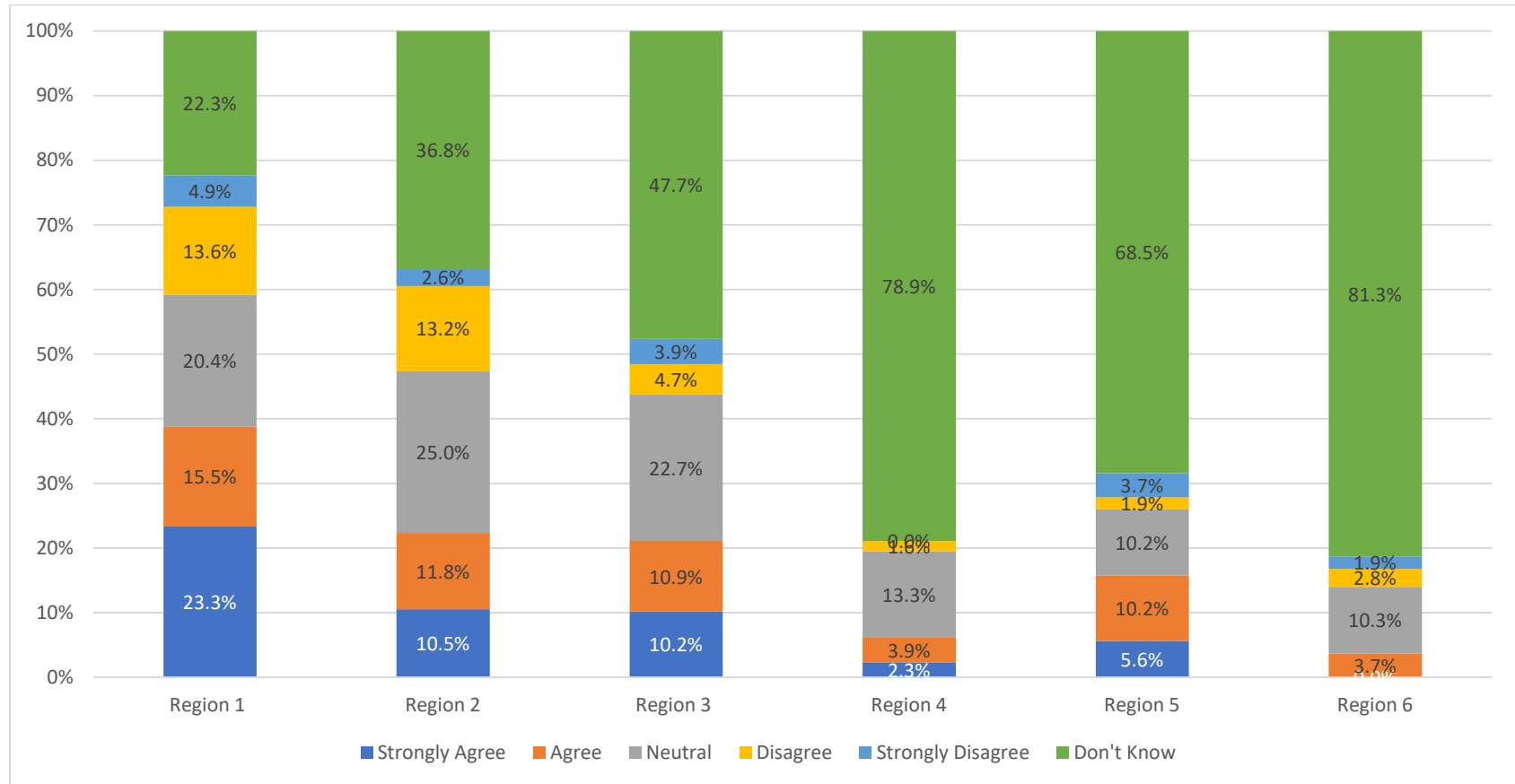


FIGURE 32. PERCEPTION THAT FEWER PERMITS ALLOWING THE TAKE OF MULE DEER SHOULD BE ISSUED BY REGION

When presented with the statement “If additional protection for mule deer meant less opportunities to hunt white-tailed deer, I would support that additional protection,” more than half in Regions 4, 5, and 6, respond “don’t know,” as shown in Figure 33. In Regions 1 and 3, the percentages who express some level of agreement are comparable to percentages expressing disagreement. In Region 2, the combined percentage of strongly disagree and disagree is somewhat higher than the combined percentage who agree or strongly agree.

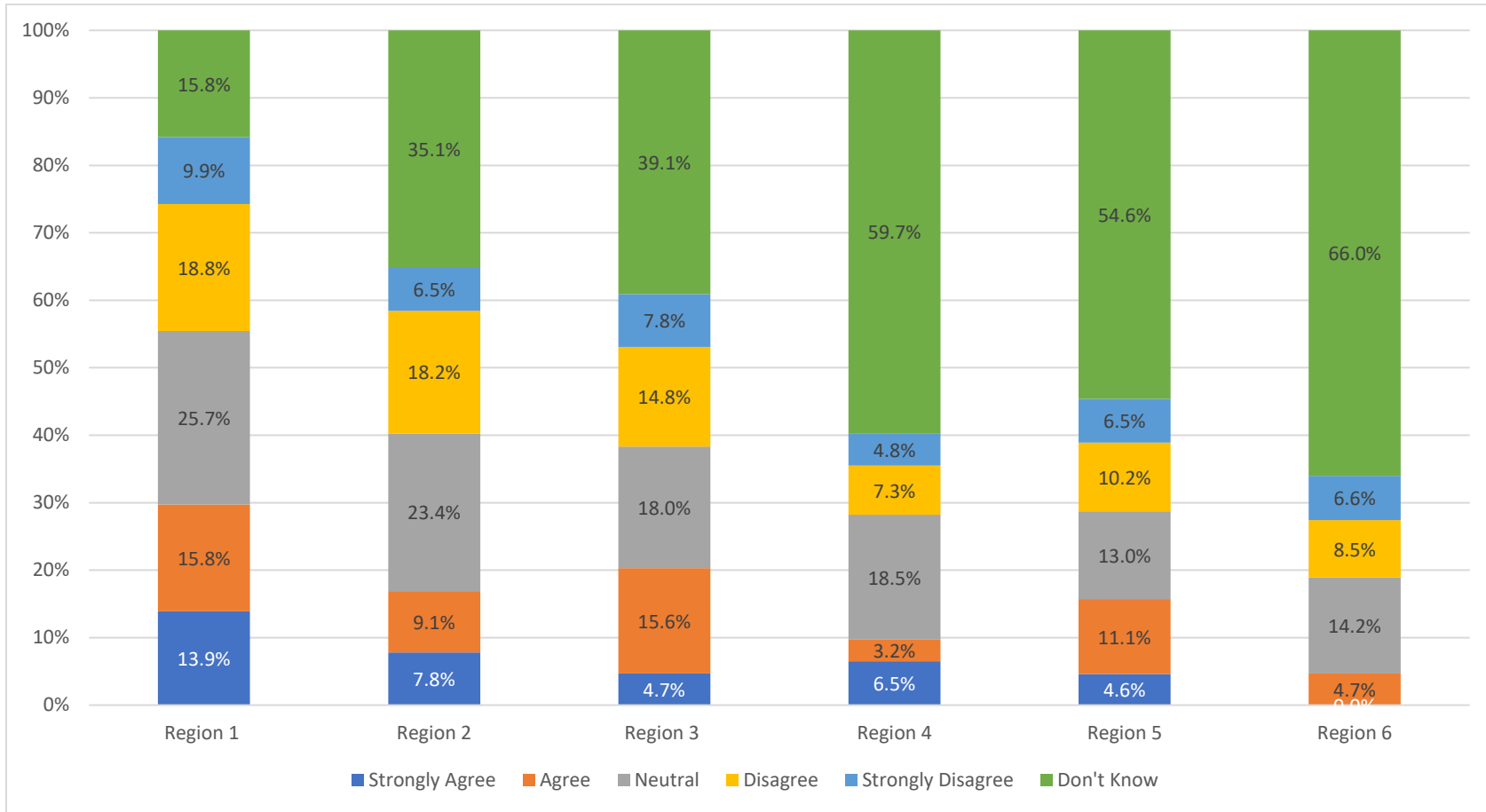


FIGURE 33. IF ADDITIONAL PROTECTION FOR MULE DEER MEANS LESS OPPORTUNITY TO TAKE WHITE-TAILED DEER, WOULD STILL SUPPORT ADDITIONAL PROTECTION BY REGION

Concern About Chronic Wasting Disease

New to the 2022 survey, respondents were presented with the statement “The presence of or possibility of chronic wasting disease in local populations concerns me.” Figure 34 shows the combined percentage of strongly agree and agree exceeds 50% in all but Regions 2 and 3, where it is still high at 41% and 48%, respectively. Concern is highest in Region 1, where the combined percentage of strongly agree and agree reaches nearly 70%.

