Weapon	Early Season	Late Season
Archery	Opens Sep 1 and closes the last Friday of the month	Opens Nov. 25 and closes Dec. 10 (no late season in GMUs 111, 113)
Modern Firearm	Opens the first Saturday after the 10 <sup>th</sup> of October and is open 14 days	Hard close date of Nov 19 and opens on the Saturday that ensures the season includes two full weekends. Under current structure the longest a late season could be is 15 days (when 19 <sup>th</sup> falls on Saturday—e.g., 2022) and shortest is 9 days (when 19 <sup>th</sup> falls on Sunday—e.g., 2023)
Muzzleloader	Opens last Saturday in Sept and runs for 9 days (two weekends)	In GMU 113 only, dates are Nov. 25 – Dec. 8
Special Permits: Mo	dern Firearm, 5 permits (Nov. 20	)-24) except GMU 113

Our objective was to identify options for managing white-tailed deer in northeast Washington that will:

- 1. Improve hunter satisfaction relative to their opportunity to harvest a mature buck
- 2. Retain late-season opportunities

General Themes of Proposal Options:

- 1. Eliminate late general seasons, but replace with special permits
- 2. Shorten late general seasons
- 3. Adjust the timing of late general seasons
- 4. Implement APRs

Considerations for all Proposals:

- 1. Most (83%) harvest of 4 pt. and 5 pt. bucks is occurring during early (26%) and late (57%) modern firearm general seasons.
- 2. Hunter success will be related to the status of the WTD population (e.g., is likely to increase if population increase), but hunter numbers also tend to follow population trend.
- 3. No guarantee any proposals will improve hunter satisfaction relative to opportunities to harvest mature bucks because all require more restrictions. For example, hunters are dissatisfied with their opportunity to harvest mature bull elk, even though WDFW explicitly manages elk to ensure mature bulls are retained within the population.
- 4. The prevalence of chronic-wasting disease (CWD) is consistently highest in adult bucks, so managing for more mature bucks could increase risk associated with CWD.

Pros Associated with all Proposals:

- 1. Although, it ranked the second lowest of motivations for hunting WTD, 50% of hunters indicated shooting a mature buck was important (32%) or extremely important (18%)
- 2. 51% of hunters indicated they were not at all satisfied with the number of mature white-tailed bucks seen while hunting
- 3. 57% of hunters were not satisfied with their opportunity to harvest a mature white-tailed buck
- 4. 42% of hunters agreed (28%) or strongly agreed (15%) that WTD in NE Washington should be managed to produce more mature bucks, even if it means reduced hunter opportunity
- 5. None of the proposals will negatively affect the resource

Cons Associated with all Proposals:

- 1. 58% of hunters indicated they agreed (34%) or strongly agreed (23%) that hunting regulations were too restrictive.
- 2. Only 10% of hunters indicated that hunting regulations should be more restrictive.
- 3. 55% of hunters who hunt in District 1, disagreed that WTD populations should be managed to produce more mature WTD bucks if it means reduced opportunity.
- 4. All strategies to manage for more mature bucks had >70% opposition, except for 2-pt. (57%) and 3-pt. APRs (54%).
- 5. With exception to APRs, none have received public input in concert with the rule making process.
- 6. Substantial changes in harvest will limit our ability to monitor population trend, at least initially (e.g. harvest not comparable to past years).
- 7. Any reduction in hunter days could have economic ramifications for local communities (e.g., decreased revenue for restaurants, hotels, gas stations, etc.).

If considered during the current cycle, staff preferred that proposals related to season length and timing be implemented in GMUs

105-121, rather than a subset of GMUs. Reasonings for that approach are:

- 1. Simplifies regulations.
- 2. Choosing which GMUs would be difficult and would require substantial public input.
- 3. Addresses concerns about hunters going to other GMUs and resulting in hunter-crowding issues.
- 4. 57% of hunters indicated APRs should be implemented in all GMUs and not just a subset and we assume those sentiments would apply to other proposals as well.

Option	Description	Pros	
Current Any Buck	Status Quo	<ul> <li>Reduces confusion for hunters</li> <li>88% of hunters who were opposed to APRs indicated they were satisfied with the current Any buck harvest strategy</li> <li>This received the most support (36%) in the 3-year season setting survey</li> </ul>	Hunters not sa
8-day late season with hard calendar dates of November 12-19	Shortens the modern firearm late season but retains the traditional end date of Nov. 19. Will always include 1 full weekend but will have an additional weekend day when the 12 <sup>th</sup> falls on a Saturday or Sunday.	<ul> <li>Maintains general season opportunity</li> <li>Likely to increase buck escapement</li> <li>Lessens confusion for hunters regarding season dates and makes it easier for them to plan ahead</li> <li>Maintains closing season date of Nov. 19th</li> </ul>	<ul> <li>Hunter :</li> <li>Reduced</li> <li>93% of shorteni</li> </ul>
4 pt. APRs	General season APRs (4pt+) in GMU 117 with an exemption for youth hunters	<ul> <li>Maintains general season opportunities</li> <li>Increased buck escapement for bucks with less than 4-pts (mostly yearlings)</li> <li>Hunter crowding issues may decline if hunter numbers decline</li> <li>Hunter success may increase if hunter numbers decline</li> <li>75% of respondents to the NWWG survey indicated support</li> </ul>	<ul> <li>Hunter i</li> <li>77% of APR</li> <li>Would a regulati</li> <li>May res</li> <li>Limits h</li> <li>Increase</li> <li>59% of they bel populati</li> <li>57% of all GMU</li> <li>If APRs Senior ( exempt.</li> </ul>
5-day late season, but closer to peak rut	Opens the Friday before the 3 <sup>rd</sup> Saturday in November. The earliest this season would occur is Nov. 15 <sup>th</sup> -19 <sup>th</sup> and the latest would be Nov. 21 <sup>st</sup> - 25 <sup>th</sup> .	<ul> <li>Maintains general season opportunity</li> <li>Bucks are more active (closer to peak of rut)</li> <li>May increase overall buck escapement because of shorter season</li> <li>Hunters are more likely to see mature bucks while hunting</li> <li>Increase opportunity to harvest mature buck because closer to rut</li> <li>Will overlap with Thanksgiving weekend in some years</li> </ul>	<ul> <li>Hunters on Nov. research of the 2</li> <li>Reduced</li> <li>93% of shortenia</li> <li>Hunter</li> </ul>

Cons

atisfied with the current structure will be unhappy success likely to decrease ed hunt days hunter respondents to WSU survey opposed ing season length numbers are likely to decline hunter respondents to WSU survey opposed 4-pt affect highest number of hunters that oppose on (most popular hunt units) sult in an increase of non-legal bucks being shot harvest opportunity es harvest pressure on mature (4.5+) bucks hunters that did not support APRs, did so because lieved there are already enough mature bucks in the ion hunters indicated APRs should be implemented in Us and not just a subset s are implemented, hunters indicated youth (70%), (66%), and disabled (72%) hunters should be in D1 have been trained to have this season end . 19th as a firm date because current and past n indicates peak of the rut occurs during the week  $0^{\text{th}}$ . ed hunt days hunter respondents to WSU survey opposed

ing season length

success may decrease

Permit only for modern firearm late season with hard calendar dates of Nov. 15-25	Because this special permit season would be established to offset lost general season opportunity, it is likely 1,500 or more special permits would be offered. This number would be adjusted with the intent of reducing buck harvest during the late season. Other specifics associated with this proposal would still need to be identified (e.g., target for % reduction in buck harvest, GMU- specific or District-wide permit, etc.).	<ul> <li>Increased buck escapement</li> <li>Hunter crowding decreased</li> <li>May see increased hunter success</li> <li>Quality of hunter experience would increase for special permit holders</li> <li>Potential opportunity to harvest more mature bucks (Palouse hunt outcome/experience)</li> <li>Only 30% of hunters were satisfied (26.4%) or very satisfied (3.2%) with the number of hunters encountered while hunting</li> <li>Large number of permits are likely to be offered, with a high probability of being drawn</li> </ul>	<ul> <li>79% of eliminat</li> <li>Decreas</li> <li>Hunters</li> <li>Loose tr</li> <li>Increase</li> <li>Meeting difficult</li> <li>Percepti monetar</li> </ul>
3 pt. APRs	General season APRs (3pt+) in GMUs 117 and/or 121 with exemption for youth, senior (65+), and disabled hunters	<ul> <li>Maintains general season opportunities</li> <li>May increase buck escapement for spikes and 2 pt. bucks (mostly yearlings)</li> <li>Makes regulations more consistent with some other WTD units in Districts 2 and 3</li> <li>Makes WTD regulation consistent with mule deer regulation</li> <li>This received the second most support (29%) in the 3-year package survey</li> </ul>	<ul> <li>Hunter r</li> <li>Hunters GMUs t</li> <li>May res</li> <li>Limits h</li> <li>59% of 1 they bel populati</li> </ul>
9-day late season with hard calendar dates of Nov. 7-15	Shortens the late modern firearm season and closes it before the traditional Nov. 19 end date further from the rut. Only open during one full weekend in most years, but will include two full weekends when the 7 <sup>th</sup> falls on a Saturday	<ul> <li>Maintains general season opportunity</li> <li>May increase buck escapement</li> <li>Would overlap with the elk general season in some years</li> <li>Lessens confusion for hunters regarding season dates and makes it easier for them to plan</li> </ul>	<ul> <li>Hunters on Nov. research of the 20</li> <li>Hunter s</li> <li>Reduced</li> <li>93% of shorteni</li> <li>Hunters</li> </ul>

hunter respondents to WSU survey opposed ting late seasons and providing limited permits sed opportunity for majority of hunters

s may not be able to hunt late season every year radition of late season hunt that many hunters have ed pressure in early season

g harvest allocation objectives may become more

ion that we are only going to permit only for ry purposes

numbers may decline

s who do not want this restriction will go to other to hunt

sult in an increase of non-legal bucks being shot harvest opportunity

hunters that did not support APRs, did so because lieved there are already enough mature bucks in the ion

s in D1 have been trained to have this season end . 19th as a firm date because current and past h indicates peak of the rut occurs during the week 0<sup>th</sup>.

success may decrease

#### d hunt days

hunter respondents to WSU survey opposed ing season length

s may not see as many mature bucks

# Hunter opinions on potential white-tailed deer antler point restrictions (APR) in District 1

Prepared by: Ilai Keren, Wildlife program - Science Division

August 17, 2020

**Executive summary:** While not satisfied with mature white-tailed buck opportunity, hunters are split on the value of it's management with the majority, especially those hunting in District 1, not supportive of further restricting regulations. Hunters were not supportive of any reduction in general season opportunity in the district but 2- and 3-pt APR, with exceptions, were the least opposed.

The Social and Economic Sciences Research Center in Washington State University (WSU-SESRC) administered this online opinion survey on behalf of WDFW. Invitations to complete the survey were sent by email to all deer hunters reporting effort in Districts 1,2,3 or 6 in any of the last four license years (2016-2019), Washington residents older than 18 at the time of the survey and not opted out of email communications for their WILD account. Two reminder emails were sent in following weeks to non respondents.

The survey instrument consisted of 13 questions, a mixture of informative (for example "how many years did you hunt...") and opinion/rating on dichotomous ("Yes", "No") or polytomous ("Strongly agree", "Agree",..., "Strongly disagree") ordinal scales.

Most questions contained multiple items or statements for respondents to score. In addition to reporting frequencies and proportions of hunter responses, cumulative logit models were used to quantify interactions between question items. Two parameters estimated in this analysis were  $\hat{\beta}$ , the average difference in *satisfaction, support* or *agreement* between items across all ordinal categories, and  $\hat{\delta}$ , a measure of dependency between ordinal categories and individual *satisfaction, support* or *agreement* across response patterns to all items. See Appendix at the end of this document for details on how these metrics were derived and interpreted.

## 1 Demographics

A total of 13,110 hunters responded to the survey for an overall return rate of 29.3% deer hunters. Participation was greater from hunters that reported white-tailed harvest and hunting in District 1 in the past (Table 1). Note, stratification in Table 1 is based on annual harvest reports of 2016-2019. A larger percentage of hunters in the survey (66.4%) reported hunting white tailed in District 1 in the last 10 years and only a small number of hunters responding did not hunt for white-tailed at all (Table 2). County of residence (Ferry/Stevens/Pend Oreille or other) and age did not seem to disproportionately impact response rates.

F ·				-)			- 0 -
	WT D1	Hunt D1	WT else	Hunt else	Reside D1	Reside else	Age
Surveyed Hunters responding	7,091(16%) 2,799(21%)	9,813(22%) 2,877(22%)	$7,238(16\%) \\ 2,497(19\%)$	20,567(46%) 4,937(38%)	$\begin{array}{c c} 3,571(8\%) \\ 1,089(8\%) \end{array}$	41,138(92%) 12,021(92%)	$49 \pm 16 \\ 52 \pm 15$
% return	39.5	29.3	34.5	24	30.5	29.2	

Table 1: Responses stratified by harvest reports, county of residence and average age.

#### 2 Hunting experience

The majority of hunters have been hunting white-tailed in addition to other deer species over 10 years (Table 2). For those hunters that did not hunt for white-tailed, low availability of mature bucks was the third most common reason cited but significantly less than distance and access (Table 3). Note, 37 hunters did not answer on any of the items and 171 explicitly answered "No" to all available reasons, implying a reason other than the choices listed. However, only 173 of those that did not hunt stated they are not interested in hunting white-tailed deer in WA compared with 524 that answered "yes".

Table 2: Species hunted in the last 10 years by number of years deer hunting in Washington.

	1-5	1-5 year		years	Over 10 years	
	n	%	n	%	n	%
no WT	152	10.4	84	6.0	474	4.7
Exclusive WT	364	24.9	234	16.7	$1,\!156$	11.5
WT+	943	64.6	$1,\!085$	77.3	8,454	83.8

Table 3: Hunter response to "What are the reasons you have not hunted..."

	n	$\%^{\dagger}$	$\hat{\delta}$
Too far to travel	311	36.8	$0.127 \pm 0.098$
Not enough access	286	33.8	$0.885 \pm 0.132$
Not enough mature bucks	195	23.0	$2.519 \pm 0.422$
Not enough deer	185	21.9	$2.771 \pm 0.507$
Limited opportunity to harvest antlerless deer	161	19.0	$1.295 \pm 0.178$
I hunt white tailed deer in other state	72	8.5	$0.04 \pm 0.166$

<sup>†</sup> item specific percent answering "yes" out of total (yes , no , no answer).