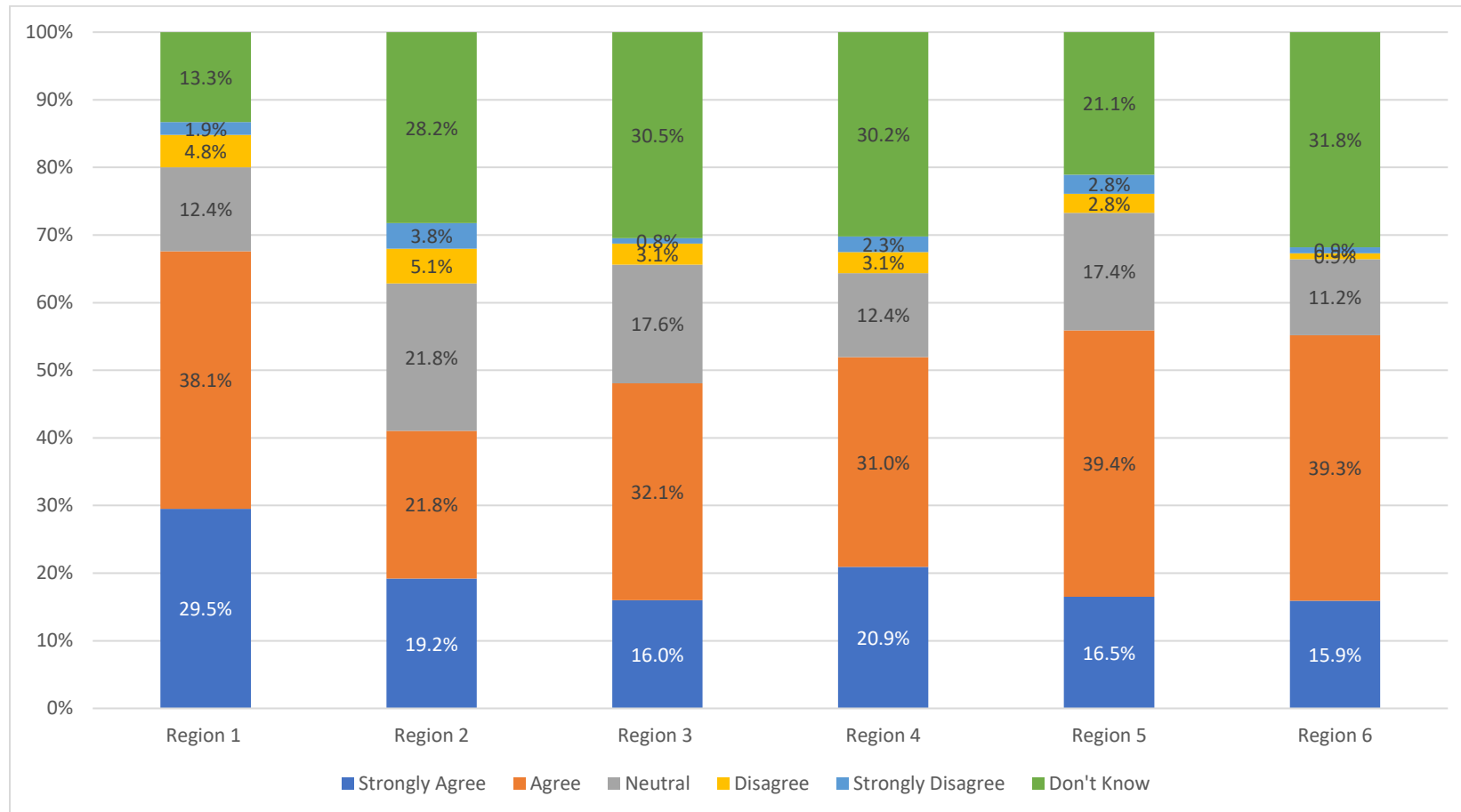


FIGURE 34. CONCERNED ABOUT POSSIBILITY OF CWD IN LOCAL DEER POPULATIONS BY REGION

Importance of KDWP Taking Certain Deer Management Actions

Respondents were asked to rate the importance that KDWP takes certain deer management actions. Figure 35 shows no substantial differences in perceived importance of KDWP simplifying deer regulations. At least 58% of respondents in all regions rate it as moderately important or higher, with the highest percentage in Region 6 at about 68%.

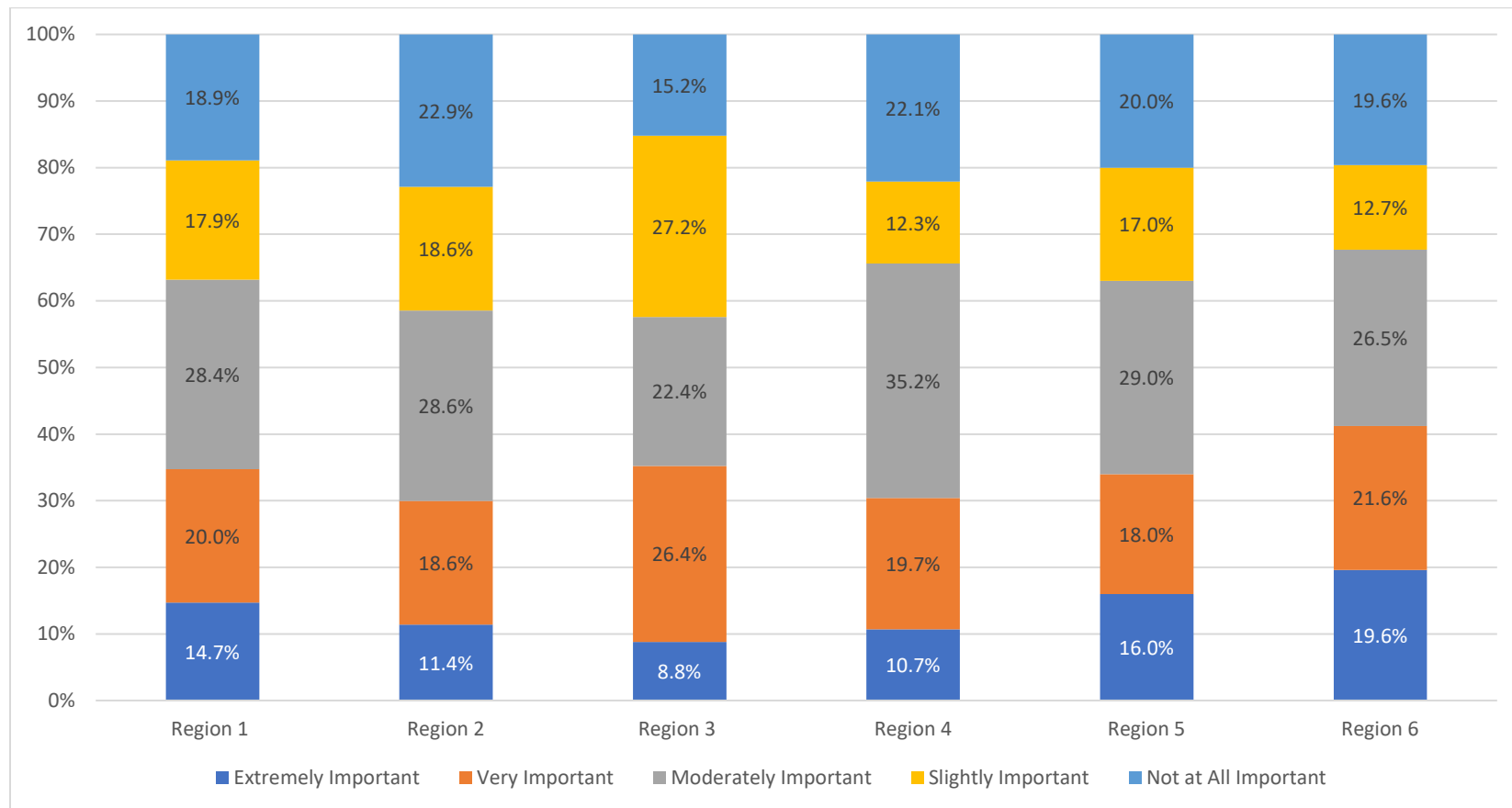


FIGURE 35. IMPORTANCE OF KDWP SIMPLIFYING DEER REGULATIONS

Figure 36 graphs importance of allowing more days of deer hunting. Perceived importance of this is highest in Region 6 and lowest in Region 2, but the single largest percentage in every region indicates “not at all important.”

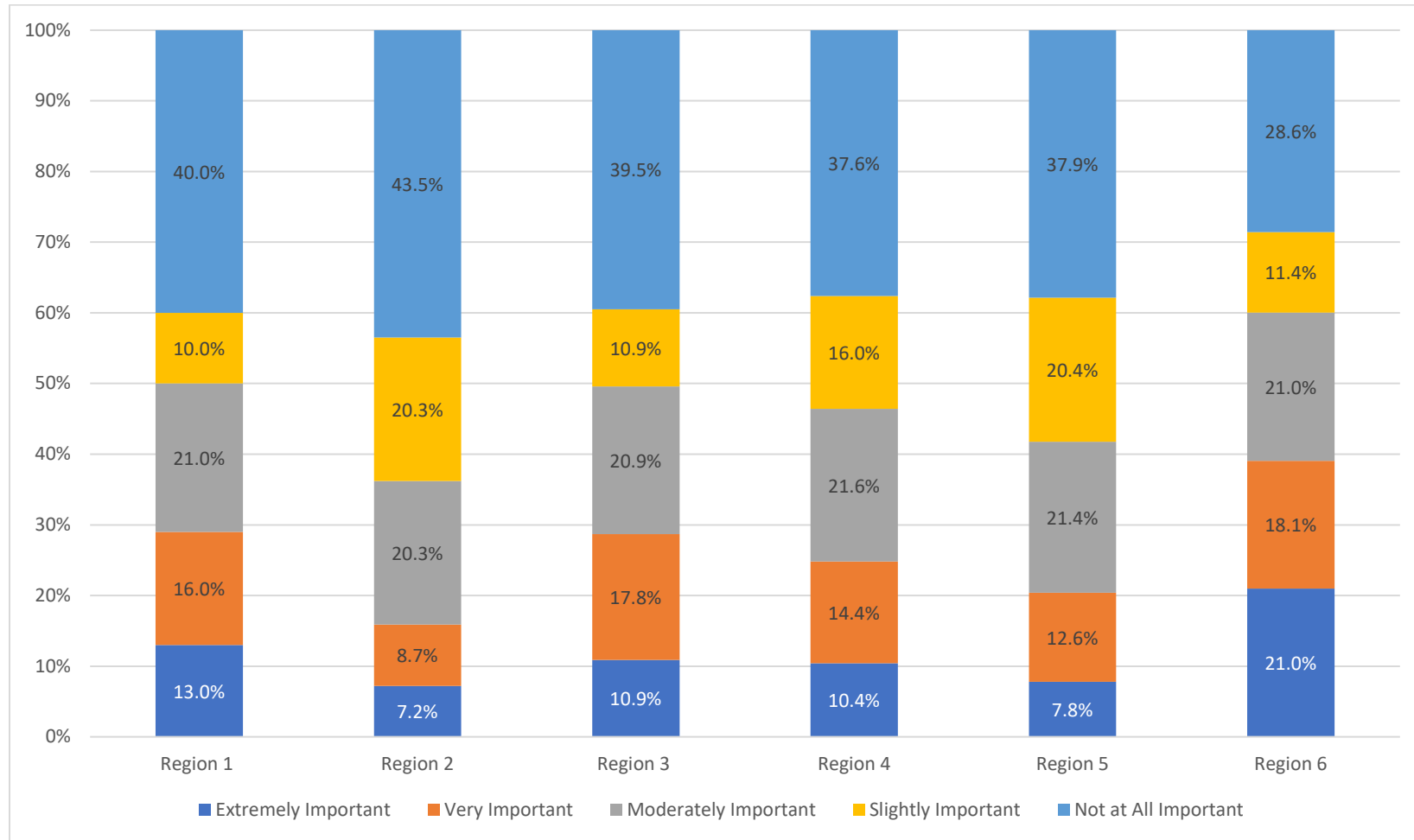


FIGURE 36. IMPORTANCE OF KDWP ALLOWING MORE DAYS OF DEER HUNTING.

Figure 37 shows that the single largest percentages in all regions rate KDWP allowing more nonresident deer permits as not at all important. It is rated least important in Region 6 and only slightly more important in Regions 1 and 2, the regions most different from Region 6.

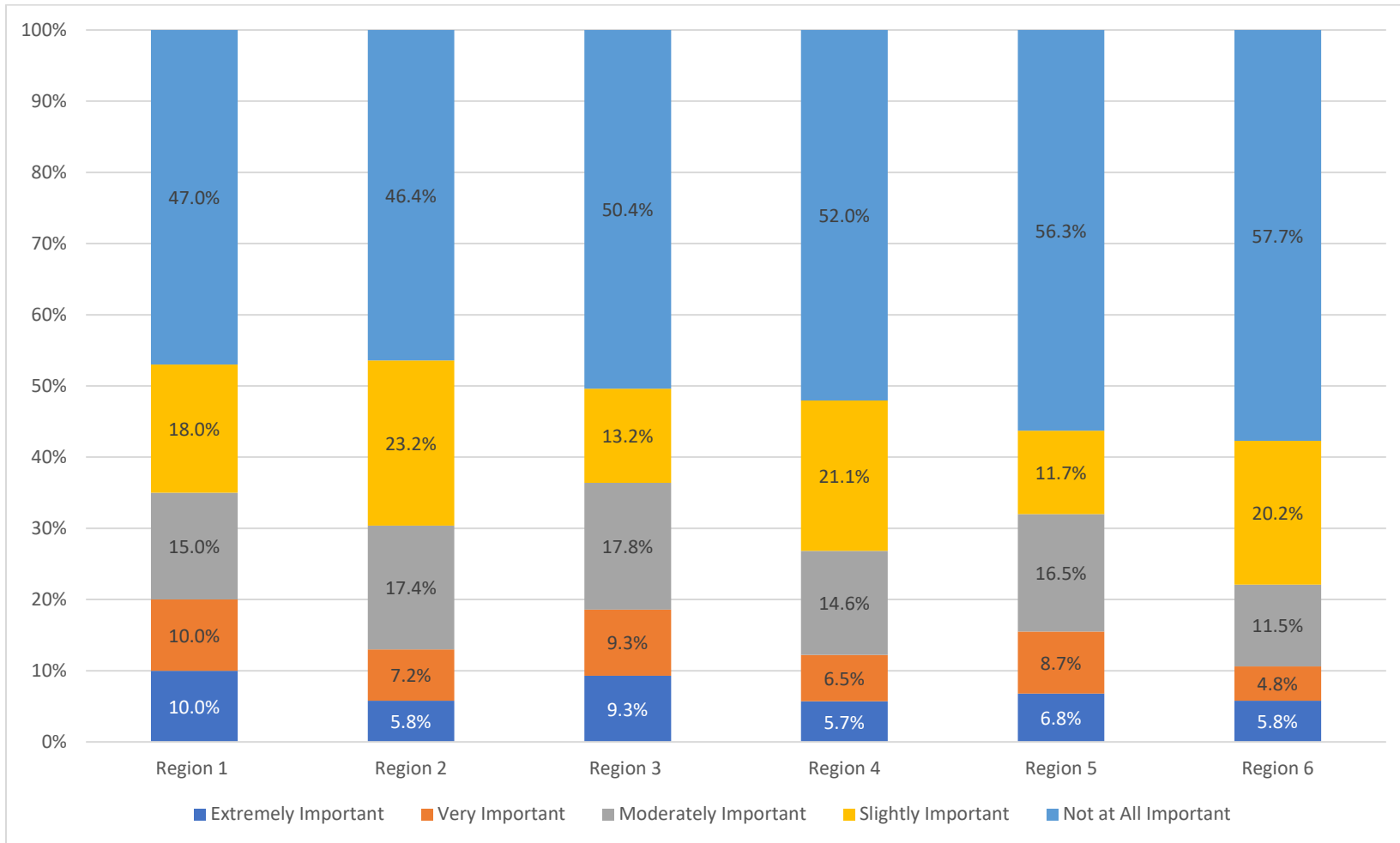


FIGURE 37. IMPORTANCE OF KDWP ALLOWING MORE NONRESIDENT DEER PERMITS

Figure 38 shows the perceived importance of KDWP providing more law enforcement. About 50% in each region view this as at least moderately important. There are only small differences across regions, with Region 4 showing the least importance but only slightly lower than Region 3, displaying the highest importance.