Being outdoors and enjoying nature was the most important item to the white-tailed deer hunting experience with shooting a buck ranking the lowest (Fig. 1). The differences between being outdoors and other items ( $\hat{\beta}$ ) steadily declined from -0.93 (being with friends and family) to -2.76 (shooting a mature buck). In contrast  $\hat{\delta}$  values exhibited a pattern of low values for harvest outcome items filling the freezer, shooting buck and shooting a mature buck (0.12, 0.21, 0.3 respectively) compared with the others (1.6, 1.8, 2.7 for introducing a new hunter, being outdoors and being with friends/family respectively).

Despite scoring low in *importance*, hunters were clearly not satisfied with the number of mature bucks seen while hunting (Table 4). It was the only item a majority of hunters scored as **not at all satisfied** with, while on all other items, hunters scored **somewhat satisfied** at higher rates than **not at all**. High correlations between all three "numbers seen" items (deer, bucks, mature bucks) may have contributed to the high  $\hat{\delta}$  values.



Figure 1: Number of hunters scoring items in terms of *importance* sorted top to bottom on  $\hat{\beta}_j$ . Numbers in parenthesis are % of total responses to an item not including missing answers. May not sum to 100% due to rounding.

Table 4: For each of the following factors, please tell us how satisfied you are with your white-tailed deer hunting experience in Washington.

		n			_	
	not at all	somewhat	satisfied	very	$\Delta \hat{\beta}^{\dagger}$	$\hat{\delta}^{\ddagger}$
The number of mature white-tailed	6,160	3,882	1,715	218	$-1.393 \pm 0.024$	2.670
bucks seen while hunting						
The number of white-tailed bucks seen	$4,\!661$	4,775	2,284	282	$-0.925 \pm 0.024$	3.622
while hunting						
The number of other hunters encoun-	$3,\!649$	4,755	3,160	385	$-0.529 \pm 0.023$	0.764
tered while hunting afield						
The number of white-tailed deer seen	2,974	4,776	$3,\!616$	594	$-0.251 \pm 0.023$	2.649
while hunting						
The length of the white-tailed deer hunt-	2,941	4,076	4,348	621	$-0.085 \pm 0.024$	0.748
ing season						
Access to white-tailed deer hunting areas	2,513	4,444	4,347	663	$0.003 \pm 0.023$	0.995
The timing of the white-tailed deer hunt-	2,188	4,401	4,781	626	$0.134 \pm 0.023$	0.847
ing season						
Your overall white-tailed deer hunting	1,834	$5,\!625$	4,063	502		2.095
experience in Washington.						

<sup>†</sup> Average difference in importance from the reference item (last). Measured on the latent logit scale.

<sup>‡</sup> 3-way interactions between items 1,2 and 4 precluded deriving stable standard error estimates.

The majority of dissatisfied hunters agreed or strongly agreed regulations are too restrictive and disagreed (or disagreed strongly) regulations should be more restrictive (Fig. 2). Hunters opposing added restrictions were the vast majority of all hunters and 60.5% of those dissatisfied with mature buck opportunity and not necessarily agreeing regulations are too restrictive.



Figure 2: 3-way interactions of hunter agreement that regulations should be more restrictive (left - blue vs. gray shade) given current level of restrictions (top - dark vs. light shade) and satisfaction with mature buck hunting (bottom). Cells are proportional to values indicating number of respondents. For example, 4,327 (36%) respondents disagreed (or strongly disagreed) with being "Satisfied with my opportunity to harvest a mature buck" but also agree or strongly agree current regulations are too restrictive and disagree (strongly) regulations should not be made more restrictive. Conversely, only 1,042 (9% of of all hunters) in the bottom left cell were dissatisfied with mature buck harvest <u>and</u> thought regulations are not restrictive and should be made more restrictive. 649 hunters that did not answer or answered "no opinion" to satisfaction with mature buck hunting are not shown.

### 3 Management in GMUs 101-121

Before being presented with specific management options hunters were asked if they hunted in northeast WA (a map of District 1 GMUs provided) and were presented with a general statement about management for mature bucks (Table 5). Overall, hunters were split on the question of managing for more mature bucks but with majority of hunters that hunted District 1 in the last 10 years disagreeing more strongly than those who did not. As expected, stronger opinions (in both directions) on the management in District 1 are held by those that hunt there relative to those that do not.

Table 5: How strongly would you disagree or agree that white-tailed deer populations in northeast Washington should be managed to produce more mature white-tailed bucks, even if it means reduced opportunity for hunters.

Hunt D1	Disagree strongly	Disagree	N/A/O	Agree	Agree strongly
Yes	1,995 (25.8%)	2,245 (29.1%)	280 (3.6%)	1,993 (25.8%)	1,211 (15.7%)
No	492 (12.6%)	995 (25.5%)	800 (20.5%)	1,176 (30.1%)	442 (11.3%)
N/A	131 (13.1%)	258 (25.7%)	200 (19.9%)	249 (24.8%)	165 (16.5%)

For the most part hunters were opposed to all seven potential management strategies presented for District 1 with none of the items receiving more than a total of 46% support and strong support (Fig. 3). Relative to 4-pt APR and other restrictions on general season structure, 2- and 3-pt APR were the least opposed but even for those items the number of hunters that strongly opposed was comparable with those that support and approximately 3 times those that strongly support. This pattern contributed to a model estimated average support ( $\hat{\beta}$ ) for 3-point APR just -0.054 ± 0.03 lower than 2-pt (not significant) and with  $\hat{\delta}$  value of -1.151 ± 0.035 compared with -0.672 ± 0.028 for 2-pt. In contrast a 4-pt APR was -0.775 ± 0.03 lower than 2-pt with  $\hat{\delta}$  value of -1.196 ± 0.037.

Consistent with the previous results, those hunters that did not support any of the APRs cited "adequate numbers of mature bucks" significantly less than any other reason (Table 6). A high  $\hat{\delta}$  estimate for item 2 ("limit opportunity") relative to all other items supports a conclusion that majority hunter opinion reflected in this survey was dissatisfaction with the number of mature bucks does not warrant limiting opportunity via added restrictions.

Table 6:	Reasons	for	not	supporting	APR
				11 ()	

	n	%	$\hat{\delta}$
Satisfied with the current 'Any Buck' strategy	3,292	88.2	$1.831 \pm 0.122$
Limit opportunity for all hunters	$3,\!057$	81.9	$2.662 \pm 0.202$
Limit opportunity for youth, disabled, or senior	2,944	78.9	$1.922 \pm 0.121$
May result in an increase of non-legal bucks	$2,\!631$	70.5	$1.226 \pm 0.075$
There is already an adequate number of mature	$2,\!197$	58.9	$1.363 \pm 0.084$
bucks in the population			

Those that supported at least one of the APR options, mostly supported district wide implementation (Table 7) but also supported exceptions for youth, senior and disabled hunters (Fig. 4).

Table 7: In which Game Management Units should apply antler-point restrictions?

	All	None	Some	101	105	108	111	113	117	121
n %	$4,962 \\ 56.8$	$1,030 \\ 11.8$	$2,742 \\ 31.4$	$  1,183 \\ 43.1 $	$1,083 \\ 39.5$	$1,160 \\ 42.3$	$1,247 \\ 45.5$	$1,303 \\ 47.5$	$1,509 \\ 55.0$	$1,516 \\ 55.3$



Figure 3: Number of hunters opposing and supporting different management options. Values in parenthesis are item specific proportions out of total responses not including missing answers. Sort order top to bottom according to the average support  $\hat{\beta}$ .



Figure 4: Proportional depiction of number of responses to "If antler-point restrictions were to be implemented in northeast Washington, should exceptions be considered for the following hunter groups?". Only hunters indicating support for APR were delivered this question.

### Appendix

This appendix is not intended to be a comprehensive review of proportional odds or itemresponse theory but to briefly outline the approach used to quantify hunter opinion in this survey. Numerous resources available on these topics can provide more details on statistical justifications and mechanisms for these inferential methods.

In the simple case of a question scoring multiple items with yes/no answers, the frequencies of responses determine the relative rankings of different items. The proportions of yes/no answers can also be viewed as the probability respondents, that naturally vary in their opinions, are beyond the mid-point of a latent (unobserved) continuous scaled variable  $(Y^*)$  representing *support*, *satisfaction* or *agreement*. For example, the probability a hunter chosen at random is "*supportive* of item  $x_2$  relative to  $x_1$ " is comparable to "more hunters answered **yes** on  $x_2$ ".

This latent variable motivation can be extended to the case a continuous  $Y^*$  is binned into more than two categories  $(Y_k, k \in K \text{ usually 4 or 5})$  on an ordinal scale such as 1- very dissatisfied, 2- dissatisfied,...(Fig. 5). In this case the cumulation of probabilities a respondent is beyond each cutoff  $\alpha_{k-1}$  provides a measure of relative difference between items. We fit a proportional odds model to estimate  $\beta$ , the natural log odds a response is  $\leq k$  for item  $x_2$  relative to  $x_1$ , using all cumulative logits simultaneously [1, Agresti, 2002]. In this model cutoff values are estimated from data which, as in Fig. 5, allows for non-equal distances (on the logit scale) between categories. For example, often the difference between "disagree" (Y = 2) and "agree" (Y = 3) may be larger than "agree" (Y = 3) and "strongly agree" (Y = 4) or "not at all satisfied" to "somewhat satisfied" to "satisfied" which gets accounted for in the estimation of  $\beta$ .



Figure 5: An illustration of the latent variable motivation to analysis of ordinal data from Agresti's (2002) Figure 7.5. Two items  $(x_1, x_2)$  are scored on the ordinal scale  $Y \in \{1, 2, 3, 4\}$  (right axis) corresponding to the increasing continuous  $Y^*$  latent variable (left-axis). In the proportional odds model the slope of the line  $(\hat{\beta})$  is jointly estimated with the latent cutoff values of transition between categories  $(\hat{\alpha})$ .

This model can be further extended in two ways. First, since the same respondent is rating all items, data can be considered clustered around an individual random effect. In other words, an individual's "place" on the latent scale can impact the patterns of response such that they may score all items as **strongly disagree** and **disagree** compared with another individual that may have the same rankings for items but a different range of responses. Second, not all items may have the same cutoff values because the "translation" of ordinal categories to the latent scale can differ even as they are presented together in the same question. For example consider the scorings on Fig. 1, hunters may have different considerations and therefore scale of *importance/satisfaction* for items related to the hunting experience (such as being outdoors) vs. a specific outcome (a successful harvest).

We used the **ltm** package [2, Rizopoulos, 2006] in program **R** [3, R Core Team, 2020] to fit the unconstrained graded response model [4, Samejima, 1969] for respondent i scoring their attitude toward item j as one of k levels:

$$Pr_{ij}(Y \le y_{[k]}) = \frac{e^{\delta_j(\theta - \alpha_{jk})}}{1 + e^{\delta_j(\theta - \alpha_{jk})}}$$

where  $\delta_j$  is the discrimination parameter denoting the item specific "slope" of the above boundary characteristic function,  $\theta$  is the level of the latent trait and  $\alpha_{j1} < \alpha_{j2} < \cdots < \alpha_{jk-1}$ are item specific boundary locations (cutoffs). The same model applied to dichotomous questions (a single  $\alpha_j$ ) reduces to a simple item-response model.

It is important to note that by allowing item specific boundaries the focus shifts from estimating differences between items across cutoffs, to the analysis of individual <u>patterns</u> of response across items. Thus, higher  $\hat{\delta}_j$  values suggest a response pattern consistent with individual variance in opinion, not whether the probability of  $a \leq k$  response to item  $x_j$  is high or low (Fig. 6).



Figure 6: Characteristic curves for select items from Table 4 representing moderate (left) and high (right)  $\hat{\delta}$ . Panels range on a latent scale between -3.8 and 3.8 (95% of the logistic distribution).

While hunters are not as dissatisfied with crowding as with the number of mature bucks (Table 4), dissatisfaction is "across the board" where the likelihood of a not at all satisfied answer in the left panel declines slowly such that even hunters mostly satisfied with other items are not likely to be very satisfied with crowding. In contrast dissatisfied hunters are almost guaranteed to be dissatisfied with the number of mature bucks (left side of the right panel) but the probability of the not at all satisfied answer declines sharply as the item does well to differentiate dissatisfied from satisfied hunters.

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# Q03A What are the reasons you have not hunted white-tailed deer in Washington in the past 10 years?: Too far to travel

	Frequency		Percent	Valid Percent	Cumulative Percent
Valid	1 Yes	311	2.4	49.8	49.8
	2 No	314	2.4	50.2	100.0
	Total	625	4.8	100.0	
Missing	-3 Branching/skip	12242	93.4		
	-2 Partial/breakoff	22	0.2		
	-1 No answer	221	1.7		
	Total	12485	95.2		
Total		13110	100.0		



Q03B What are the reasons you have not hunted white-tailed deer in Washington in the past 10 years?: Not enough access

	Frequency		Percent	Valid Percent	Cumulative Percent
Valid	1 Yes	286	2.2	47.6	47.6
	2 No	315	2.4	52.4	100.0
	Total	601	4.6	100.0	
Missing	-3 Branching/skip	12242	93.4		
	-2 Partial/breakoff	22	0.2		
	-1 No answer	245	1.9		
	Total	12509	95.4		
Total		13110	100.0		

Q03C What are the reasons you have not hunted white-tailed deer in Washington in the past 10 years?: Not enough deer

Frequency Percent

Valid Cumulative Percent Percent



Valid	1 Yes	185	1.4	33.2	33.2
	2 No	372	2.8	66.8	100.0
	Total	557	4.2	100.0	
Missing	-3 Branching/skip	12242	93.4		
	-2 Partial/breakoff	22	0.2		
	-1 No answer	289	2.2		
	Total	12553	95.8		
Total		13110	100.0		