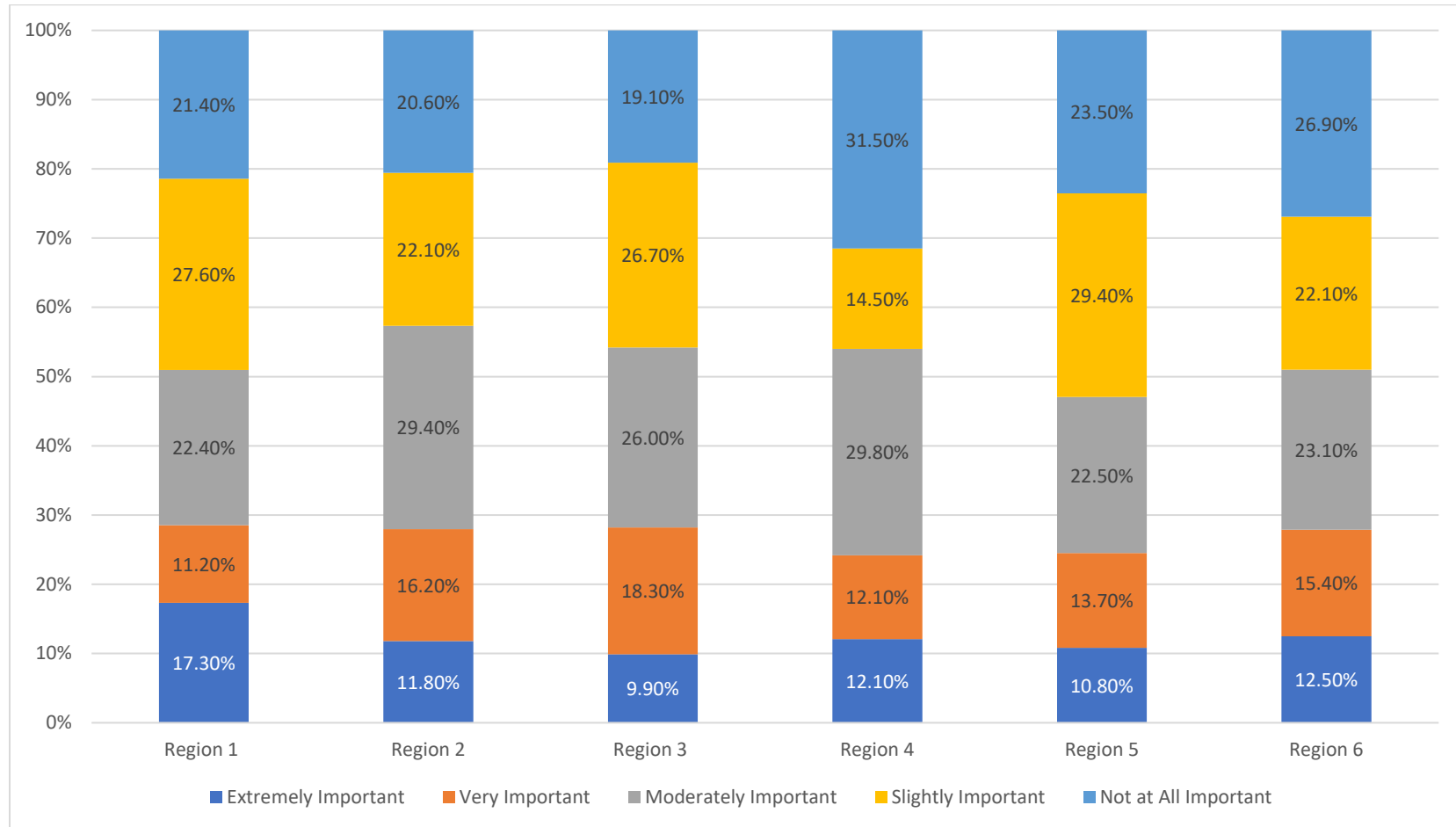


FIGURE 38. IMPORTANCE OF KDWP PROVIDING MORE LAW ENFORCEMENT

In terms of KDWP leasing more WIHA, Figure 39 shows about 40% in each region view this as at least moderately important.

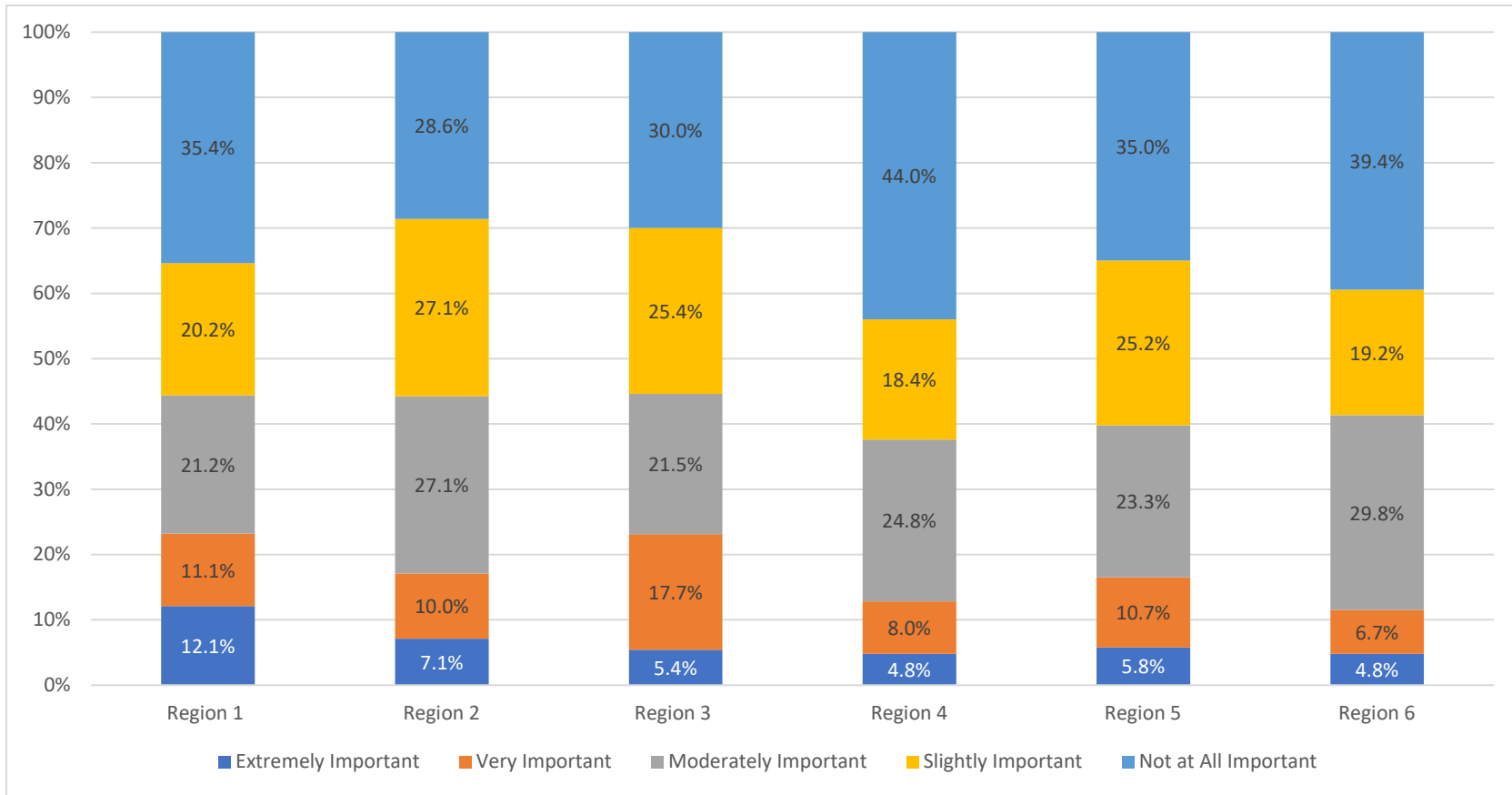


FIGURE 39. IMPORTANCE OF KDWP LEASING MORE WIHA

Figure 40 shows importance of KDWP providing more information to landowners on deer management. This is viewed as at least moderately important by more than 50% in all but Region 6. Highest perceived importance is found in Region 2, and lowest is in Region 6, but differences are not substantial.