Q03D What are the reasons you have not hunted white-tailed deer in Washington in the past 10 years?: Not enough mature bucks

	F	requency	Percent	Valid Percent	Cumulative Percent
Valid	1 Yes	195	1.5	35.3	35.3
	2 No	358	2.7	64.7	100.0
	Total	553	4.2	100.0	
Missing	-3 Branching/skip	12242	93.4		
	-2 Partial/breakoff	22	0.2		
	-1 No answer	293	2.2		
	Total	12557	95.8		
Total		13110	100.0		

Q03E What are the reasons you have not hunted white-tailed deer in Washington in the past 10 years?: Limited opportunity to harvest antierless deer

	Fr	equency	Percent	Valid Percent	Cumulative Percent
Valid	1 Yes	161	1.2	30.0	30.0
	2 No	375	2.9	70.0	100.0
	Total	536	4.1	100.0	
Missing	-3 Branching/skip	12242	93.4		
	-2 Partial/breakoff	22	0.2		
	-1 No answer	310	2.4		





30.0





the following to your hunting experience?: Filling the freezer

		Frequency	Percent	/alid Percent	Cumulative				
Valid	1 Not important	1073	8.2	9.0	9.0				
	2 Somewhat	2331	17.8	19.5	28.4			71	.6%
	3 Important	3951	30.1	33.0	61.4				
	4 Extremely	4620	35.2	38.6	100.0	28.5%			
	Total	11975	91.3	100.0					
Missing	-3 Branching/skip	845	6.4					33.0	38.6
	-2 Partial/breakoff	52	0.4				19.5		
	-1 No answer	238	1.8			9.0			
	Total	1135	8.7			1 Not important	2 Somewhat	3 Important	4 Extremely
Total		13110	100.0			-	important	-	important
Valid	F	Frequency	Percent	Valid Percent	Cumulative Percent				
		requeriey	reroent	Percent	Percent				
Valid	1 Not important	2261	17.2	19.3	19.3				
	2 Somewhat important	3863	29.5	32.9	52.2				
	3 Important	4075	31.1	34.7	87.0				
	4 Extremely important	1529	11.7	13.0	100.0	52.2%			47.7%
	Total	11728	89.5	100.0					
Missing	-3 Branching/skip	845	6.4				32.9	34.7	
	-2 Partial/breakoff	52	0.4			19.3			13.0
	-1 No answer	485	3.7						
	Total	1382	10.5			1 Not important	2 Somewhat	3 Important	4 Extremely
Total		13110	100.0				important		important
Q050	C When hunting	white-taile	d deer in Wa	shington ho	w important is				
the f	ollowing to your	hunting ex	perience?: <mark>S</mark>	hooting a m	ature buck				
	F	Frequency	Percent	Valid Percent	Cumulative Percent				

Valid	1 Not important	2503	19.1	21.2	21.2
	2 Somewhat	3421	26.1	29.0	50.2
	important				
	3 Important	3770	28.8	31.9	82.1
	4 Extremely	2117	16.1	17.9	100.0
	important				
	Total	11811	90.1	100.0	
Missing	-3 Branching/skip	845	6.4		
	-2 Partial/breakoff	52	0.4		
	-1 No answer	402	3.1		
	Total	1299	9.9		
Total		13110	100.0		

Q05D When hunting white-tailed deer in Washington how important is the following to your hunting experience?: Being with friends and family

	Fr	requency	Percent	Valid Percent	Cumulative Percent
Valid	1 Not important	668	5.1	5.6	5.6
	2 Somewhat important	1148	8.8	9.6	15.3
	3 Important	3559	27.1	29.9	45.2
	4 Extremely important	6526	49.8	54.8	100.0
	Total	11901	90.8	100.0	
Missing	-3 Branching/skip	845	6.4		
	-2 Partial/breakoff	52	0.4		
	-1 No answer	312	2.4		
	Total	1209	9.2		
Total		13110	100.0		

**Q05E** When hunting white-tailed deer in Washington how important is the following to your hunting experience?: Introducing a new hunter to deer hunting

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Not important	1378	10.5	11.7	11.7
	2 Somewhat important	2319	17.7	19.8	31.5





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	3 Important	4060	31.0	34.6	66.1
	4 Extremely important	3981	30.4	33.9	100.0
	Total	11738	89.5	100.0	
Missing	-3 Branching/skip	845	6.4		
	-2 Partial/breakoff	52	0.4		
	-1 No answer	475	3.6		
	Total	1372	10.5		
Total		13110	100.0		

Q05F When hunting white-tailed deer in Washington how important is the following to your hunting experience?: Being outdoors/enjoying nature

	F	requency	Percent	Valid Percent	Cumulative Percent
Valid	1 Not important	142	1.1	1.2	1.2
	2 Somewhat important	307	2.3	2.5	3.7
	3 Important	2618	20.0	21.7	25.5
	4 Extremely important	8975	68.5	74.5	100.0
	Total	12042	91.9	100.0	
Missing	-3 Branching/skip	845	6.4		
	-2 Partial/breakoff	52	0.4		
	-1 No answer	171	1.3		
	Total	1068	8.1		
Total		13110	100.0		

Q06A For each of the following factors, please tell us how satisfied you are with your white- tailed deer hunting experience in Washington. The length of the white-tailed deer hunting season

	Fr	equency	Percent	Valid Percent	Cumulative Percent
Valid	1 Not at all satisfied	2941	22.4	24.5	24.5
	2 Somewhat satisfied	4076	31.1	34.0	58.5
	3 Satisfied	4348	33.2	36.3	94.8





1.22.51 Not important2 Somewhat3 Important4 Extremely<br/>importantimportantimportant

58.5%

	4 Very satisfied	621	4.7	5.2	100.0
	Total	11986	91.4	100.0	
Missing	-3 Branching/skip	845	6.4		
	-2 Partial/breakoff	166	1.3		
	-1 No answer	113	0.9		
	Total	1124	8.6		
Total		13110	100.0		

Q06B For each of the following factors, please tell us how satisfied you are with your white- tailed deer hunting experience in Washington. The timing of the white-tailed deer hunting season

	Frequency		Percent	Percent Valid Percent	
Valid	1 Not at all satisfied	2188	16.7	18.2	18.2
	2 Somewhat satisfied	4401	33.6	36.7	54.9
	3 Satisfied	4781	36.5	39.9	94.8
	4 Very satisfied	626	4.8	5.2	100.0
	Total	11996	91.5	100.0	
Missing	-3 Branching/skip	845	6.4		
	-2 Partial/breakoff	166	1.3		
	-1 No answer	103	0.8		
	Total	1114	8.5		
Total		13110	100.0		

Q06C For each of the following factors, please tell us how satisfied you are with your white- tailed deer hunting experience in Washington. Access to white-tailed deer hunting areas

	Fr	equency	Percent	Valid Percent	Cumulative Percent
Valid	1 Not at all satisfied	2513	19.2	21.0	21.0
	2 Somewhat satisfied	4444	33.9	37.1	58.1
	3 Satisfied	4347	33.2	36.3	94.5
	4 Very satisfied	663	5.1	5.5	100.0
	Total	11967	91.3	100.0	
Missing	-3 Branching/skip	845	6.4		
	-2 Partial/breakoff	166	1.3		