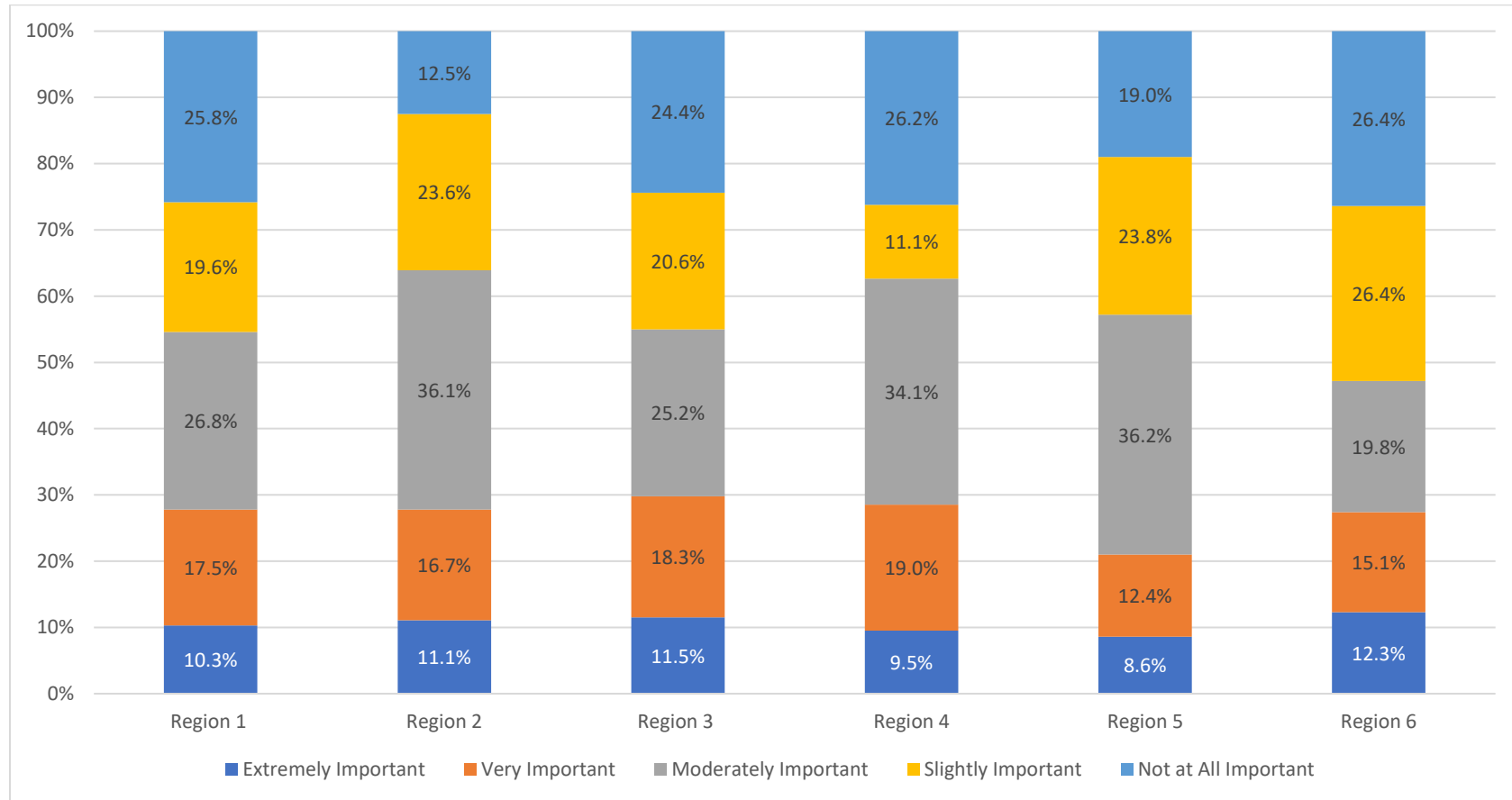


FIGURE 40. IMPORTANCE OF KDWP PROVIDING MORE INFORMATION TO LANDOWNERS ON DEER MANAGEMENT

Summary Rating of KDWP’s Deer Populations Management

Near the end of the questionnaire, question 34 asked, “How do you feel about the way KDWP manages deer populations?” In all but Region 5 the single largest percentage are “neither satisfied nor dissatisfied.” The modal category in Region 5 is satisfied (39%). In all regions higher percentages express satisfaction than dissatisfaction.

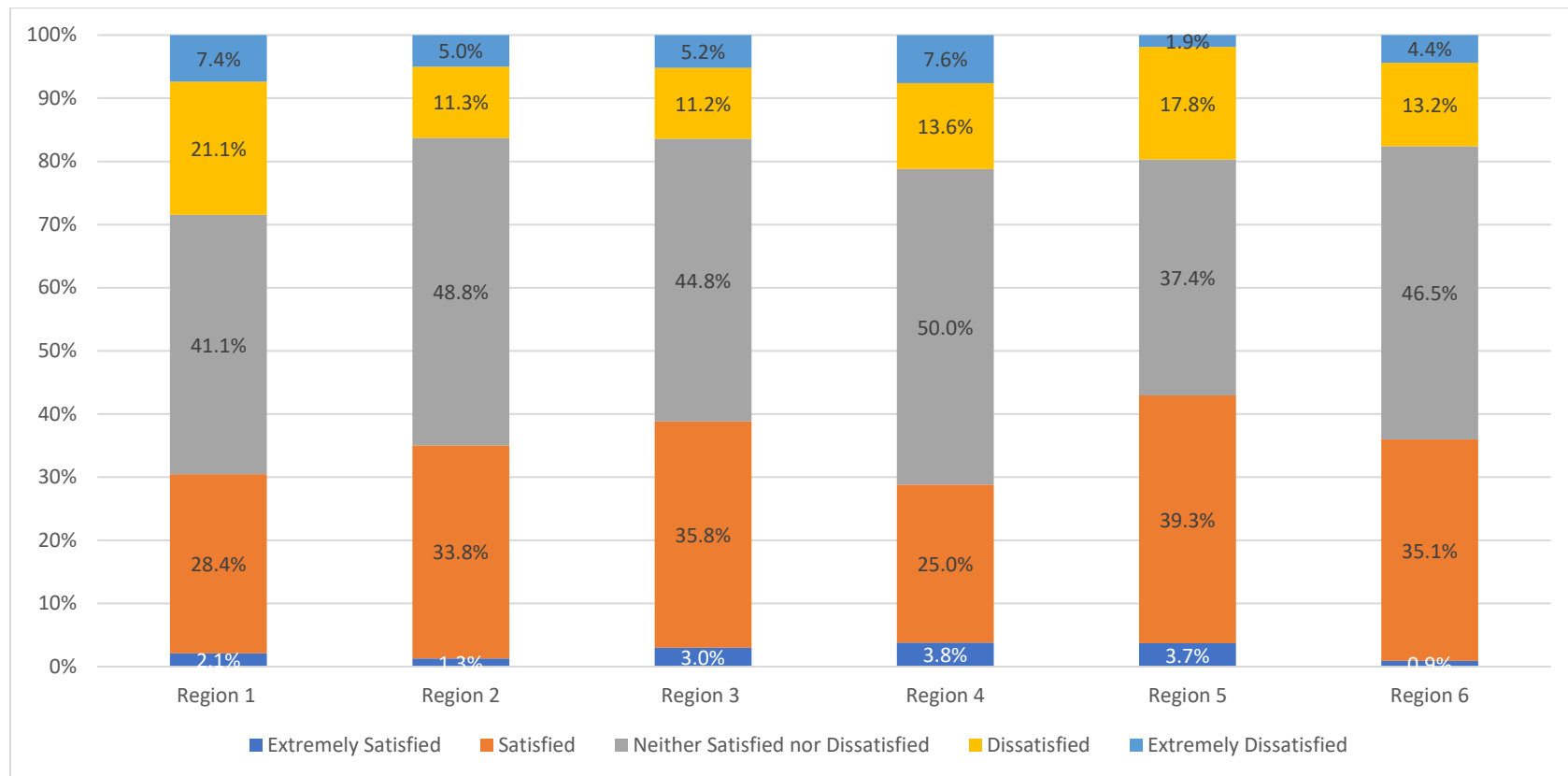


FIGURE 41. RATING THE WAY KDWP MANAGES DEER POPULATIONS

Open Comment Themes

Table 5 shows results from all respondents when offered an open-ended question at the very end of the questionnaire (see Q39), which stated “Please provide any additional comments you have about deer-related issues here.” The table includes results from this item when responses are coded into thematic areas. The “percent” column should be used as a measure of how many of the entire set of respondents offered a comment. The “valid percent” column is relative frequency of types of comments received among those who did offer a comment. Not surprisingly, certain themes to some extent contradict other themes. For example, there is both a theme of encouraging more out of state hunters, and there is a theme of limiting out of state hunters. The most often occurring theme (valid percent of 15.4) is limiting out of state tags/raising prices/outfitters are overhunting, followed by need more game wardens and hunting restrictions/reduce poaching, no hunting on land at 11.4%.