1 Not at all2 Somewhat3 Satisfied4 Very satisfiedsatisfiedsatisfied



	-1 No answer	132	1.0					5.5
	Total	1143	8.7		1 Not at all	2 Somewhat	3 Satisfied	4 Very satisfied
Total		13110	100.0		satisfied	satisfied		

Q06D For each of the following factors, please tell us how satisfied you are with your white- tailed deer hunting experience in Washington. The number of white-tailed deer seen while hunting

	Fre	equency	Percent	Valid Percent	Cumulative Percent
Valid	1 Not at all satisfied	2974	22.7	24.9	24.9
	2 Somewhat satisfied	4776	36.4	39.9	64.8
	3 Satisfied	3616	27.6	30.2	95.0
	4 Very satisfied	594	4.5	5.0	100.0
	Total	11960	91.2	100.0	
Missing	-3 Branching/skip	845	6.4		
	-2 Partial/breakoff	166	1.3		
	-1 No answer	139	1.1		
	Total	1150	8.8		
Total		13110	100.0		

Q06E For each of the following factors, please tell us how satisfied you are with your white- tailed deer hunting experience in Washington. The number of white-tailed bucks seen while hunting

	Frequency		Percent	Valid Percent	Cumulative Percent
Valid	1 Not at all satisfied	4661	35.6	38.8	38.8
	2 Somewhat satisfied	4775	36.4	39.8	78.6
	3 Satisfied	2284	17.4	19.0	97.7
	4 Very satisfied	282	2.2	2.3	100.0
	Total	12002	91.5	100.0	
Missing	-3 Branching/skip	845	6.4		
	-2 Partial/breakoff	166	1.3		
	-1 No answer	97	0.7		







	Total	1108	8.5			1 Not at all	2 Somewhat	3 Satisfied	4 Very satisfied
Total		13110	100.0			satisfied	satisfied		
Q06F are	For each of the fol with your white- ta The number of mat	llowing fac ailed deer l <mark>ure white</mark> -	ctors, please hunting expe tailed bucks	e tell us how s erience in Was seen while h	atisfied you shington. unting				
	Fre	equency	Percent	Valid Percent	Cumulative Percent				
Valid	1 Not at all satisfied	6160	47.0	51.4	51.4				
	2 Somewhat satisfied	3882	29.6	32.4	83.9				
	3 Satisfied	1715	13.1	14.3	98.2	8	3.8%		
	4 Very satisfied	218	1.7	1.8	100.0				
	Total	11975	91.3	100.0		51.4			
Missing	-3 Branching/skip	845	6.4				32.4	1	6.1%
	-2 Partial/breakoff	166	1.3					14.3	
	-1 No answer	124	0.9					14.3	1.8
	Total	1135	8.7			1 Not at all	2 Somewhat	3 Satisfied	4 Very satisfied
		13110	100.0			satisfied	satisfied		

	Frequency		Percent	Valid Percent	Cumulative Percent
Valid	1 Not at all satisfied	3649	27.8	30.5	30.5
	2 Somewhat satisfied	4755	36.3	39.8	70.3
	3 Satisfied	3160	24.1	26.4	96.8
	4 Very satisfied	385	2.9	3.2	100.0
	Total	11949	91.1	100.0	
Missing	-3 Branching/skip	845	6.4		
	-2 Partial/breakoff	166	1.3		
	-1 No answer	150	1.1		
	Total	1161	8.9		



Total		13110	100.0		
Q06H are Yo	For each of the fo with your white- ta ur overall white-ta	llowing fac ailed deer l <mark>iled deer h</mark>	ctors, please hunting exp unting expe	e tell us how erience in Wa rience in Wa	satisfied you ashington. <mark>shington.</mark>
	Fr	equency	Percent	Valid Percent	Cumulative Percent
Valid	1 Not at all satisfied	1834	14.0	15.3	15.3
	2 Somewhat satisfied	5625	42.9	46.8	62.0
	3 Satisfied	4063	31.0	33.8	95.8
	4 Very satisfied	502	3.8	4.2	100.0
	Total	12024	91.7	100.0	
Missing	-3 Branching/skip	845	6.4		
	-2 Partial/breakoff	166	1.3		
	-1 No answer	75	0.6		
	Total	1086	8.3		
Total		13110	100.0		

Q07A How strongly do you disagree or agree with each of the following statements about white-tailed deer hunting in the state of Washington? Hunting regulations in Washington are too restrictive.

	Frequency		Percent	Valid Percent	Cumulative Percent
Valid	1 Strongly disagree	581	4.4	4.6	4.6
	2 Disagree	3957	30.2	31.4	36.0
	3 Agree	4315	32.9	34.3	70.3
	4 Strongly agree	2930	22.3	23.3	93.6
	5 No opinion/ Did not hunt for white- tailed	806	6.1	6.4	100.0
	Total	12589	96.0	100.0	
Missing	-3 Branching/skip	173	1.3		
	-2 Partial/breakoff	243	1.9		
	-1 No answer	105	0.8		



57.6% 36% 31.4 34.3 23.3 6.4



Total	521	4.0	
Total	13110	100.0	

Q07B How strongly do you disagree or agree with each of the following statements about white-tailed deer hunting in the state of Washington? Hunting regulations in Washington should be more restrictive.

	Fr	equency	Percent	Valid Percent	Cumulative Percent
Valid	1 Strongly disagree	5015	38.3	39.9	39.9
	2 Disagree	5635	43.0	44.9	84.8
	3 Agree	998	7.6	7.9	92.7
	4 Strongly agree	317	2.4	2.5	95.2
	5 No opinion/ Did not hunt for white- tailed	599	4.6	4.8	100.0
	Total	12564	95.8	100.0	
Missing	-3 Branching/skip	173	1.3		
	-2 Partial/breakoff	243	1.9		
	-1 No answer	130	1.0		
	Total	546	4.2		
Total		13110	100.0		

Q07C How strongly do you disagree or agree with each of the following statements about white-tailed deer hunting in the state of Washington? I am satisfied with my opportunity to harvest a white-tailed buck in

#### Washington.

	Fr	equency	Percent	Valid Percent	Cumulative Percent
Valid	1 Strongly disagree	1405	10.7	11.1	11.1
	2 Disagree	3872	29.5	30.7	41.8
	3 Agree	5926	45.2	47.0	88.8
	4 Strongly agree	1003	7.7	8.0	96.8
	5 No opinion/ Did not hunt for white- tailed	405	3.1	3.2	100.0
	Total	12611	96.2	100.0	
Missing	-3 Branching/skip	173	1.3		