TABLE 5. END OF QUESTIONNAIRE OPEN-ENDED COMMENTS CODED INTO THEMES

	n	%	Valid %
Have fewer permit restrictions, cheaper permits	6	0.8	2.4
Encourage out of state hunting, make rifle season longer to reduce deer population	25	3.4	10.2
Vehicle/deer accidents	27	3.7	11
Need more game wardens and hunting restrictions/ reduce poaching, no hunting on land	28	3.8	11.4
Limiting out of state tags, raising prices, outfitters are overhunting	38	5.2	15.4
More regulations on permits issued, more expensive permits/deer population has decreased	16	2.2	6.5
Landowners should be compensated for property damage	8	1.1	3.3
Wildlife damage to property, attract mountain lions	17	2.3	6.9
Not sure of deer population on their land	4	0.5	1.6
Other	77	10.5	31.3
TOTALS	246	33.7	100

Appendix 1: Questionnaire with Summary Statistics

Percentage of overall response is presented for items that provided the respondent with a categorical response matrix. Items which requested a numerical response are presented with the corresponding mean, median, and standard deviation of all respondents. NOTE: the booklet questionnaire was formatted in portrait orientation, and question layout in this landscape-orientated appendix differs slightly from the booklet.

**2022 Kansas Landowner Opinion Survey
on Deer and Hunting Leases**



[Inside front cover of booklet]

Thank you for taking the time to review this survey booklet.

The Kansas Department of Wildlife and Parks (KDWP) is interested in your experience and opinions regarding deer in Kansas.

This survey is being administered by the Docking Institute of Public Affairs at Fort Hays State University. Your participation is crucial to a successful assessment of deer-related issues in Kansas. The survey will take only a few minutes to read and complete. We ask that you return your questionnaire within five working days.

In order to provide the most accurate representation of landowners in Kansas, it is important that each questionnaire be filled out and returned. Every questionnaire is important for achieving a valid study.

Participation is voluntary. You are assured complete confidentiality. The Docking Institute will collect and analyze grouped data only and deliver a report of the findings to the KDWP.

After you have completed the survey, simply tape the booklet closed and drop it in any US Postal Service mailbox. Postage is pre-paid and the booklet is pre-addressed.

For questions or concerns, please contact:

Levi Jaster, KDWP Emporia Research Office at (620) 342-0658 or
Dr. Brett Zollinger, Docking Institute, Fort Hays State University at (785) 628-5881.

Upon report completion, the survey results will be posted online at <http://ksoutdoors.com/Hunting/Big-Game-Information/Deer> and <http://fhsu.edu/docking/reports>.

Q1 Thinking about the number of deer on your land, how would you say the population has changed...

Since this time last year?

- Decreased.....21.8
- Remained the same...45.8
- Increased.....22.0
- Don't Know.....10.4

Over the past 3 years (2019-2021)?

- Decreased.....26.4
- Remained the Same...32.1
- Increased.....30.7
- Don't Know.....10.4

Q2 What are your best estimates for the numbers requested below?

	MEAN	MEDIAN	STD DEV.
Average <i>number of deer</i> generally on your property last year (2021).....	29.5	15.0	66.9
Total <i>number of antlered bucks killed by hunters</i> on your property last year	1.47	1.0	2.54
Total <i>number of antlerless deer killed by hunters</i> on your property last year.....	1.39	0.0	2.6

Q3 How many deer would you like to have on your farm/ranch?

- More than I have now.....21.9
- Same as I have now.....40.7
- Fewer than I have now.....22.5
- I do not want deer on my land.....7.3
- Don't Know..... 7.6

Q4 How do you feel about having deer on and around your property?

- I enjoy having deer around.....47
- I enjoy deer, but they cause problems at the same time.....34.8
- I generally regard deer as a nuisance.....15.2
- Don't Know..... 3.0

Q5 Did deer cause damage to your land in 2021?

- Yes.....40.9
- No (*Please skip to Q13, page 3*)59.1

Q6 If you answered "Yes" to Q5:

	Yes	No
Have you changed the traditional management of your land because of the potential for deer damage?	18.1	81.9
Did the activities of your neighbor(s) cause deer damage on your land?	21.1	78.9
Did you attempt to control deer numbers on your property to reduce their potential to interfere with your farm and ranch operation?	23.7	76.3

Q7 How would you describe the level of the damage caused by deer to your crops or property within the past 12 months?

- Light damage.....45.3
- Moderate damage.....32.5
- Substantial damage..... 15.7
- Severe damage..... 4.7
- Don't Know..... 1.8

Q8 Please indicate how much of a problem each of the following items was for you.

	Not a Problem	Small Problem	Large Problem	No Opinion
Deer damage to crops	11.5	59.5	27.5	1.5
Deer competition with livestock for forage	53.6	32.1	6.8	7.5
Deer transmitting disease	43.5	20.0	8.2	28.2
Damage to temporary electric fences	25.5	29.2	37.1	8.2
Damage to permanent fences	32.1	45.9	17.2	4.9
Deer/Vehicle accidents	24.1	32.3	42.1	1.5
Damage to garden/ornamental plants	34.3	36.6	22.8	6.3
Deer damage to windbreaks or shelter-belt trees	46.3	33.2	13.4	7.1

Q9 Which of the following means did you use on your property to limit deer damage?

	Yes	No
Increased deer hunting pressure during regular seasons	39.2	60.8
Increased deer hunting pressure during antlerless-only seasons	30.0	70.0
Required deer hunters to take does	17.6	82.4
Contacted KDWP for deer control permit (outside hunting seasons)	5.7	94.3
Requested list of potential deer hunters from KDWP	0.4	99.6
Contacted K-State Research & Extension for assistance	1.1	98.9
Leased your land to KDWP as a Walk-In Hunting Area (WIHA)	4.5	95.5
Leased your land to someone besides KDWP for deer hunting	20.5	79.5

Q10 Did you use non-lethal methods to reduce deer damage?

	Yes	No
High fence to exclude deer	4.1	95.9
Electric fence to exclude deer	7.0	93.0
Scare devices (sound, motion, or image)	9.3	90.9
Guard dogs	9.2	90.8
Repellents	10.0	90.0
Unpalatable plants	4.1	95.9
Other	6.6	93.4

Q11 If you answered "Other" on Q10, please describe what non-lethal methods you used to reduce deer damage:

Q12 How would you rate your overall effectiveness at limiting deer damage on your property in 2021?

- Highly Effective..... 2.4
- Moderately Effective..... 7.6
- Slightly Effective.....26.9
- Ineffective.....36.9
- Don't Know..... 26.1

Q13 Did you experience damage from any of the listed species of wildlife in 2021?

Species	Yes	No	Species	Yes	No
Antelope/Pronghorn	4.2	95.8	Bats	1.1	98.9
Beaver	26.4	73.6	Blackbirds	13.3	86.7
Bobcat	8.3	91.7	Coyote	35.8	64.2
Ducks/Geese	14.1	85.9	Elk	0.6	99.4
Fox	3.2	96.8	Gophers/Moles	37.2	62.8
Hawks/Owls	14.4	85.6	Prairie Dogs	8.1	91.9
Rabbits/Hares	9.2	90.8	Raccoon	36.4	63.6
Rats/Mice	45.8	54.2	Skunk	17.0	83.0
Squirrel	7.5	92.5	Turkey	12.3	87.7
Other	18.5	81.5			

Q14 If you answered "Other" on Q13, please describe what other species caused damage to your land in 2021: _____

Q15 Which of the following recreational activities occur on your land?

Activity	Yes	No	Activity	Yes	No
Hunting upland game	65.1	34.9	Hunting deer/big game	79.5	20.5
Hunting other species	48.3	51.7	Hunting for shed antlers	62.1	37.9
Fishing	50.5	49.5	Trapping	30.2	69.8
Bicycling	10.1	89.9	Photographing wildlife	35.1	64.9
Watching wildlife	56.7	43.3	Camping	19.5	80.5
Riding ATV	54.9	45.1	Hiking/Backpacking	19.9	80.1
Boating/Swimming	14.4	85.6	Horseback Riding	18.4	81.6
Other outdoor activities	18.1	81.9			

Q16 If there are other outdoor recreational activities you consider important on your land, please list them here:

Q17 How would you describe your level of concern about the following factors when people use your property for recreation?

	None	Slight	Moderate	Substantial	Don't Know
Liability concerns	10.6	20.9	28.1	37.8	2.5
Problems with hunters	22.1	26.4	27.3	22.4	1.9
Privacy concerns	25.1	26.9	25.0	20.8	2.3

Q18 Did anyone hunt deer on your land last deer season?

- Yes.....77.2 (n=524)
- No (*Please skip to Q21, below*).....22.8

Q19 Who hunted deer on your land last deer season?