47.0

8.0

3.2

30.7

11.1

	-2 Partial/breakoff	243	1.9						1	
	-1 No answer	83	0.6			1 Strongly disagree	2 Disagree	3 Agree	4 Strongly agree	5 No opinion/ Did not hunt
	Total	499	3.8			-			-	for white-
Total		13110	100.0							tailed
Q07D staten I am sa	How strongly do nents about white atisfied with my c	you disag e-tailed dee pportunity in Wa	ree or agree er hunting in v to harvest a shington.	with each of the state of mature whi	f the following Washington? i <mark>te-tailed buck</mark>					
	F	requency	Percent	Valid Percent	Cumulative Percent					
Valid	1 Strongly disagree	2649	20.2	21.0	21.0					
	2 Disagree	4490	34.2	35.6	56.6					
	3 Agree	4160	31.7	33.0	89.6					
	4 Strongly agree	746	5.7	5.9	95.5	56.6	%			
	5 No opinion/ Did not hunt for white- tailed	561	4.3	4.5	100.0		25.6		38.9%	
	Total	12606	96.2	100.0		21.0	55.0	33.0		
Missing	-3 Branching/skip	173	1.3			21.0			5.9	4.5
	-2 Partial/breakoff	243	1.9				2.5:			
	-1 No answer	88	0.7			disagree	Z Disagree	3 Agree	4 Strongly agree	5 No opinion/ Did not hunt
	Total	504	3.8			0			0	for white-
Total		13110	100.0							tailed
<b>QU8</b> Valid	1 Yes	Frequency 7740	Percent	Valid Percent 66.4	Cumulative Percent 66.4					
	ZINU	3910	29.9	55.0	100.0					
Mincing	I OTAL	11658	88.9	100.0			66.4			
wissing	-3 Branching/skip	173	1.3							
	-2 Partial/breakoff	269	2.1						33.6	
	-1 No answer	1010	7.7							

	lotal	1452	11.1							
Total		13110	100.0				1 Yes		2 No	)
Q09 popu more m	How strongly wo lations in northea nature white-tailed	uld you disa ast Washing d bucks, ev hui	agree or agr gton should en if it mear nters.	ree that whit be manage is reduced o	te-tailed deer d to produce opportunity for					
		Frequency	Percent	Valid Percent	Cumulative Percent					
Valid	1 Strongly disagree	2618	20.0	21.1	21.1					
	2 Disagree	3498	26.7	28.2	49.4					
	3 Agree	3418	26.1	27.6	77.0					
	4 Strongly disagree	1818	13.9	14.7	91.7					
	5 No opinion	1034	7.9	8.3	100.0	49.3	%	42	2.3%	
	Total	12386	94.5	100.0						
Missing	-3 Branching/skip	173	1.3							
	-2 Partial/breakoff	305	2.3			21.1	28.2	27.6	14 7	r
	-1 No answer	246	1.9							
	Total	724	5.5			1 Strongly	2 Disagree	3 Agree	4 Strongly	5 No
Total		13110	100.0			disagree			disagree	

Q10A How strongly do you oppose or support each of the following strategies for managing white-tailed buck populations in northeast Washington?:

#### Implementing 4-pt antler-point restrictions.

	Fr	equency	Percent	Valid Percent	Cumulative Percent
Valid	1 Strongly oppose	5817	44.4	47.7	47.7
	2 Oppose	3486	26.6	28.6	76.3
	3 Support	1686	12.9	13.8	90.1
	4 Strongly support	1207	9.2	9.9	100.0
	Total	12196	93.0	100.0	
Missing	-3 Branching/skip	173	1.3		
	-2 Partial/breakoff	392	3.0		
	-1 No answer	349	2.7		
	Total	914	7.0		



Total		13110	100.0						
Q10B How strongly do you oppose or support each of the following strategies for managing white-tailed buck populations in northeast Washington?: Implementing 3-pt antler-point restrictions.									
	Fi	requency	Percent	Valid Percent	Cumulative Percent				
Valid	1 Strongly oppose	3944	30.1	32.2	32.2				
	2 Oppose	2633	20.1	21.5	53.7				
	3 Support	4090	31.2	33.4	87.1				
	4 Strongly support	1577	12.0	12.9	100.0				
	Total	12244	93.4	100.0					
Missing	-3 Branching/skip	173	1.3						
	-2 Partial/breakoff	392	3.0						
	-1 No answer	301	2.3						
	Total	866	6.6						
Total		13110	100.0						

Q10C How strongly do you oppose or support each of the following strategies for managing white-tailed buck populations in northeast Washington?:

Implementing 2-pt antler-point restrictions.

	Fr	equency	Percent	Valid Percent	Cumulative Percent
Valid	1 Strongly oppose	3647	27.8	30.1	30.1
	2 Oppose	3211	24.5	26.5	56.5
	3 Support	4025	30.7	33.2	89.7
	4 Strongly support	1252	9.5	10.3	100.0
	Total	12135	92.6	100.0	
Missing	-3 Branching/skip	173	1.3		
	-2 Partial/breakoff	392	3.0		
	-1 No answer	410	3.1		
	Total	975	7.4		
Total		13110	100.0		



1 Strongly 2 oppose



Q10D How strongly do you oppose or support each of the following strategies for managing white-tailed buck populations in northeast Washington?:

Shortening season lengths.

	Fr	equency	Percent	Valid Percent	Cumulative Percent
Valid	1 Strongly oppose	7029	53.6	57.8	57.8
	2 Oppose	4319	32.9	35.5	93.3
	3 Support	699	5.3	5.7	99.0
	4 Strongly support	122	0.9	1.0	100.0
	Total	12169	92.8	100.0	
Missing	-3 Branching/skip	173	1.3		
	-2 Partial/breakoff	392	3.0		
	-1 No answer	376	2.9		
	Total	941	7.2		
Total		13110	100.0		

Q10E How strongly do you oppose or support each of the following strategies for managing white-tailed buck populations in northeast

Washington?:

Eliminating general late seasons, but providing limited permit

	opportantioo.							
	Fr	equency	Percent	Valid	Cumulative			
				Percent	Percent			
Valid	1 Strongly oppose	6619	50.5	53.8	53.8			
	2 Oppose	3081	23.5	25.1	78.9			
	3 Support	2080	15.9	16.9	95.8			
	4 Strongly support	517	3.9	4.2	100.0			
	Total	12297	93.8	100.0				
Missing	-3 Branching/skip	173	1.3					
	-2 Partial/breakoff	392	3.0					
	-1 No answer	248	1.9					
	Total	813	6.2					
Total		13110	100.0					





Q10F How strongly do you oppose or support each of the following strategies for managing white-tailed buck populations in northeast Washington?: Eliminating general and special permit late seasons. Frequency Percent Valid Cumulative Percent Percent 88.2% Valid 1 Strongly oppose 7038 53.7 57.3 57.3 2 Oppose 3795 28.9 88.2 30.9 3 Support 1098 8.4 8.9 97.1 4 Strongly support 353 2.7 2.9 100.0 57.3 Total 12284 93.7 100.0 11.8% -3 Branching/skip Missina 173 1.3 30.9 -2 Partial/breakoff 392 3.0 8.9 2.9 -1 No answer 261 2.0 1 Strongly 2 Oppose **3** Support 4 Strongly Total 826 6.3 oppose support Total 13110 100.0 Q10G How strongly do you oppose or support each of the following strategies for managing white-tailed buck populations in northeast Washington?: Managing all harvest opportunities through the Department's special permit process. Cumulative Frequency Percent Valid Percent Percent Valid 1 Strongly oppose 66.5 8193 62.5 66.5 89.3% 2 Oppose 2812 21.4 22.8 89.4 8.5 3 Support 1048 8.0 97.9 4 Strongly support 260 2.0 2.1 100.0 66.5 Total 12313 93.9 100.0 Missing -3 Branching/skip 173 1.3 10.6% 22.8 -2 Partial/breakoff 392 3.0 8.5 2.1 -1 No answer 232 1.8 Total 797 6.1 1 Strongly 2 Oppose **3** Support 4 Strongly oppose support Total 13110 100.0