	Yes	No
Myself	39.8	60.2
Immediate family member(s)	63.9	36.1
Invited friends or relatives	63.1	36.9
Some people who asked permission	46.5	53.5
Anyone who asked to hunt	10.4	89.6
People who lease the land for hunting	19.9	80.1
Others who paid to hunt	7.2	92.8
People who were given permission to hunt by others	7.9	92.1

Q20 Please estimate the total number of people who hunted deer on your land last

deer season: _____

MEAN = 4.83

MEDIAN = 4.00

STD DEV = 5.93

Q21 Which of the following harvest management activities generally occur on your land?

	I do this	Someone else does this	No one does this
Require hunters to take antlerless deer for population control	13.3	7.4	79.4
Restrict the species of deer that may be taken (whitetail or mule deer)	7.2	6.6	86.1
Restrict buck harvest to promote older bucks	17.5	6.4	76.1
Restrict deer harvest to promote more deer	17.1	9.0	74.0

Q22 Which of the following habitat management activities generally occur on your land?

	I do this	Someone else does this	No one does this
Plant food plots or leave crops unharvested to attract deer	23.6	9.4	67.0
Place feeders out for deer	19.4	25.4	55.2
Create salt or mineral licks for deer	21.0	16.2	62.9
Manage land or create habitat specifically for deer	21.2	6.4	72.4
Participate in a deer management cooperative with neighbors	3.8	5.1	91.1

Q23 Did deer hunters cause problems on your land last deer season?

- Yes.....11.6 (n= 81)
- No (*Please skip to Q26, below*)..... 88.4

Q24 If you answered "Yes" on Q23: What problems did they cause?

	Yes	No
Damaged your crops, livestock, or property.	57.5	42.5
Created inconveniences or disrupted your farm or ranch operation.	70.8	29.2
Took deer that you or your family wished to hunt.	36.6	63.4
Failed to take antlerless deer.	22.2	77.8
Failed to follow instructions.	50.8	49.2
Caused other problems.	70.6	29.4

Q25 If deer hunters caused other problems on your land in 2021, please describe: _____

Q26 How strongly do you agree or disagree with the following statements?

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Don't Know
Mule deer populations in Kansas are declining.	15.9	12.7	10.7	4.2	2.0	54.5
<u>Accidental</u> killing of mule deer on a white-tailed deer permit is a common occurrence.	1.7	5.9	12.4	6.6	2.2	71.1
<u>Intentional</u> killing of mule deer without the appropriate permit is a common occurrence.	1.7	7.1	10.9	6.1	2.8	71.4
Fewer permits allowing the take of mule deer should be issued.	8.2	9.1	16.1	5.4	2.8	58.5
If additional protection for mule deer meant less opportunities to hunt white-tailed deer, I would support that additional protection.	5.9	9.9	18.1	12.2	6.9	47.1
The presence of or possibility of chronic wasting disease in local populations concerns me.	19.6	34.0	14.7	3.0	2.0	26.8

Q27 How important is it for KDWP to take the following deer management actions?

	Extremely Important	Very Important	Moderately Important	Slightly Important	Not at all Important
Simplify deer regulations	13.6	20.9	27.8	17.6	20.1
Allow more days of deer hunting	11.6	15.8	21.1	14.3	37.3
Allow more nonresident deer permits	7.1	14.7	15.4	17.2	52.3
Provide more law enforcement	11.9	14.3	25.4	23.1	24.9
Lease more Walk-In Hunting Areas	6.2	11.1	24.1	22.0	36.7
Provide more information to landowners on deer management	10.4	17.0	28.8	19.5	24.3

Q28 How many acres of land in Kansas do you own, lease or manage for agricultural purposes?

_____ number of acres. **[NOTE: through a combination of this question and the Q29 series when this question left blank, the new variable “acres” was created. The mean, median, and standard deviation for the new ACRES variable is reported here.]**

MEAN = 1,450

MEDIAN = 600

STD DEV = 2,360

Q29 Of the number of acres provide in Q28, approximately how many acres of your farm or ranch are in the following types of uses:

Land Use	Acres	Land Use	Acres
Cropland	MEAN =975 MEDIAN =380 STD DEV = 1,631	Rangeland/Pasture	MEAN =608 MEDIAN =220 STD DEV =1,350
Alfalfa/Hay	MEAN =123 MEDIAN =55 STD DEV =293	Orchard	MEAN =2.5 MEDIAN =0 STD DEV =10
Nursery	MEAN =3.5 MEDIAN =0 STD DEV =18	Garden Crop	MEAN =0.98 MEDIAN =0 STD DEV =2.3
Pond/Wetland	MEAN =28 MEDIAN =5 STD DEV =193	CRP/Idle	MEAN =141 MEDIAN =50 STD DEV =312
Other	MEAN =63 MEDIAN =40 STD DEV =70		

Q30 Of the number of acres provide in Q28, approximately how many acres did you control the hunting rights for in 2021? This is referring to land you owned, managed or rented for agriculture on which you had initial authority to allow hunting, lease out or charge a fee for hunting, etc.? This is not referring to land that you have leased for hunting or obtained permission from others for hunting. _____ acres. *If none, please indicate “0” and skip to Q34.*

[NOTE: as with Q28 above, the variable ACRES is used in place of Q28 for purposes of selecting only those for whom measures of central tendency should be calculated on Q30.]

MEAN = 1,209

MEDIAN = 480

STD DEV = 2,073

Q31 Of the acres you controlled from Question 30, how many total acres did you lease out or charge a daily access or other fee for hunting in 2021? _____ acres. If none, please indicate "0" and skip to Q34.

MEAN = 225

MEDIAN = 0

STD DEV = 1,281

Importantly, 81.3% of the 579 eligible respondents to this question answered zero (0) acres.

NOTE: The Q32 and 33 question series below were first added to the deer survey for its 2017 administration. Small subsets of respondents permit leased or another form of paid hunting. See break-out summary response and selected operation use characteristics in tables immediately following this one. The “n” count in first column denotes number of respondents in the row who report at least 1 acre of land in said form of lease.

32. How many acres did you lease out for hunting to each of the following in 2016:	Acreage: (write '0' if none)	The individuals hunting on the lease were <u>primarily</u> : (check one)	Please <u>check</u> which species could be hunted under the lease: (or just check "All Wildlife" if applicable)			In which species was the lessee most interested?
a. Private individuals (n=79)	[see next page]	<input type="checkbox"/> local KS residents <input type="checkbox"/> non-local KS residents <input type="checkbox"/> non-residents (state:_)	<input type="checkbox"/> All Wildlife <input type="checkbox"/> Deer <input type="checkbox"/> Waterfowl	<input type="checkbox"/> Quail/Pheasant <input type="checkbox"/> Rabbit/Squirrel <input type="checkbox"/> Other (specify): _____	<input type="checkbox"/> Turkey <input type="checkbox"/> Dove	Circle one species for which the land was primarily leased to hunt.
b. Guides and outfitters (Including your land on which you guide hunters) (n=30)	[see next page]	<input type="checkbox"/> local KS residents <input type="checkbox"/> non-local KS residents <input type="checkbox"/> non-residents (state:_)	<input type="checkbox"/> All Wildlife <input type="checkbox"/> Deer <input type="checkbox"/> Waterfowl	<input type="checkbox"/> Quail/Pheasant <input type="checkbox"/> Rabbit/Squirrel <input type="checkbox"/> Other (specify): _____	<input type="checkbox"/> Turkey <input type="checkbox"/> Dove	Circle one species for which the land was primarily leased to hunt.
c. Controlled Shooting Operation (Including your land on which you operate a C.S.O.) (n=1)	[see next page]	<input type="checkbox"/> local KS residents <input type="checkbox"/> non-local KS residents <input type="checkbox"/> non-residents (state:_)	<input type="checkbox"/> All Wildlife <input type="checkbox"/> Deer <input type="checkbox"/> Waterfowl	<input type="checkbox"/> Quail/Pheasant <input type="checkbox"/> Rabbit/Squirrel <input type="checkbox"/> Other (specify): _____	<input type="checkbox"/> Turkey <input type="checkbox"/> Dove	Circle one species for which the land was primarily leased to hunt.
d. Hunting/sportsman’s Club (n=0)	[see next page]	<input type="checkbox"/> local KS residents <input type="checkbox"/> non-local KS residents <input type="checkbox"/> non-residents (state:_)	<input type="checkbox"/> All Wildlife <input type="checkbox"/> Deer <input type="checkbox"/> Waterfowl	<input type="checkbox"/> Quail/Pheasant <input type="checkbox"/> Rabbit/Squirrel <input type="checkbox"/> Other (specify): _____	<input type="checkbox"/> Turkey <input type="checkbox"/> Dove	Circle one species for which the land was primarily leased to hunt.
e. KDWP (Walk-In Hunting Areas - WIHA) (n=17)	[see next page]	N/a	Fall Lease (All Wildlife) BOTH Fall and Spring Lease (Turkey Only)			N/a
f. Other (please specify): (n=4)	[see next page]	<input type="checkbox"/> local KS residents <input type="checkbox"/> non-local KS residents <input type="checkbox"/> non-residents (state:_)	<input type="checkbox"/> All Wildlife <input type="checkbox"/> Deer <input type="checkbox"/> Waterfowl	<input type="checkbox"/> Quail/Pheasant <input type="checkbox"/> Rabbit/Squirrel <input type="checkbox"/> Other (specify): _____	<input type="checkbox"/> Turkey <input type="checkbox"/> Dove	Circle one species for which the land was primarily leased to hunt.
33. On how many acres did you charge a daily access or other fee in 2016? This does NOT include leased land from Q32 above. (n=6)	[see next page]	<input type="checkbox"/> local KS residents <input type="checkbox"/> non-local KS residents <input type="checkbox"/> non-residents (state:_)	<input type="checkbox"/> All Wildlife <input type="checkbox"/> Deer <input type="checkbox"/> Waterfowl	<input type="checkbox"/> Quail/Pheasant <input type="checkbox"/> Rabbit/Squirrel <input type="checkbox"/> Other (specify): _____	<input type="checkbox"/> Turkey <input type="checkbox"/> Dove	Circle one species for which the land was primarily leased to hunt.