Q11A In the previous question you indicated support for antler-point restrictions in northeast Washington. In which Game Management Units do you think the Department should apply those restrictions?: GMU 101

	Fr	requency	Percent	Valid Percent	Cumulative Percent
Valid	1 Yes	6145	46.9	81.8	81.8
	2 No	1364	10.4	18.2	100.0
	Total	7509	57.3	100.0	
Missing	-3 Branching/skip	3922	29.9		
	-2 Partial/breakoff	454	3.5		
	-1 No answer	1225	9.3		
	Total	5601	42.7		
Total		13110	100.0		

Q11B In the previous question you indicated support for antler-point restrictions in northeast Washington. In which Game Management Units do you think the Department should apply those restrictions?: GMU 105

	F	requency	Percent	Valid Percent	Cumulative Percent
Valid	1 Yes	6045	46.1	81.2	81.2
	2 No	1397	10.7	18.8	100.0
	Total	7442	56.8	100.0	
Missing	-3 Branching/skip	3922	29.9		
	-2 Partial/breakoff	454	3.5		
	-1 No answer	1292	9.9		
	Total	5668	43.2		
Total		13110	100.0		

Q11C In the previous question you indicated support for antler-point restrictions in northeast Washington. In which Game Management Units do you think the Department should apply those restrictions?: GMU 108

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Valid	1 Yes	6122	46.7	82.2	82.2
	2 No	1323	10.1	17.8	100.0
	Total	7445	56.8	100.0	
Missing	-3 Branching/skip	3922	29.9		
	-2 Partial/breakoff	454	3.5		
	-1 No answer	1289	9.8		
	Total	5665	43.2		
Total		13110	100.0		

Q11D In the previous question you indicated support for antler-point restrictions in northeast Washington. In which Game Management Units do you think the Department should apply those restrictions?: GMU 111

	Frequency		Percent	Valid Percent	Cumulative Percent
Valid	1 Yes	6209	47.4	82.8	82.8
	2 No	1293	9.9	17.2	100.0
	Total	7502	57.2	100.0	
Missing	-3 Branching/skip	3922	29.9		
	-2 Partial/breakoff	454	3.5		
	-1 No answer	1232	9.4		
	Total	5608	42.8		
Total		13110	100.0		

Q11E In the previous question you indicated support for antler-point restrictions in northeast Washington. In which Game Management Units do you think the Department should apply those restrictions?: GMU 113

	F	requency	Percent	Valid Percent	Cumulative Percent
Valid	1 Yes	6265	47.8	83.1	83.1
	2 No	1274	9.7	16.9	100.0
	Total	7539	57.5	100.0	
Missing	-3 Branching/skip	3922	29.9		
	-2 Partial/breakoff	454	3.5		
	-1 No answer	1195	9.1		







Total	5571	42.5		
Total	13110	100.0	1 Yes	2 No

Q11F In the previous question you indicated support for antler-point restrictions in northeast Washington. In which Game Management Units do you think the Department should apply those restrictions?: GMU 117

	Fi	requency	Percent	Valid Percent	Cumulative Percent
Valid	1 Yes	6471	49.4	84.4	84.4
	2 No	1197	9.1	15.6	100.0
	Total	7668	58.5	100.0	
Missing	-3 Branching/skip	3922	29.9		
	-2 Partial/breakoff	454	3.5		
	-1 No answer	1066	8.1		
	Total	5442	41.5		
Total		13110	100.0		

Q11G In the previous question you indicated support for antler-point restrictions in northeast Washington. In which Game Management Units do you think the Department should apply those restrictions?: GMU 121

	F	requency	Percent	Valid Percent	Cumulative Percent
Valid	1 Yes	6478	49.4	84.3	84.3
	2 No	1206	9.2	15.7	100.0
	Total	7684	58.6	100.0	
Missing	-3 Branching/skip	3922	29.9		
	-2 Partial/breakoff	454	3.5		
	-1 No answer	1050	8.0		
	Total	5426	41.4		
Total		13110	100.0		

Q12A If antler-point restrictions were to be implemented in northeast Washington, should exceptions be considered for the following hunter groups?: Youth hunters (under 16)





	Frequency		Percent	Valid Percent	Cumulative Percent
Valid	1 Yes	5993	45.7	70.1	70.1
	2 No	2559	19.5	29.9	100.0
	Total	8552	65.2	100.0	
Missing	-3 Branching/skip	3922	29.9		
	-2 Partial/breakoff	472	3.6		
	-1 No answer	164	1.3		
	Total	4558	34.8		
Total		13110	100.0		

Q12B If antler-point restrictions were to be implemented in northeast Washington, should exceptions be considered for the following hunter groups?: Hunters with disabilities

	Frequency		Percent	Valid Percent	Cumulative Percent
Valid	1 Yes	6164	47.0	72.0	72.0
	2 No	2401	18.3	28.0	100.0
	Total	8565	65.3	100.0	
Missing	-3 Branching/skip	3922	29.9		
	-2 Partial/breakoff	472	3.6		
	-1 No answer	151	1.2		
	Total	4545	34.7		
Total		13110	100.0		

Q12C If antler-point restrictions were to be implemented in northeast Washington, should exceptions be considered for the following hunter groups?: Hunters age 65 years or older

	Fr	equency	Percent	Valid Percent	Cumulative Percent
Valid	1 Yes	5669	43.2	65.9	65.9
	2 No	2939	22.4	34.1	100.0
	Total	8608	65.7	100.0	
Missing	-3 Branching/skip	3922	29.9		







65.9



Q13C In the previous question you indicated opposition to antlerpoint restrictions in northeast Washington to manage white-tailed buck populations. Which of the following are reasons why you oppose this strategy?:

Antler-point restrictions limit opportunity for all hunters.

	F	requency	Percent	Valid Percent	Cumulative Percent
Valid	1 Yes	3057	23.3	87.1	87.
	2 No	453	3.5	12.9	100.0
	Total	3510	26.8	100.0	
Missing	-3 Branching/skip	8886	67.8		
	-2 Partial/breakoff	491	3.7		
	-1 No answer	223	1.7		
	Total	9600	73.2		
Total		13110	100.0		

Q13D In the previous question you indicated opposition to antlerpoint restrictions in northeast Washington to manage white-tailed buck populations. Which of the following are reasons why you oppose this strategy?:

There is already an adequate number of mature bucks in the population.

	Frequency		Percent	Valid Percent	Cumulative Percent
Valid	1 Yes	2197	16.8	65.1	65.1
	2 No	1179	9.0	34.9	100.0
	Total	3376	25.8	100.0	
Missing	-3 Branching/skip	8886	67.8		
	-2 Partial/breakoff	491	3.7		
	-1 No answer	357	2.7		
	Total	9734	74.2		
Total		13110	100.0		



65.1 34.9 1 Yes 2 No