From the Q32 and Q33 series above, summary response along and selected operation use characteristics

Small subsets of respondents permit leased or another form of paid hunting. All summary statistics in this table are merely suggestive – not taken as representative – due to very small numbers of cases on which they are based. The “n” count in first column denotes number of respondents in the row who report at least 1 acre of land in said form of lease.

	n*	Mean acres Per lease	Mean acres controlled By lessee (from derived Variable ACRES)	% of land controlled leased out	Primarily hunted by <u>local</u> KS resident (%)	Primarily hunted by Non-local KS resident (%)	Primarily hunted by Non-resident (%)
Private individuals	79	831	1,812	46%	47%	7%	46%
Guides and outfitters	30	1,882	4,299	43%	14%	27%	59%
Controlled shooting	1	160	160	100%	100%	0%	0%
Hunting/sportsman Club	0	n/a	n/a	n/a	n/a	n/a	n/a
KDWP (WIHA)	17	1,312	3418	38%	n/a	n/a	n/a
Other	4	281	813	35%	100%	0%	0%
Per gun or daily access fee	6	1,403	3,047	46%	50%	0%	50%

* Some respondents leased land to more than one type of lease.

(continued elaboration of Q32 and q33 series from previous page)

	n	All Wildlife* (n)	Quail/Pheasant (n)	Turkey (n)	Deer (n)	Rabbit/Squirrel (n)	Dove (n)	Waterfowl (n)	Other (n)
Private individuals	79	65	3	5	14	0	2	1	1
Guides and outfitters	30	23	1	5	8	0	0	1	0
Controlled shooting	1	0	1	0	0	0	0	0	1
Hunting/sportsman Club	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
KDWP (WIHA)	17**	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Other	4	2	0	0	0	0	0	0	4
Per gun or daily access fee	6	3	1	0	3	0	0	0	0

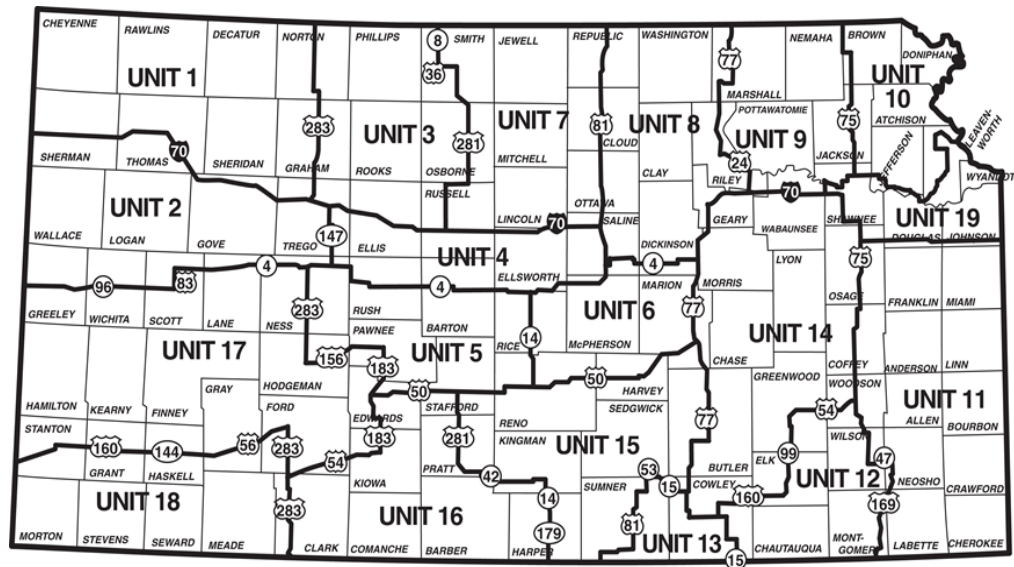
* Respondents were given the option to just check this column if all apply.

** Rather than being asked about species-specific access, those who lease WIHA were asked whether they allow a fall lease (all wildlife), with 3 responding in the affirmative, and whether they allow both a fall and spring lease, with 2 responding in the affirmative.

Red font is the modal selected single species across all respondents in the row upon request to “circle one species for which the land was primarily leased to hunt.” (See last column in the Q32 and Q33 series survey table as part of the questionnaire above.) If no species was circled, then the most often appearing single species mention for the type of lease is in red.

Q34 How do you feel about the way KDWP manages deer populations?

- I am extremely satisfied..... 2.5
- I am satisfied.....32.8
- I am neither satisfied nor dissatisfied..... 44.5
- I am dissatisfied.....14.5
- I am extremely dissatisfied..... 5.5



Q35 Please use the Deer Management Unit map (above) to tell us in which Deer Management Unit and in which County *most* of your land is located:

Deer Management Unit #1-19: **SEE TABLE 1 OF REPORT** County _____

Q36 Where do you reside?

- On this farm/ranch.....62.1
- In the country, but not on the land I farm/ranch..... 6.9
- In a small town or rural community (less than 2,000 people).....13.9
- In a city or urban area.....16.9
- Outside of Kansas..... 0.3

Q37 How many years have you owned or operated this land? _____ (years)

MEAN= 35.6

MEDIAN= 35.0

STD DEV= 18.5

Q38 Approximately what percent of your household's net income last year was derived from agricultural products from this land?

_____ %

MEAN=45.2

MEDIAN=40.0

STD DEV=38.0

Q39 Please provide any additional comments you have about deer-related issues here:

Thank you very much for your time and for completing this survey. Please tape the booklet closed and drop it in any US Postal Service mailbox. The booklet is pre-addressed and postage is prepaid.

**Kansas Department of Wildlife and Parks
Emporia Research and Survey Office
P O Box 1525
Emporia, KS 66801
(620) 342-0658**

Appendix 2: Comparison of Key Sociodemographic Characteristics Last Three Surveys

Because there is a desire to conduct trend analysis with this 2022 deer survey as the most recent data point, it is important to assess how similar the different sampling frames and administration processes were in reaching the same profile of landowner. Samples from 2006, 2017, and 2022 are comparable on three sociodemographic characteristics of the final samples.

HOW MANY YEARS HAVE YOU OWNED OR OPERATED THIS LAND?

	2022	2017	2006
Mean	35.6 years	32.7 years	28.7 years
Median	35.0 years	32.0 years	27.0 years
Std. dev.	18.5 years	18.2 years	17.5 years

APPROXIMATELY WHAT PERCENT OF YOUR HOUSEHOLD'S NET INCOME LAST YEAR WAS DERIVED FROM AGRICULTURAL PRODUCTS FROM THIS LAND?

	2022	2017	2006
Mean	45.2%	40.8%	40.8%
Median	40.0%	30.0%	30.0%
Std. dev.	38.0%	37.1%	36.6%

WHERE DO YOU RESIDE?

	2022	2017	2006
On this farm/ranch	62.1%	66.6%	67.7%
In the country, but not on the land I farm/ranch	6.9%	7.9%	6.0%
In a small town or rural community (<2000 pop)	13.9%	10.5%	13.2%
In a city or urban area	16.9%	15.6%	10.0%
Outside of KS	0.3%	0.4%	3.1%